1. **Pick up** Name Folder

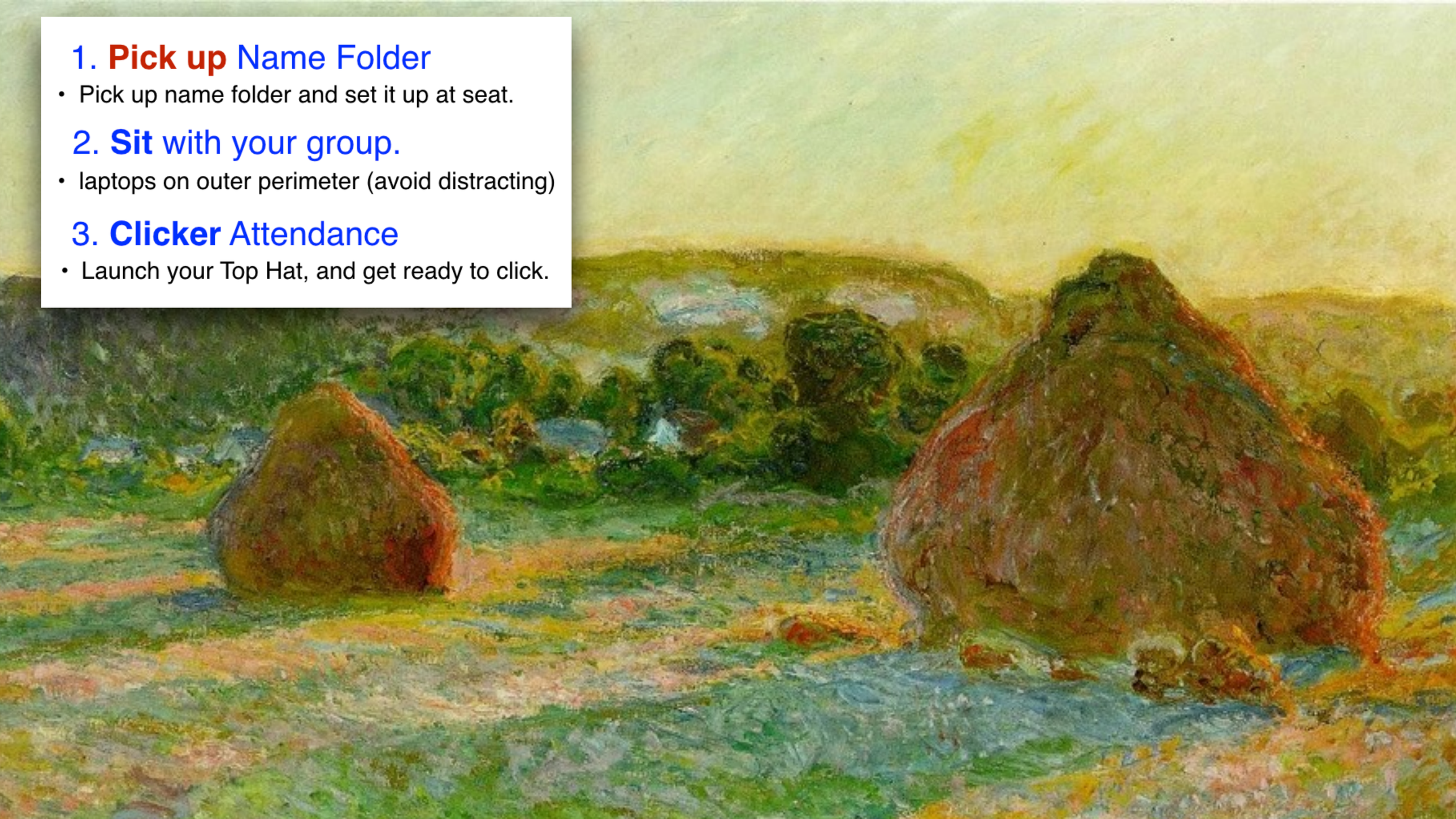
- Pick up name folder and set it up at seat.

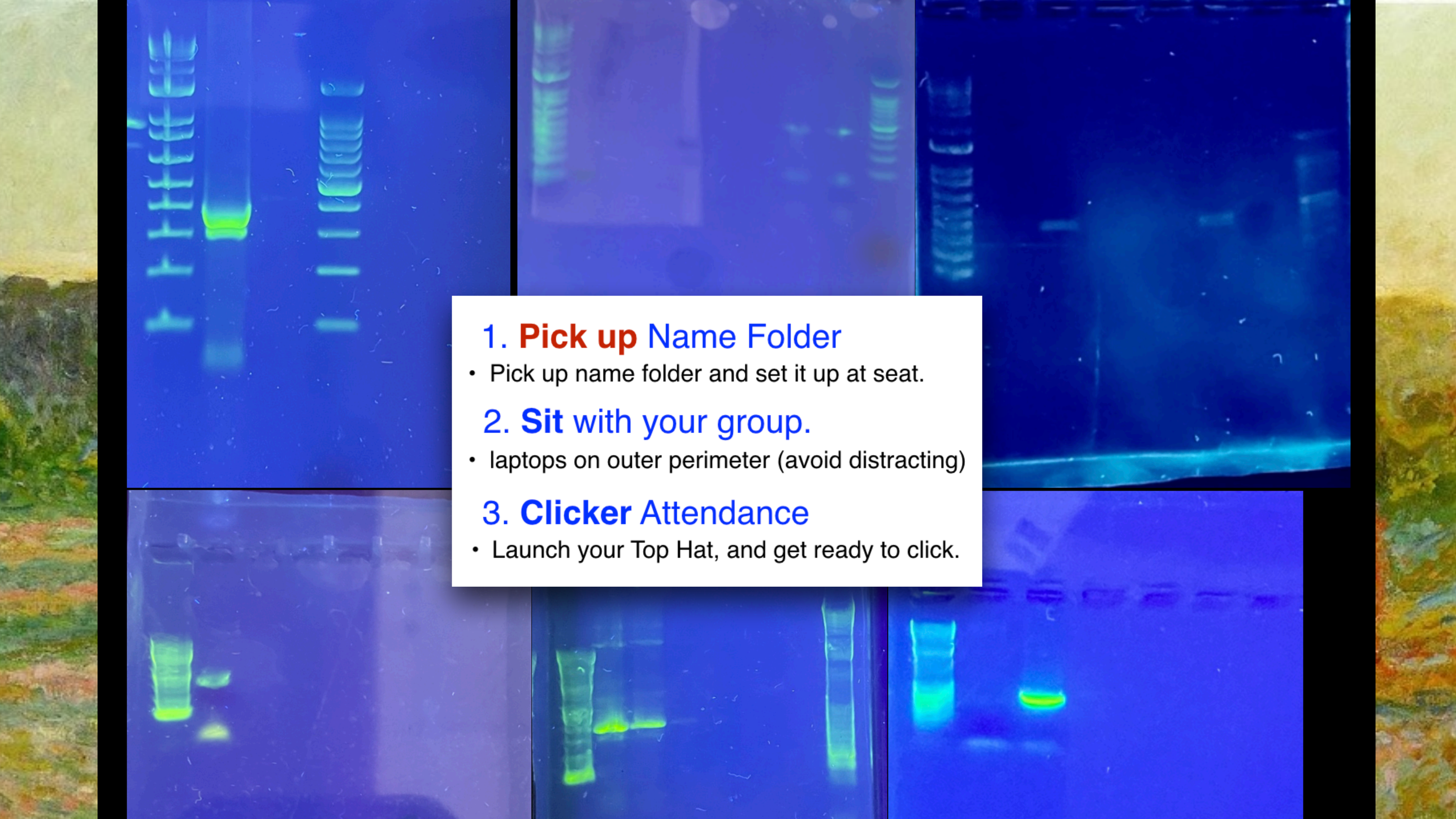
2. **Sit** with your group.

- laptops on outer perimeter (avoid distracting)

3. **Clicker** Attendance

- Launch your Top Hat, and get ready to click.





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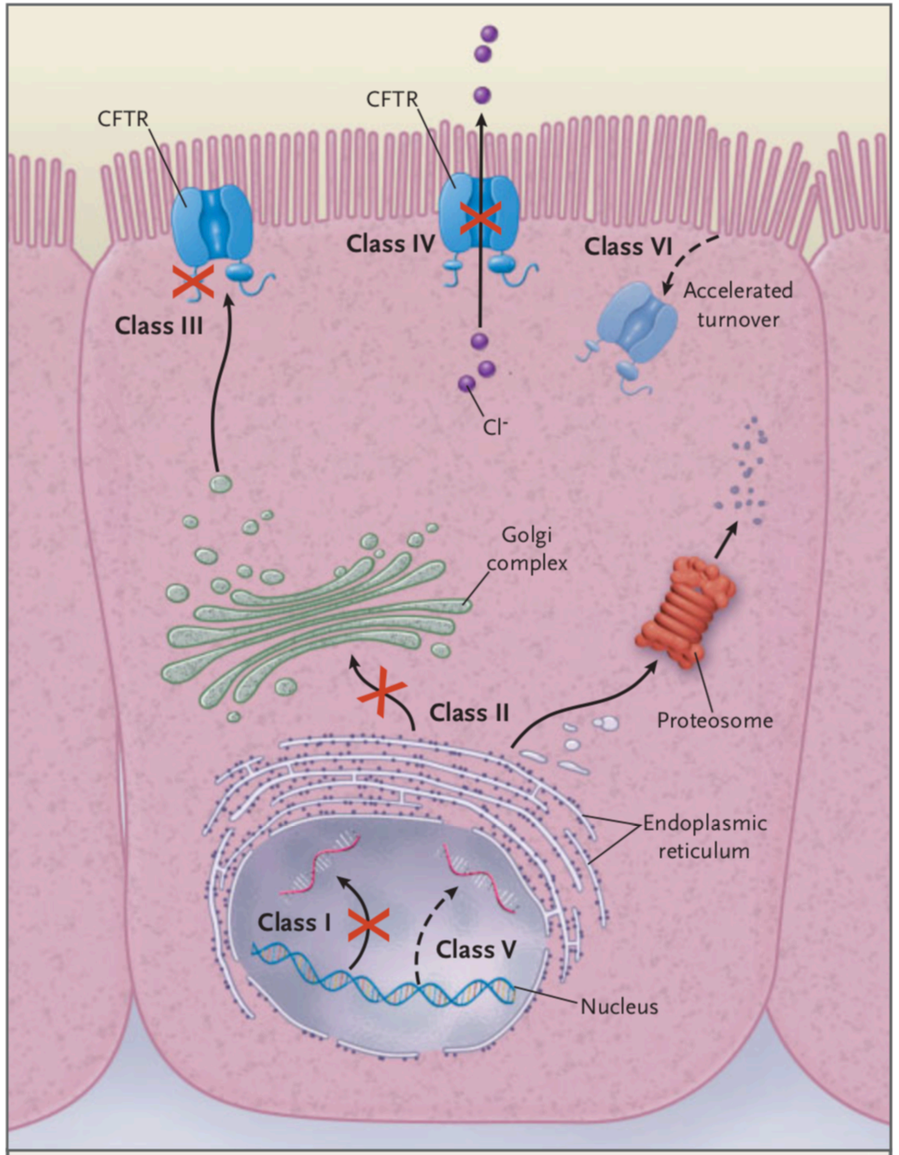
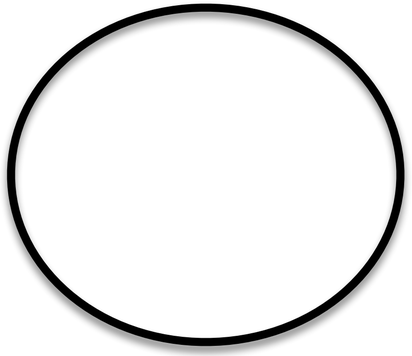
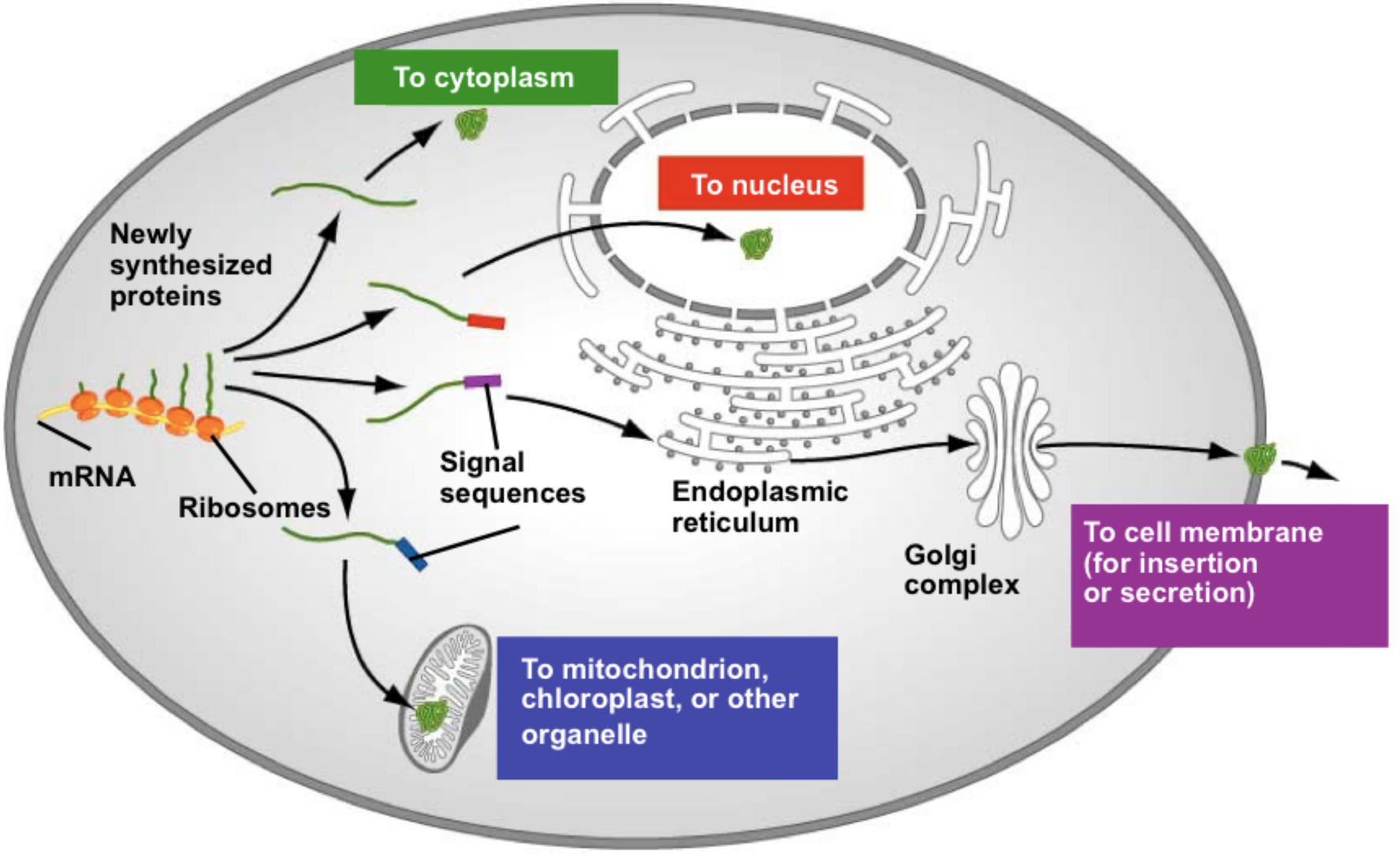


Figure 5. Categories of *CFTR* Mutations.

Classes of defects in the *CFTR* gene include the absence of synthesis (class I); defective protein maturation and premature degradation (class II); disordered regulation, such as diminished ATP binding and hydrolysis (class III); defective chloride conductance or channel gating (class IV); a reduced number of CFTR transcripts due to a promoter or splicing abnormality (class V); and accelerated turnover from the cell surface (class VI).[46]

DRAW IT?




To cytoplasm
To nucleus
Newly synthesized proteins
mRNA
Ribosomes
Signal sequences
Endoplasmic reticulum
Golgi complex
To cell membrane (for insertion or secretion)
To mitochondrion, chloroplast, or other organelle

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https://youtu.be/OZBQW2gE0Ew

Dave Grohl, 10-Year-Old Nandi Bushell and One Very Epic Drum Battle

The Foo Fighters leader and the English prodigy struck up a competitive friendship on social media that has brought them, and thousands of music fans, immense joy.

Dave Grohl and Nandi Bushell after meeting for the first time on a video call in November. Magdalena Wosinska for The New York Times

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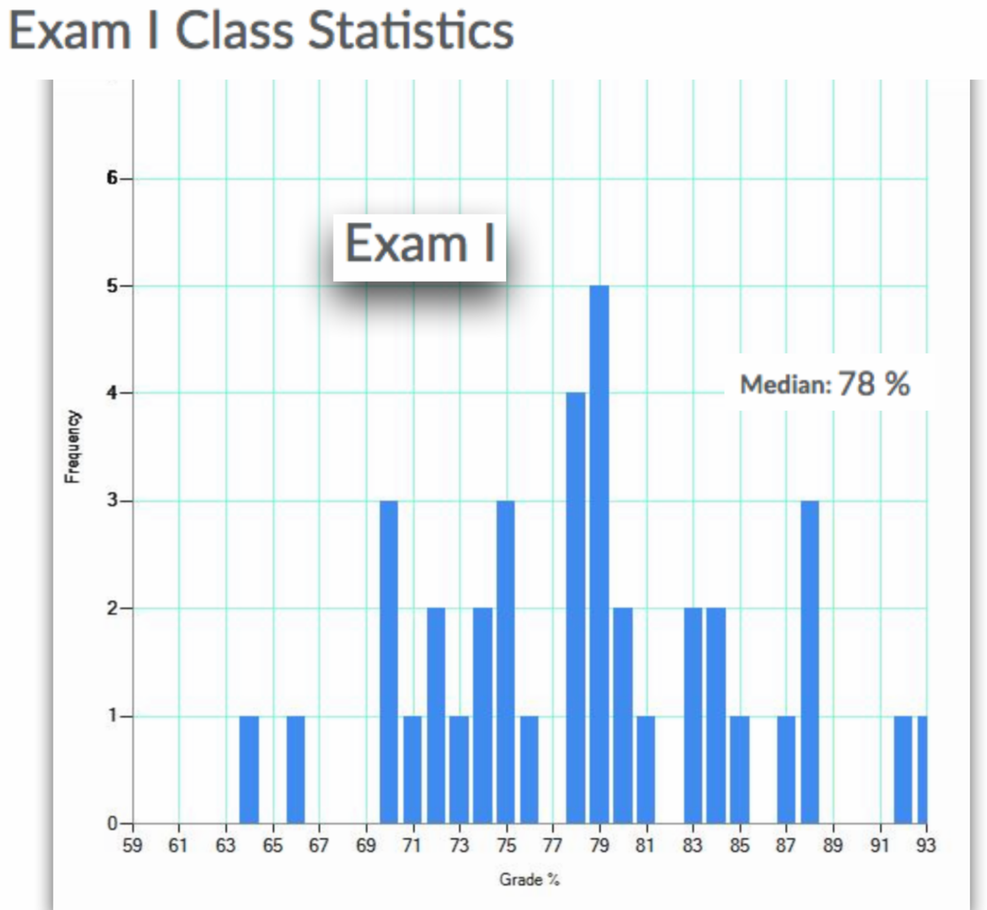
Announcements

1. ***Lab Course: Reminder*** *ONLY buy two <u>published</u> primers (nothing more) and versus which? wt or mt?*
2. ***Exam I****: Pretty strong scores, Way to go.*



Exam sequence

- **Exam I: multiple-choice [low level knowledge]**
- **Exam II: long form essay [higher Bloom scale]**
- **Verbal Final: verbal format [highest Bloom]**

[Traditional Final: multiple-choice format]

Verbal Final Exam

page 34

1. **Draw and Explain Light Reactions**: *"Take your time and draw an illustration of the photosystems and carriers etc important for light reactions. This illustration is so you have something to point at when you explain light reactions to me."*

When you are done explaining light reactions I will ask you questions. First I'll ask about stuff you said that didn't quite make sense to me, then questions like these: What is an absorption spectrum vs action spectrum? Why does a pigment prefer certain colors of light? How are electrons and orbitals involved? Where are we in the cell/leaf? If we had 100 protons in the stroma and 200 in the lumen, how much ATP can we make?

2. **Draw and Explain Calvin Cycle**: "*Take your time and draw an illustration of the Calvin Cycle. This illustration is so you have something to point at when you explain light-independent reactions of photosynthesis to me.*"

When you are done explaining the reactions I will again ask questions. First I'll ask about stuff you said that didn't quite make sense to me or forgot to include [like enzyme names], then questions like these: What does PGA taste like? What are the names of the phases and why? What if we only fixed 1 CO2 molecule, how would that change things?

Transition: OK, let's pretend the glucose you just made in the Calvin Cycle turns into a donut. Preferably a warm Krispy Kreme original glazed donut. Let's eat it.

3. **Draw** {if you'd like} **and Explain Digestion & Absorption**: "*Eat the donut and explain how digestion works in one organ* (I'll pick the organ, you explain function, cells, enzymes, hormones etc) *and then explain absorption at the epithelial villus cell.*"

When you are done explaining digestion or absorption I will again ask questions. First I'll ask about stuff you said that didn't quite make sense or you forgot to include [like enzyme & hormone names] then questions like these: Draw a parietal cell and explain how it makes HCl and the same for the villus cell and how it absorbs glucose. What would happen if the glucose transporter didn't co-transport Na^{2+}, ie it was just a simple channel? How does the glucose molecule get out of the villus cell and into the capillary?

4. **Draw & Explain the Biosynthesis of a protein** (I'll choose which) **and your disease**. *Draw a pancreatic beta cell [or epithelial cell] and explain how it makes/secretes the*

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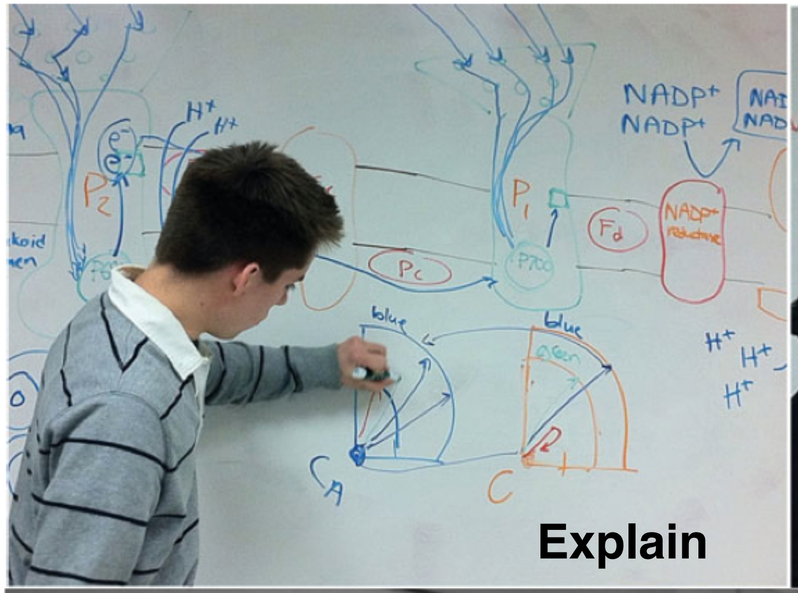
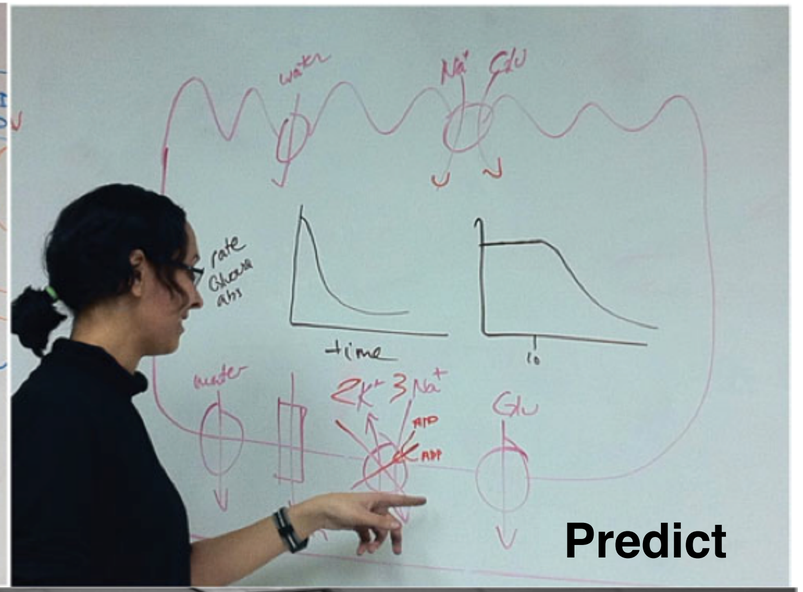
4. **Draw & Explain the Biosynthesis of a protein** (I'll choose which) **and your disease**. *Draw a pancreatic beta cell [or epithelial cell] and explain how it makes/secretes the protein (ie the path DNA -> RNA -> protein -> organelles what they each do and why).*

When you are done I'll ask questions, first about stuff you said that didn't quite make sense to me or forgot to include and then stuff like: What is splicing? How does an hnRNA differ from a mRNA? What is an intron? What is your disease and mutation? What do you predict would happen if we add/subtract some hydrophobic domains/parts to the gene you're studying?

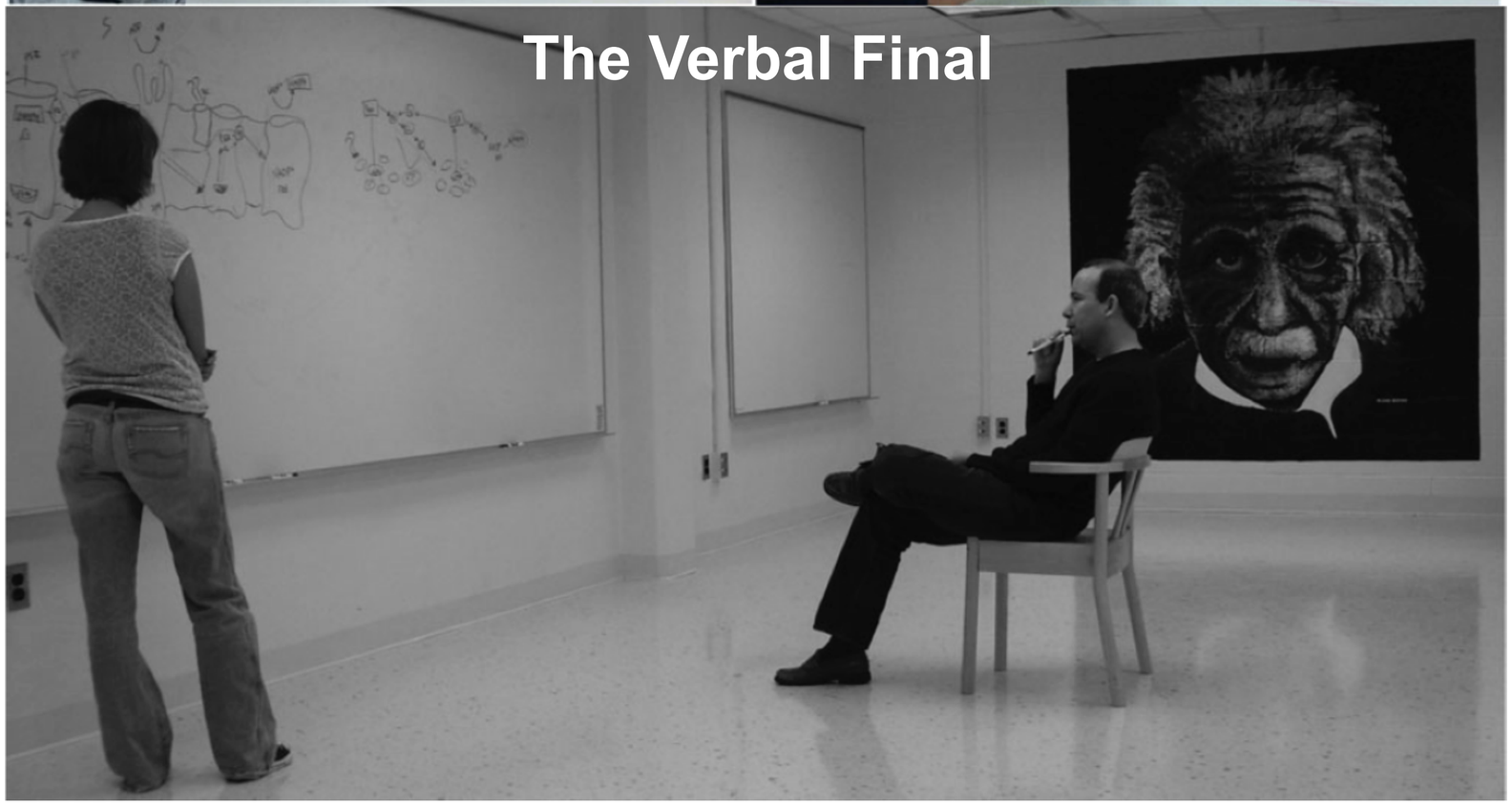


Explain



Predict

The Verbal Final



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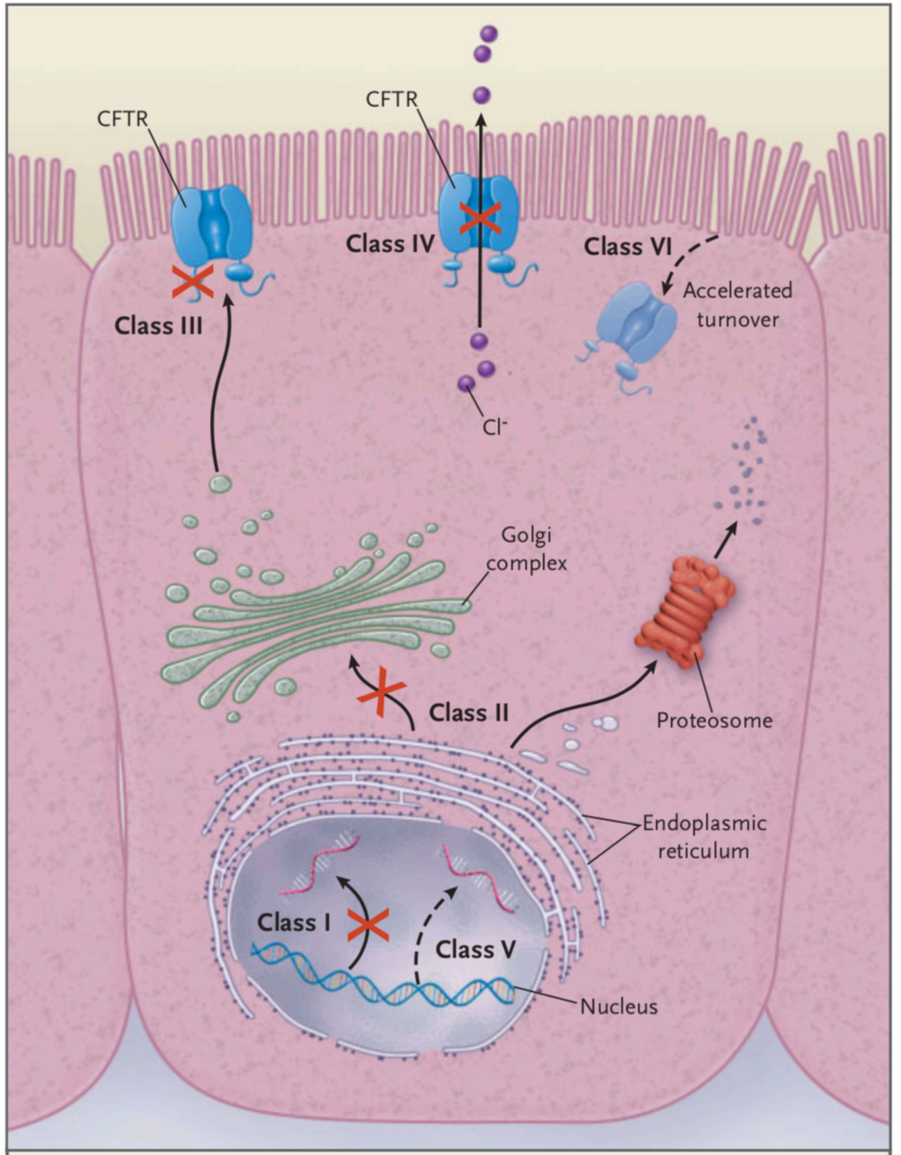

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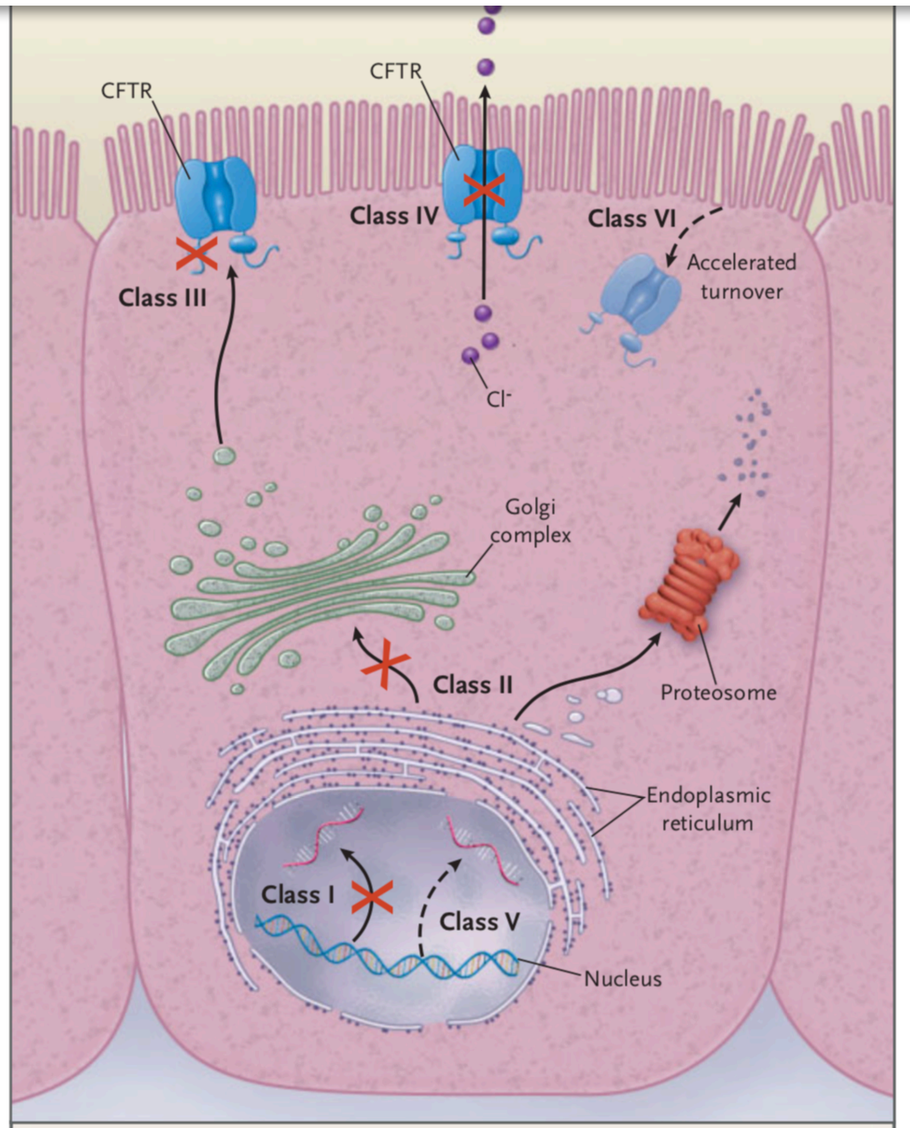
(Aloud)

Which “class” is your group’s mutation? (explain why to Mom)



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