Making Active Learning Sweet and Simple!

Presenter: Emily Coon (COS)
Wednesday, May 15 | 10-10:50AM | Wallace, Room 3420

Welcome! Please take a seat.

Making Active Learning Sweet and Simple

General Biology in the SHED

NOTE:

Each table will be given a bin with supplies

DON’T EAT THE GUMMY BEARS YET!!

Who are we?

Ms. Emily Coon-Frisch
excsbi@rit.edu

Mrs. Michelle Weatherell
mlmsbi@rit.edu

Dr. Sandi Connelly
sjcsbi@rit.edu

Who are you?

HOW DO YOU APPROACH COMPLEX TOPICS IN YOUR CLASSES?

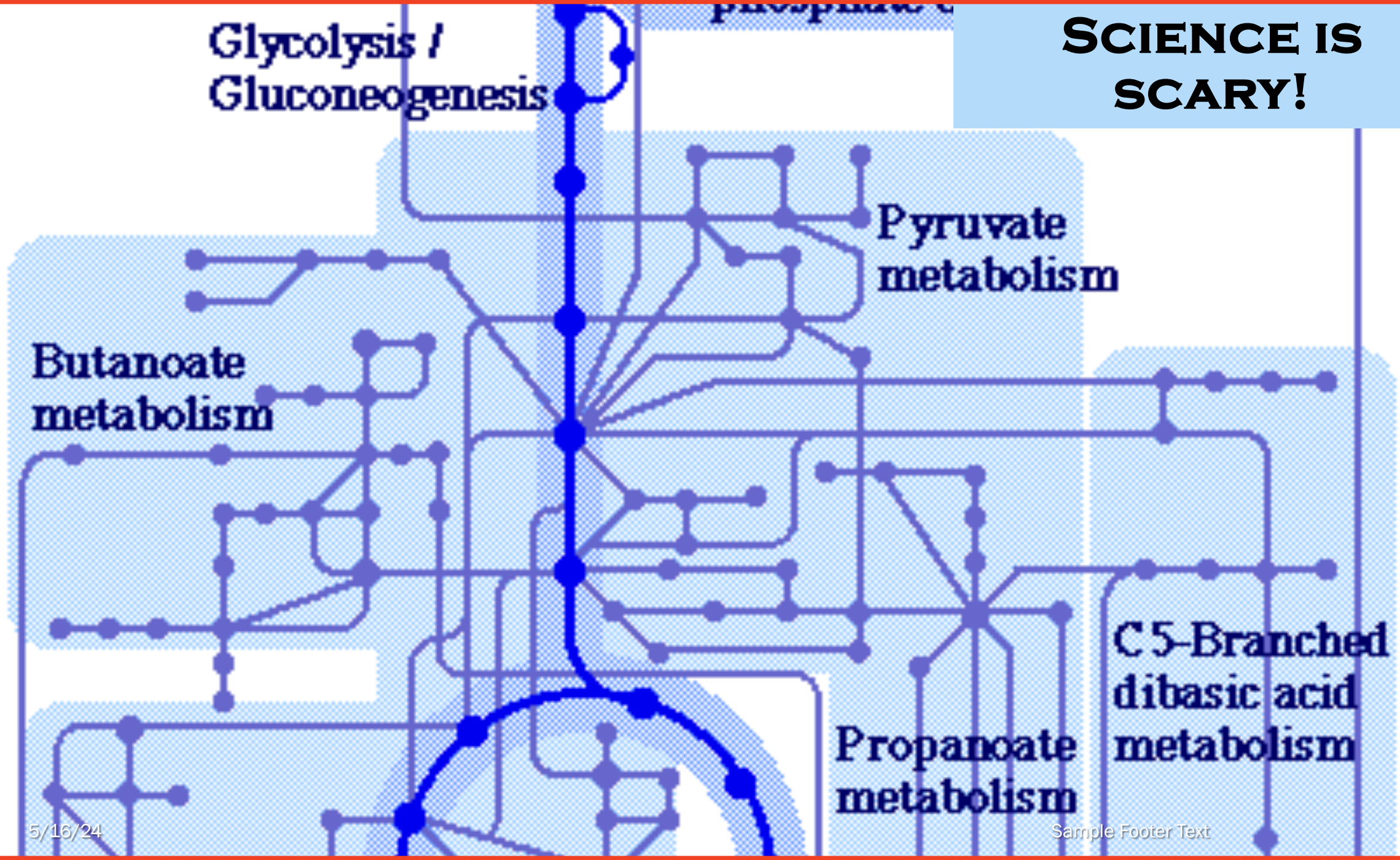
WHY?

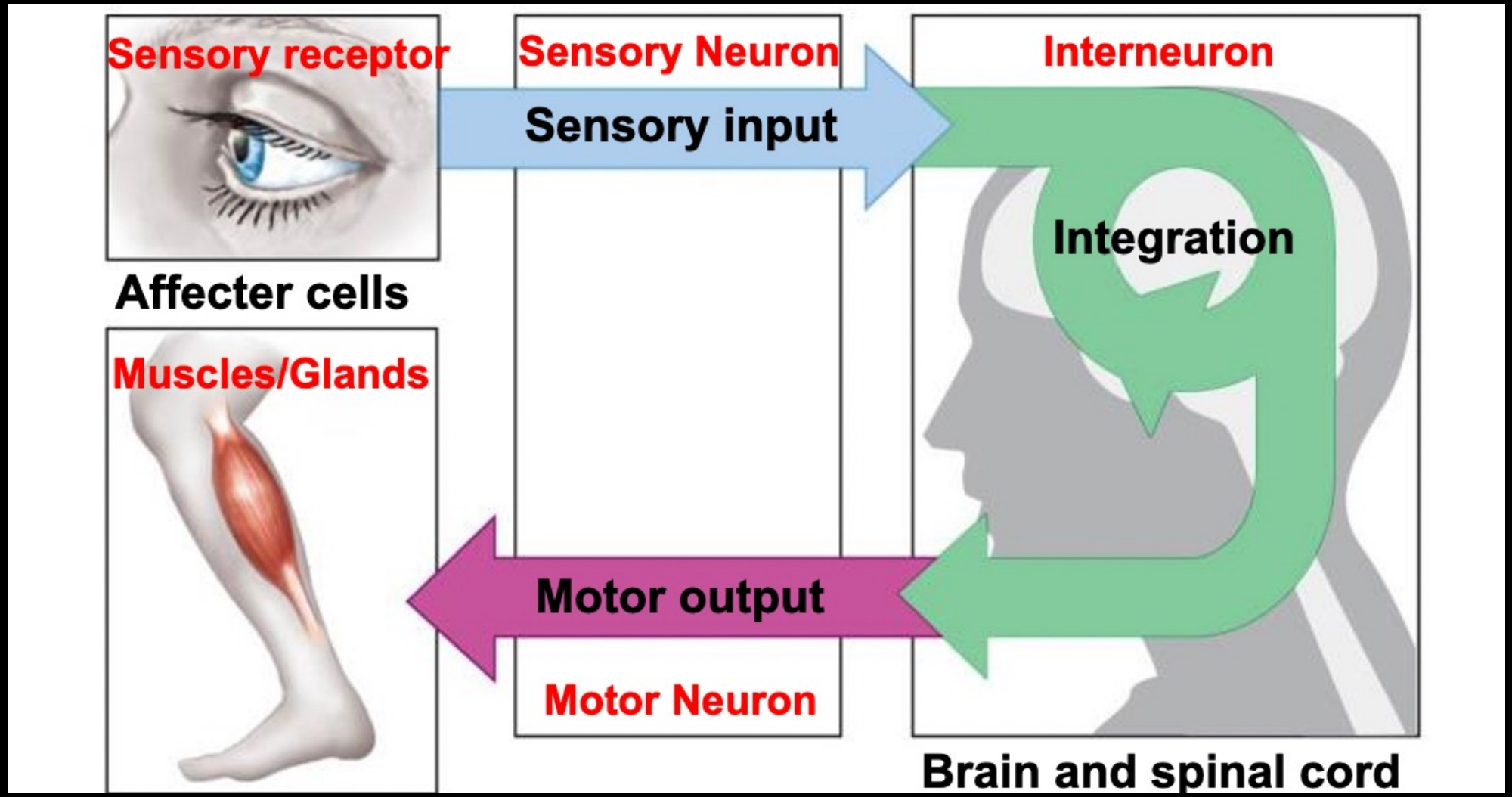
Who are our students?

- Non-majors General Education Lecture Course
- Consists of:
  - All years
  - All majors *except* Biology
- That's a lot of students!
    - 150 students per section X 3 sections


WELCOME TO BIOL 101:
GENERAL BIOLOGY I LECTURE
Biology
study
DNA
education
lab
specimens
molecular
research
science
organisms
cellular

Science is scary!




Sensory receptor
Sensory Neuron
Interneuron
Sensory input
Integration
Affecter cells
Muscles/Glands
Motor output
Motor Neuron
Brain and spinal cord

How does a sensation occur?

Transduction:

Sensory receptor responds to stimulus and converts it to a nerve impulse

It produces a change in the cell's membrane potential

Conduction:

From receptor in the sense organ to CNS (cerebral cortex)

Translation:

DNA translates impulse into sensation

Perception:

Conscious awareness

Instructions

- Divide into pairs.
- Each pair will consist of a “taster” and a “recorder.”
- Obtain one package of Gummy Bears per person.

Taste Test

- To start, have the taster close their eyes and plug their nose.

- The taster should consume one gummy bear from their packet.
  - Identify the flavor (to the best of their ability)
  - Record their confidence level on a scale of 1-5
    - 5 being the highest confidence and 1 being the lowest confidence
  - Repeat protocol with two more gummy bears with eyes closed and nose plugged.

- For the next round, the taster should have open eyes but keep their nose plugged.
  - Repeat for 3 bears with nose plugged.

- Finally, eat the jellybeans with no inhibition of the sense.
  - Repeat with 3 bears.

- Switch taster and recorder and have the other student in the pair go through the same protocol.

Analysis and Questions

- Compare your confidence level with your peers and answer the questions on the worksheet

- Feel free to eat the rest of your gummy bears!

Remember this?...How does a sensation occur?

Transduction:

Sensory receptor responds to stimulus and converts it to a nerve impulse, changing the cell's membrane potential

Conduction:

From receptor in the sense organ to CNS (cerebral cortex)

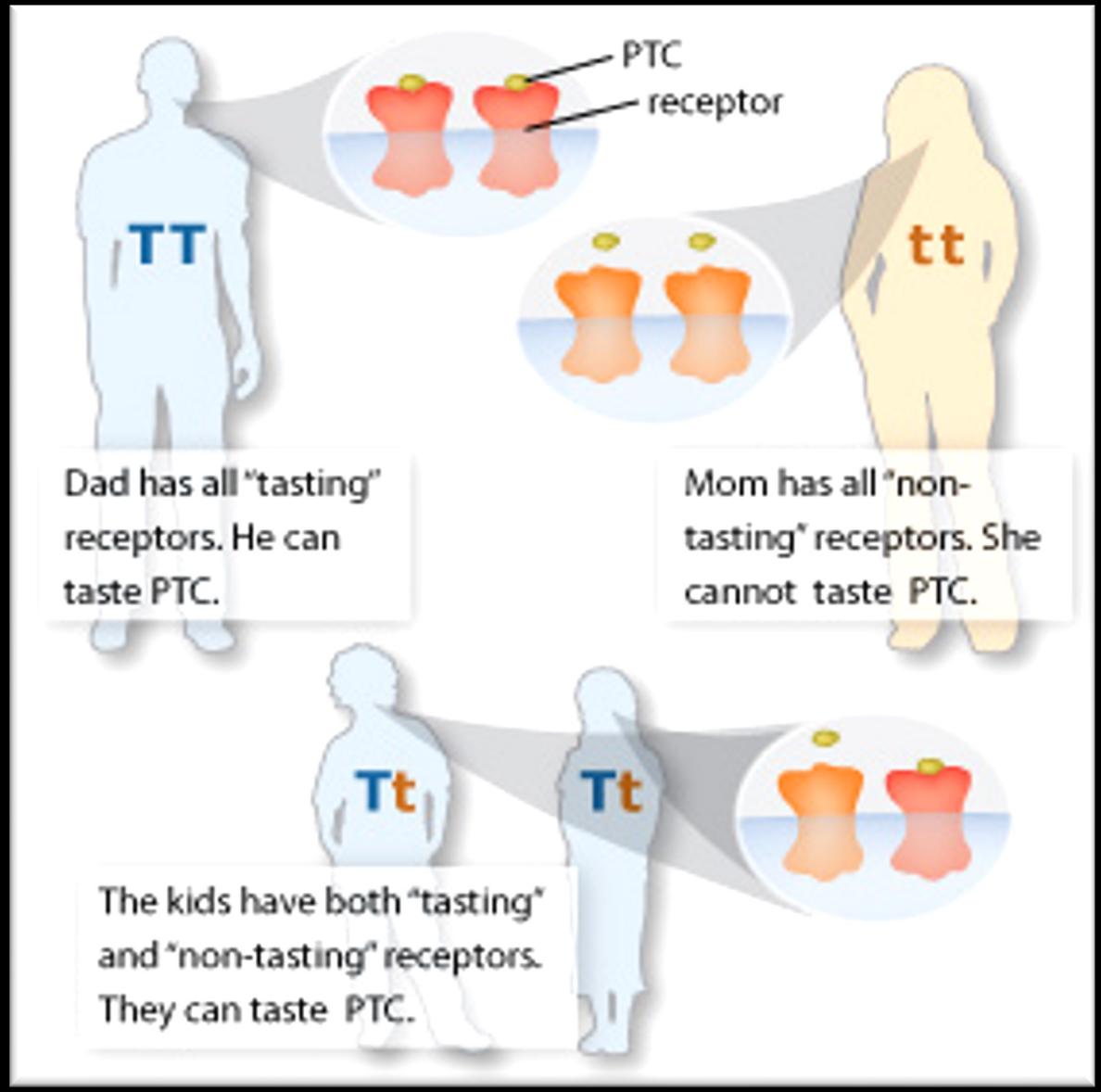
Translation:

DNA translates impulse into sensation

Perception:

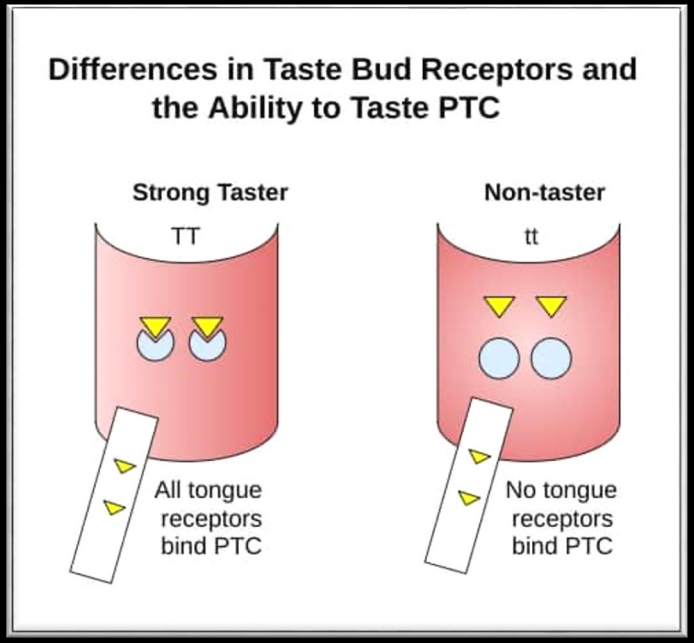
Conscious awareness

What does my DNA have to do with this?



What is PTC?

- PTC = Phenylthiocarbamide (harmless chemical)
  - a.k.a. the Bitter Taste Gene
- Discovered 1931 at the Dupont Chemical Company
- In early 2000s, the ability to taste PTC was officially linked to a single gene on Chromosome #7 in the human genome.

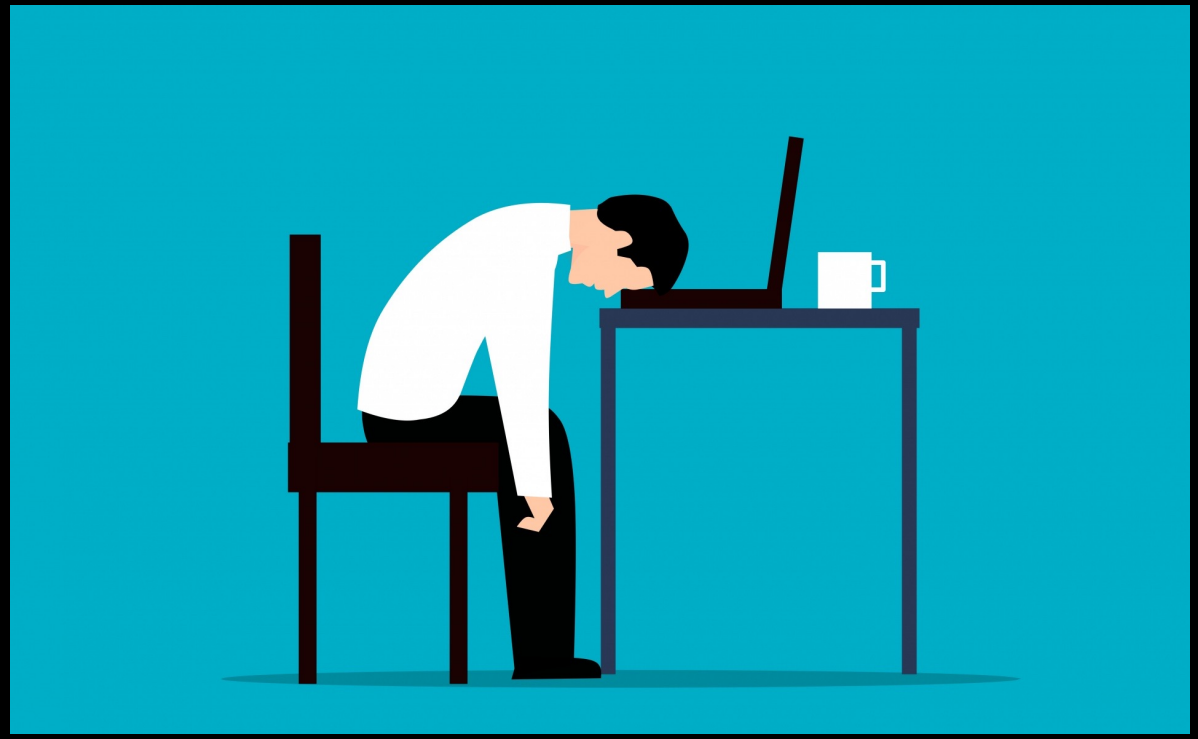


Activity recap

- Exploring results
- Linking results to outcomes
- Reflection on the activity
  - Did you meet the learning outcomes?
  - Group dynamics

Learning Outcomes

Content Learning Outcomes
Define and correctly use scientific terminology in regard to biological organisms and processes.
Describe the organization and structure of the human body
Explain, using appropriate medical terminology, various diseases of the human organ systems as presented in the lecture



What did you experience?

1. *Strengths of activity …*
   - *What was surprising to you?*
2. *Weaknesses of activity …*
   - *What didn’t work for you?*
3. *Comments on working in your group …*

WHAT IS A TOPIC IN YOUR COURSE THAT COULD USE AN OVERHAUL?

WHERE WOULD YOU START?


Thank You
Asante
Merci
Multumesc
Kiitos
Salamat
Welalin
Mochchakkeram
Spasibo
Obrigado
Dank Je
Kia Ora
Terma Kasih
Ua Tsaug Rau Koj
Cam on ban
Grazie
Raibh Maith Agat
Matondo
Arigato
Maake
Dankon
Juspaxar
Matur Nuwun
Chokrane
Nirringrazzjak