

BrainFacts.org

A PUBLIC INFORMATION
INITIATIVE OF:



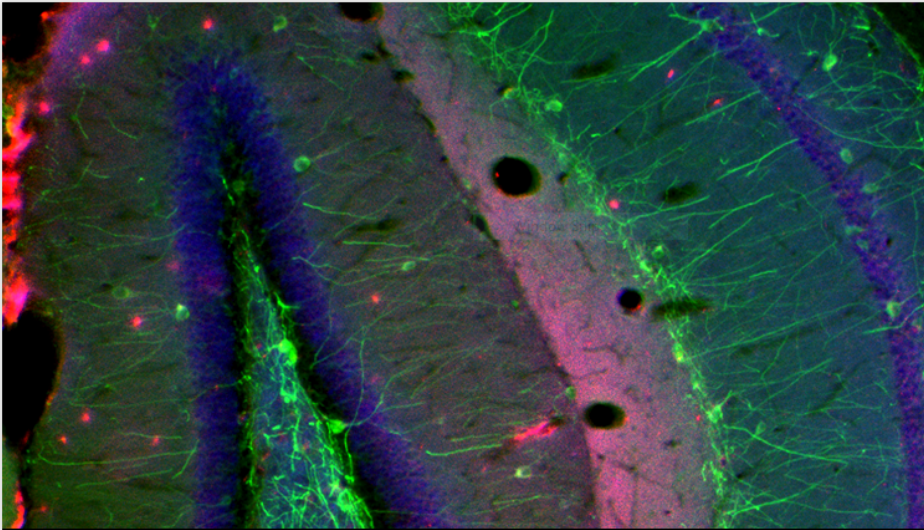
THE
KAVLI
FOUNDATION



GATSBY



SOCIETY *for*
NEUROSCIENCE



Bacteria in the Brain



Depression's Impact on Memory



DIY Neuroscience Carnival



THINKING, SENSING & BEHAVIOR

DISEASES & DISORDERS

BRAIN ANATOMY & FUNCTION

NEUROSCIENCE IN SOCIETY

IN THE LAB

The Arts & the Brain

For Educators

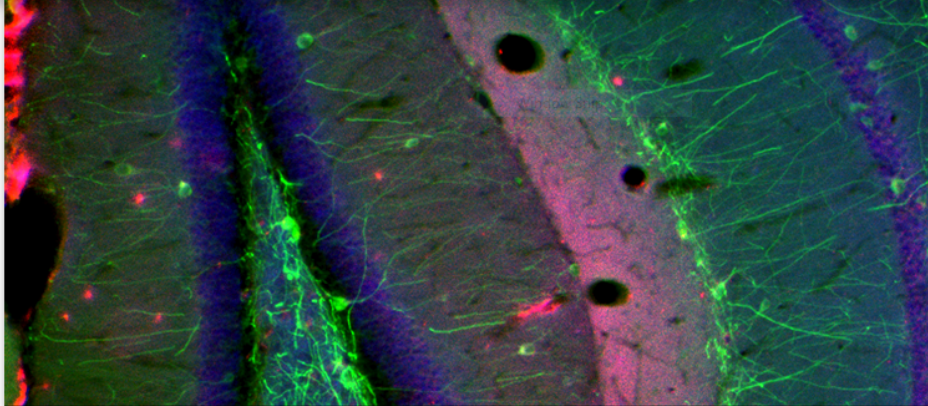
Law, Economics & Ethics

Neuroscience in the News

Supporting Research

Tech & the Brain

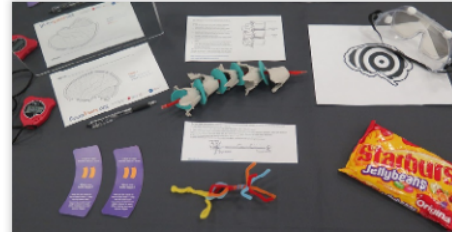
See All



Bacteria in the Brain



Depression's Impact on Memory



DIY Neuroscience Carnival

Reconnecting Our Brains,
One Cell at a Time

#showusyourbraincell

Your Moderator & Speakers



Bill Griesar, PhD
Senior Instructor,
Psychology at
Portland State
University;
Neuroscience
Coordinator, NW
Noggin



Jeff Leake, MA
Artist, University
Studies/Psychology
Instructor at Portland
State University; Arts
Coordinator, NW
Noggin



**Richard Wingate,
DPhil**
Head of Anatomy
at King's College
London

#showusyourbraincell

Bill Griesar



Bill Griesar

Senior Instructor at
Portland State University

Bill Griesar, Ph.D. is Senior Instructor in Psychology at Portland State University and a co-founder of NW Noggin. He has developed and taught neuroscience courses at Portland State University, Oregon Health & Science University, Clark College, amongst others since 2001. Through NW Noggin (which is entirely volunteer) he's met with more than 40,000 K-12 students over real brains and art. He's been recognized as an innovator by the Obama White House and has won numerous teaching awards.

Jeff Leake



Jeff Leake

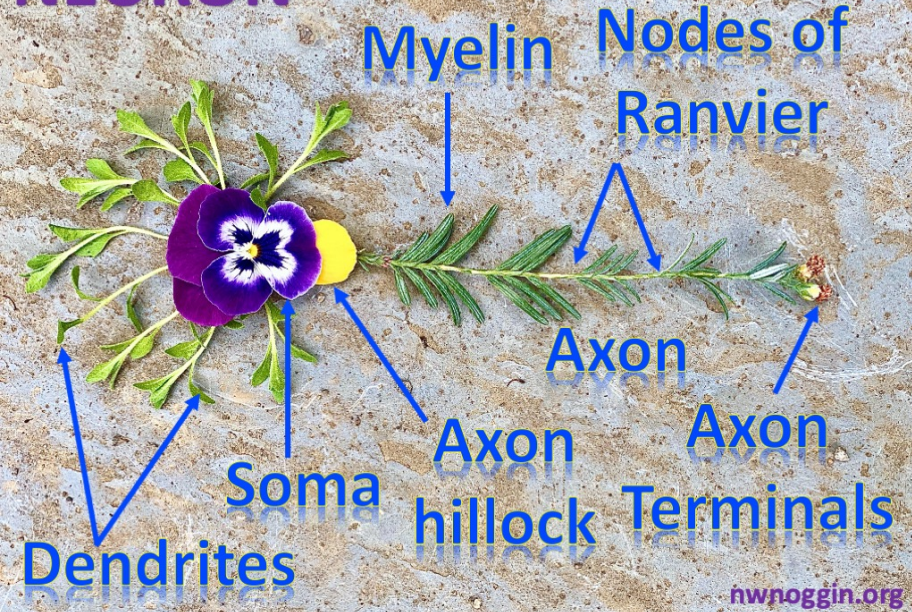
Artist, Instructor at
Portland State University

Jeff Leake has dedicated himself to exploring the intersection between art and science. He currently teaches in the Psychology and University Studies departments at Portland State University where he teaches art and neuroscience. He is also the president, co-founder and arts coordinator of NW Noggin. As part of this organization, he has traveled around the country, lecturing and teaching neuroscience through art and was recognized as an innovator by the Obama White House.

Art & Brains!



NEURON



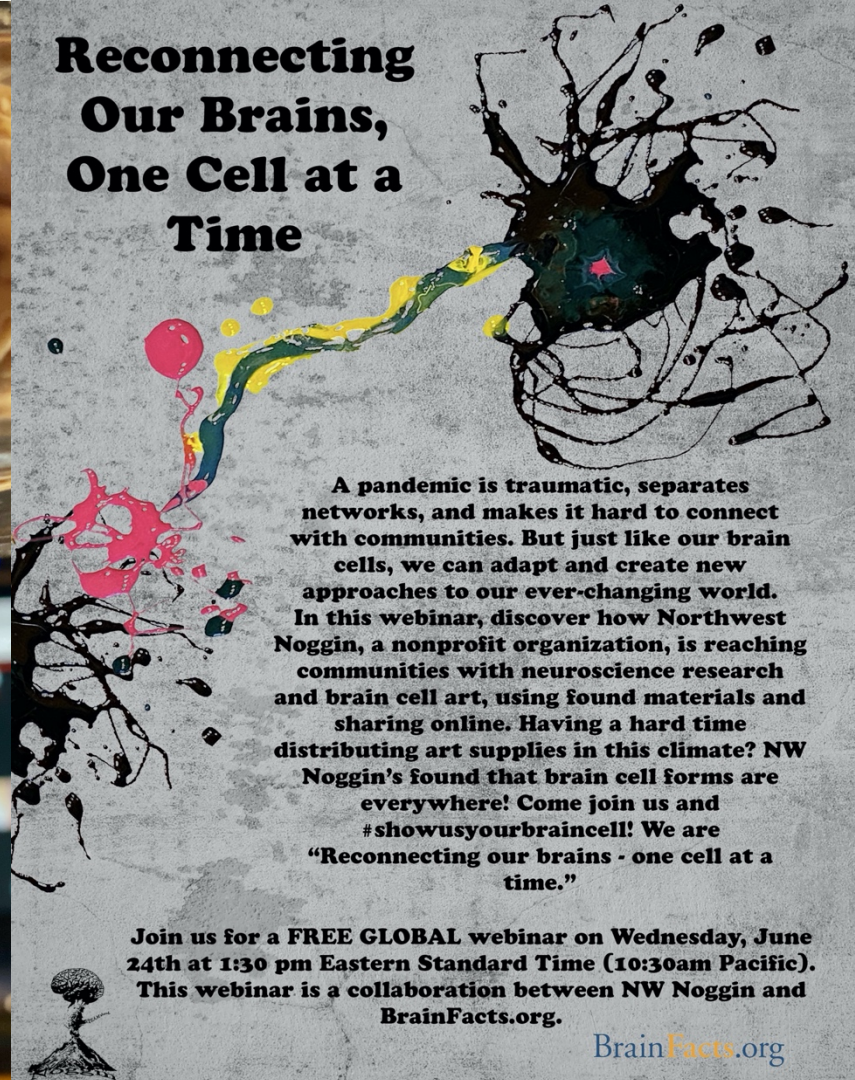
• Jeff Leake, MA

- Instructor, University Studies, Portland State University
- Co-Founder/Arts Coordinator, nwnoggin.org

• Bill Griesar, Ph.D.

- Senior Instructor II, Psychology, Portland State University
- Affiliate Graduate Faculty, Behavioral Neuroscience, OHSU
- Co-Founder/Neuroscience Coordinator, nwnoggin.org

Reconnecting Our Brains, One Cell at a Time



A pandemic is traumatic, separates networks, and makes it hard to connect with communities. But just like our brain cells, we can adapt and create new approaches to our ever-changing world. In this webinar, discover how Northwest Noggin, a nonprofit organization, is reaching communities with neuroscience research and brain cell art, using found materials and sharing online. Having a hard time distributing art supplies in this climate? NW Noggin's found that brain cell forms are everywhere! Come join us and #showusyourbraincell! We are "Reconnecting our brains - one cell at a time."

Join us for a FREE GLOBAL webinar on Wednesday, June 24th at 1:30 pm Eastern Standard Time (10:30am Pacific). This webinar is a collaboration between NW Noggin and BrainFacts.org.

BrainFacts.org

NWNOGGIN



nwnoggin.org

Arts integrated neuroscience
outreach for K-12 & community



Sleep
Anxiety
Depression
ADHD
Autism
Development
Perception
Drugs
Memory
Language
Racial Bias
...



***What you do
has relevance
GO PLACES***



We all pay for research



Greater understanding
More support for research
Increased participation
Less confirmation bias
New directions
FUN!

Connections matter

BUILD NEW CONNECTIONS



- **Academic priority K-12, urban/rural communities, tribal majority schools**
 - Not always well-funded, or valued, often ignored, subjected to standardized testing that primarily benefits others. Complex brain development underway, unacknowledged diversity, racism, bias, police brutality, mental health...
- **Houseless youth (p:ear), incarcerated youth (MaLaren/Coffee Creek Correctional Facilities)**
 - “It’s like people see me as an object, not as a human being”
- **Young graduate researchers, undergraduates (PSU, OHSU,...)**
 - How does my research relate to the world? How can I explain it?
 - Where can I go from here? “Alternative careers” in science...
- **Artists: Painters, Dancers, Storytellers, Musicians, Poets**
 - How does my work relate to other fields? How do I connect with new audiences?
 - How is my practice influenced and enriched by discoveries about the brain?
- **Area businesses (BioGift, Intel, Fort George, Floyds/Street 14, Hospitals)**
 - How can we better connect with everyone in our community?
- **Members of the public**
 - Why are my taxes spent on research? Art? What are we discovering? Making?



**Oh the places
you'll go!**

Why art & brains..?

- Motivation, engagement, **empathy**
- Exploration, creativity, INNOVATION
- **Personal relevance of STEAM material**



N.W. Noggin
@NWNoggin

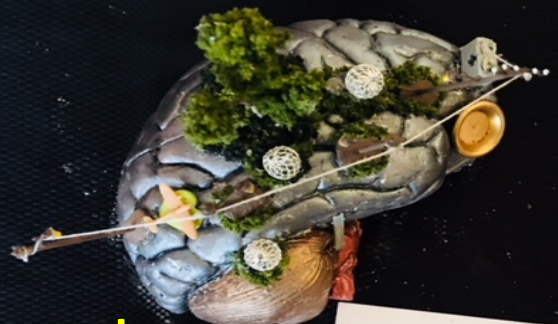
Building a #rosehipneuron in
#pipecleaners 🧡 #nwnoggin 🧠🎨
#sciart #scicomm 🦋
nwnoggin.org/2018/08/31/ros...



To see other people



Researchers
Clinicians
Policy makers
Houseless youth



Bunny:
"we are all
connected"

HOMELESSNESS & THE BRAIN

Thurs, Oct 19th
10am - 1pm



p:ear mentor gallery
338 NW 6th Ave
nwnoggin.org pearmentor.org
STREET KIDS
ART
NEURO-
SCIENCE

Rural Outreach

TO GO PLACES!

Food, housing, baby goats...

Siletz, Amity &
Willamina, OR
Pop: 4,000

Davenport, WA
Pop: 1,700

La Grande, OR
Pop: 13,000

Heppner & Ione, OR
Pop: 1,240

Meservy
Meadows,
OR Pop:
~40



Neuroscience & Law

To listen, learn, empower & make change



Youth get visual, hands-on experience with the brain

NW Noggin, a neuroscience outreach nonprofit, reached out to youth at MacLaren Youth Correctional Facility this week to teach about brain development.

 Lindsay Keefe on January 24, 2019



MacLaren Youth Correctional Facility



At SfN conferences



Posters, art of neuroscience and...

School visits



Turner Elementary, DC



Public outreach and connection

And also, in the U.S., to Capitol Hill

**More connections: Congressional office visits
Congressional Neuroscience/STEAM briefing**

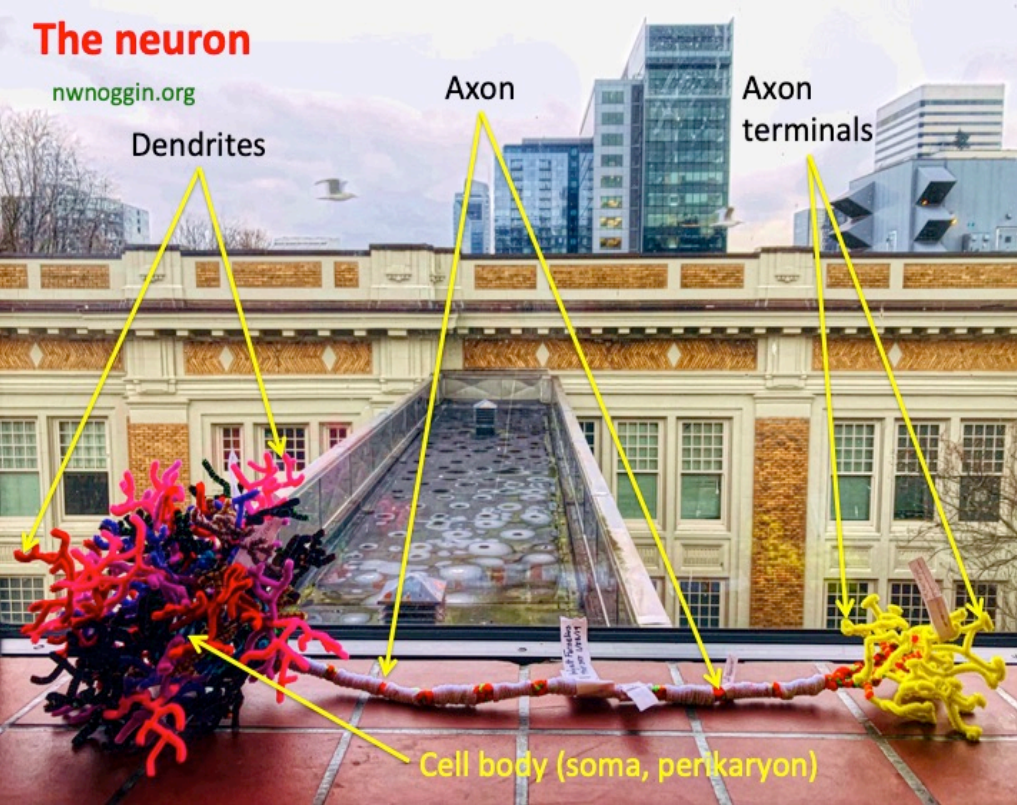
**“Bipartisan”
neuron**



Research should inform policy

The neuron

nwnoggin.org



MAKE YOUR OWN: Details @ nwnoggin.org

Pipe cleaner brain cells!

Neurons are a type of brain cell

The majority of neurons share some basic features

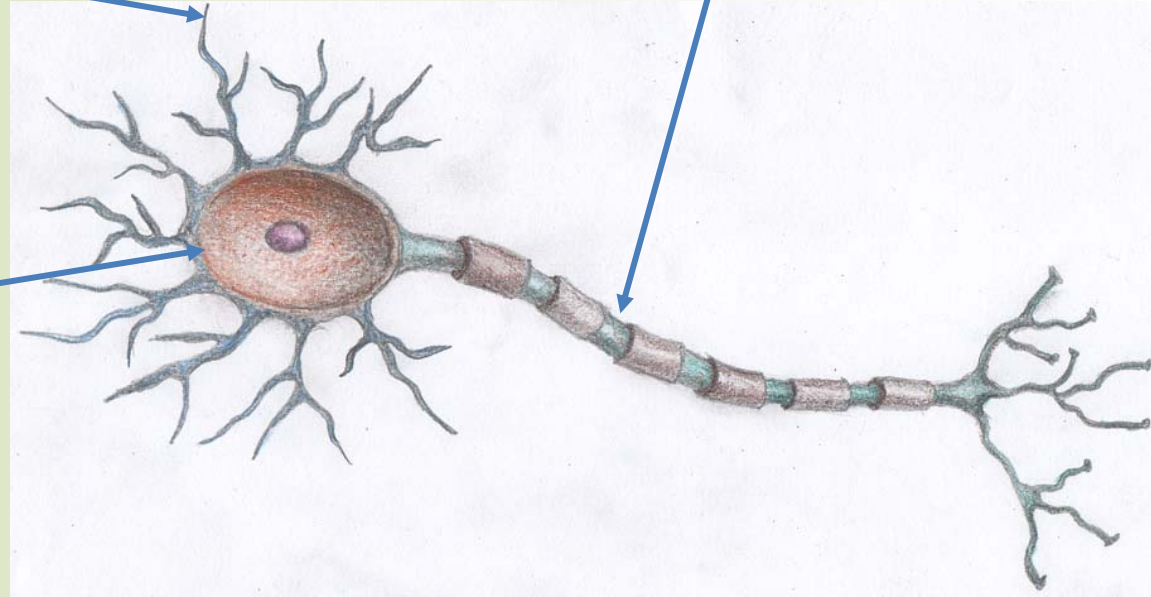
Dendrites

(Receive input from other neurons at gaps called **synapses**)

Cell Body

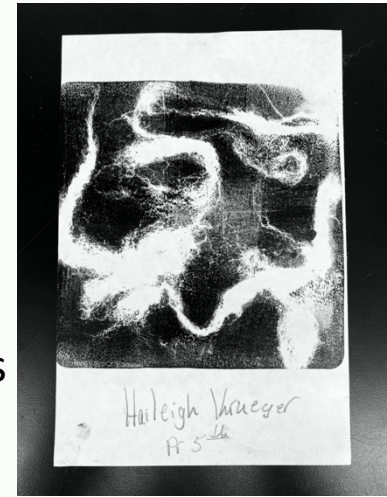
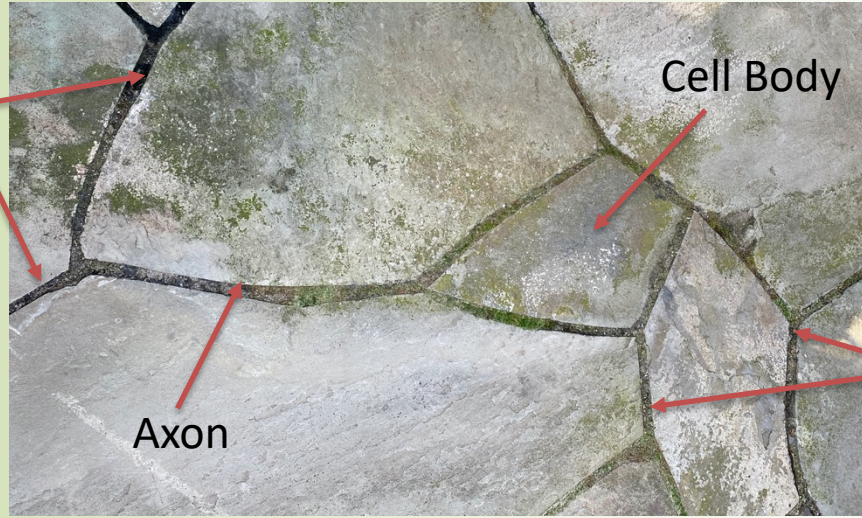
(or Soma, location of **nucleus** and cell **DNA**)

Axon (Carries electric message)



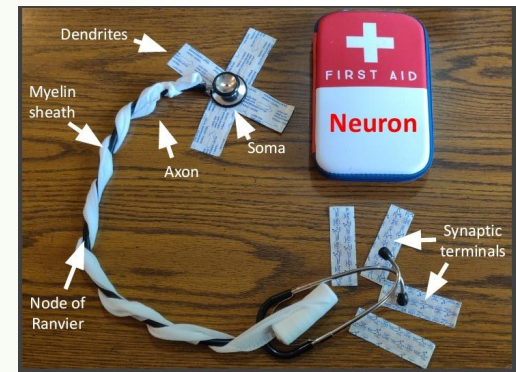
Found Object Brain Cells

Take a look around you, what things do you see that share those structures?



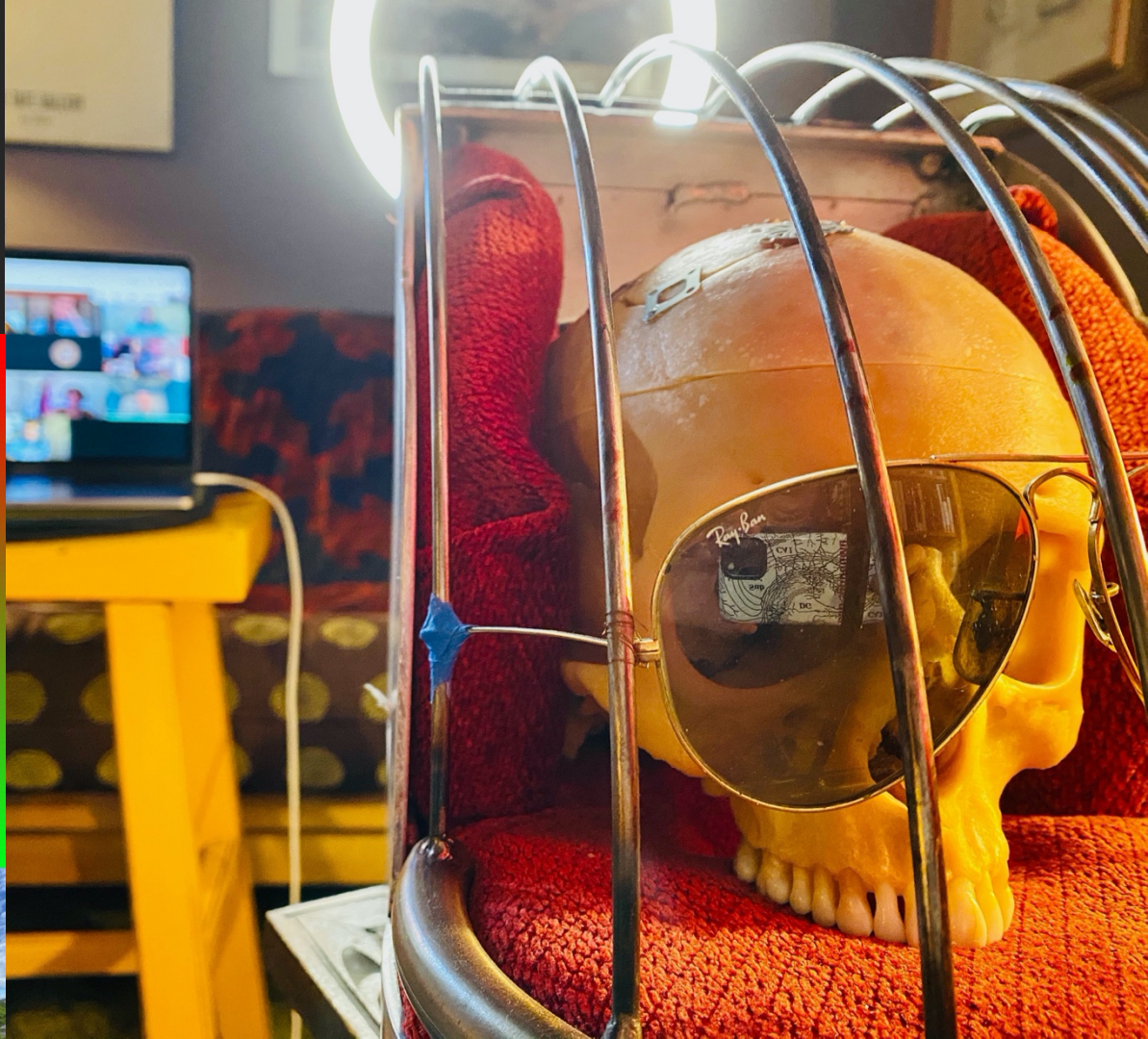
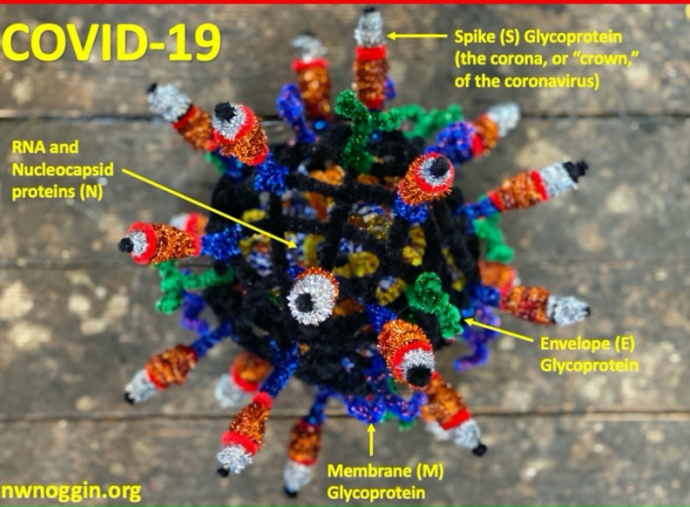
Can you construct a neuron out of things that you find?

What things for you represent the function of a neuron? Or the function of specific parts of a neuron? Do those things have personal meaning, or say something about you?



Pandemic connections

COVID-19





Portland Public Schools

Spring 2020



#showusyourbraincell



Neuron

By Leigh Wilson

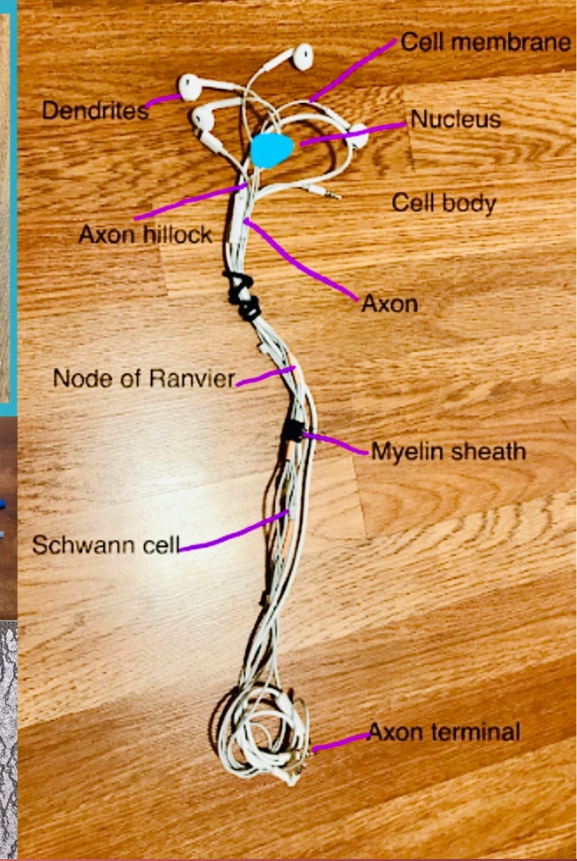
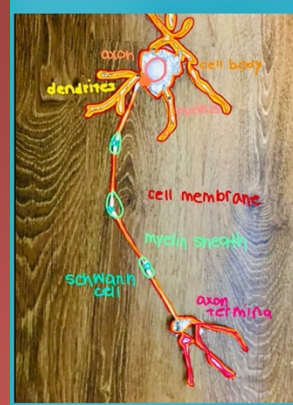
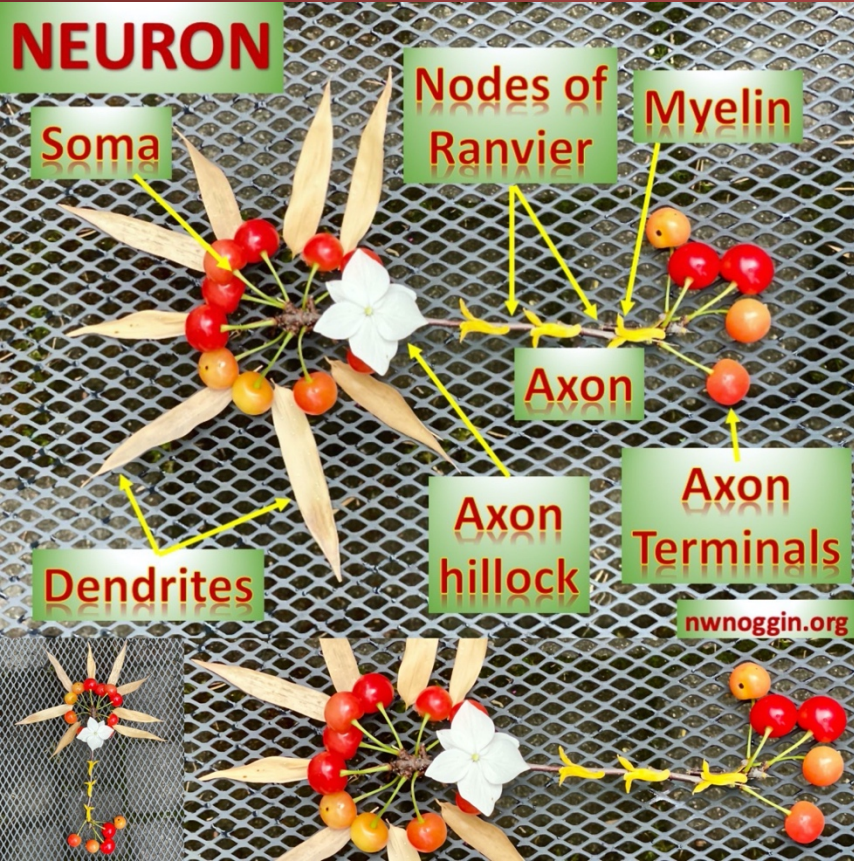


#showusyourbraincell

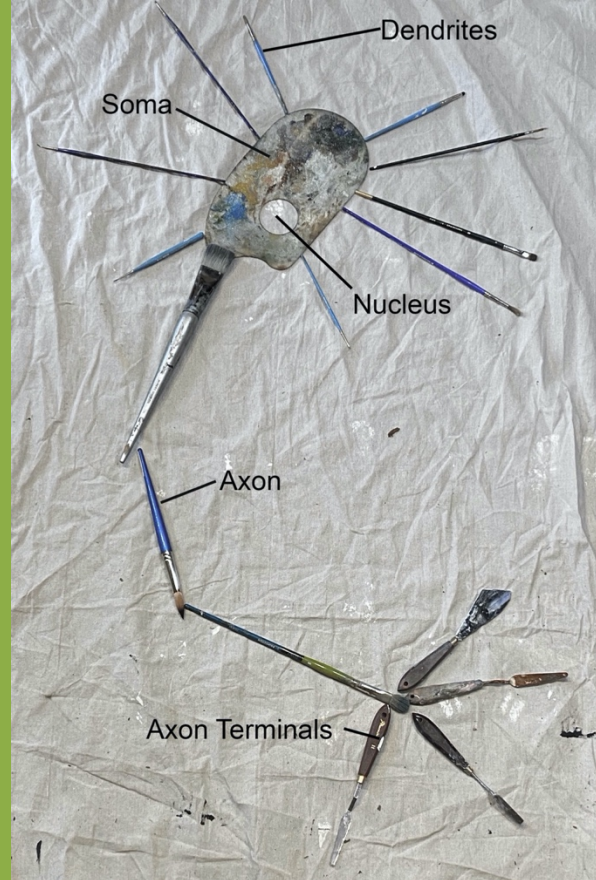
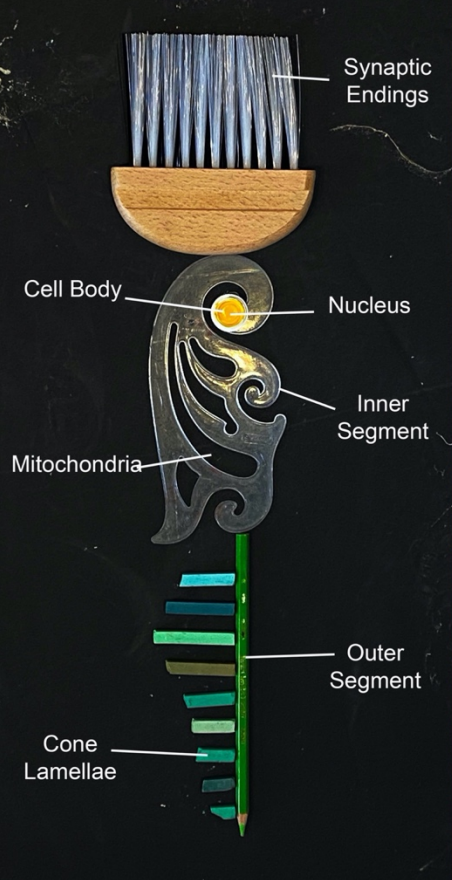
*How does the brain react to trauma?
What in our brain makes us bored?
How does our brain know what's bad for us besides using common sense?
What happens when the fusiform gyrus is damaged?
Is synaesthesia linked to a certain part of the brain?
Where in the brain are memories kept?
How does the brain remember taste? Like when you eat something, how does your brain remember which taste it is?
How do we remember sound?
Why do we sleep and dream?
How does the brain react to addictions?
How much memory does your brain have? "I'll forget where my phone is, but then I'll remember some random crap from when I was 6, which isn't fair because I don't care about when I was 6."
Why do some people agree on the same things but disagree on other things?
Is it possible that your brain may interpret colors differently than other people?
What are dreams and why do we have them?
Why are there so many different ways that people cope?*



NEURON



#showusyourbraincell

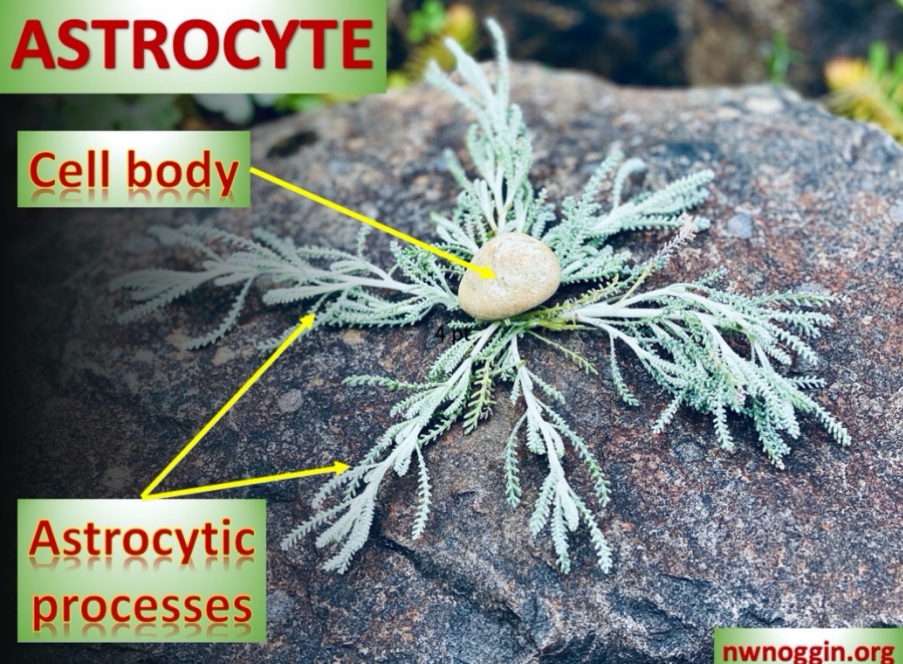


#showusyourbraincell

ASTROCYTE

Cell body

Astrocytic processes



nwnoggin.org



#showusyourbraincell

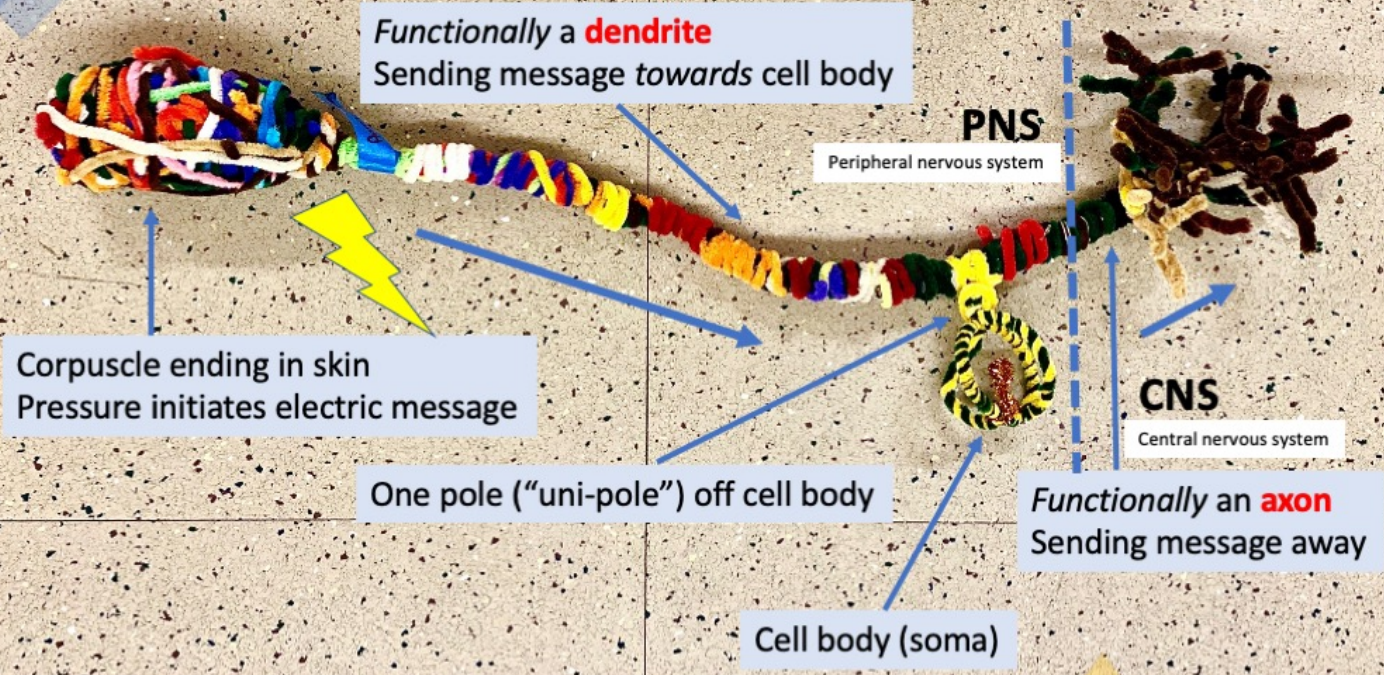
ANY BRAIN CELLS
 Glial cells
 Pyramidal neurons
 Photoreceptors
 Inner hair cells
 Nociceptors
 Rhombic lip neurons
 Meissner's corpuscles



Meissner's corpuscle

#showusyourbraincell

Specialized afferent (sensory) neuron
 For sensory DETECTION of light touch



A "pseudo-unipolar" afferent somatosensory neuron
 This type of cell can be extremely long (from toe to brainstem!)



#showusyourbraincell

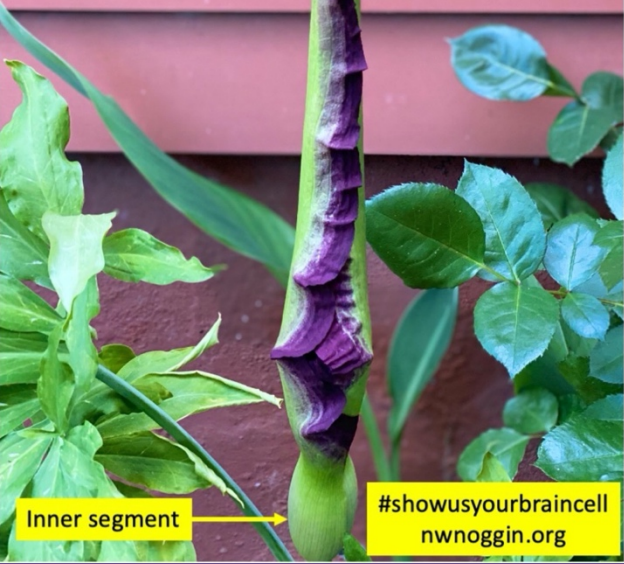
Dracunculus Vulgaris

Smells like rotting flesh
Pollinated by flies

Or...retinal cone cell?

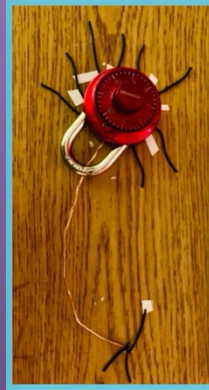
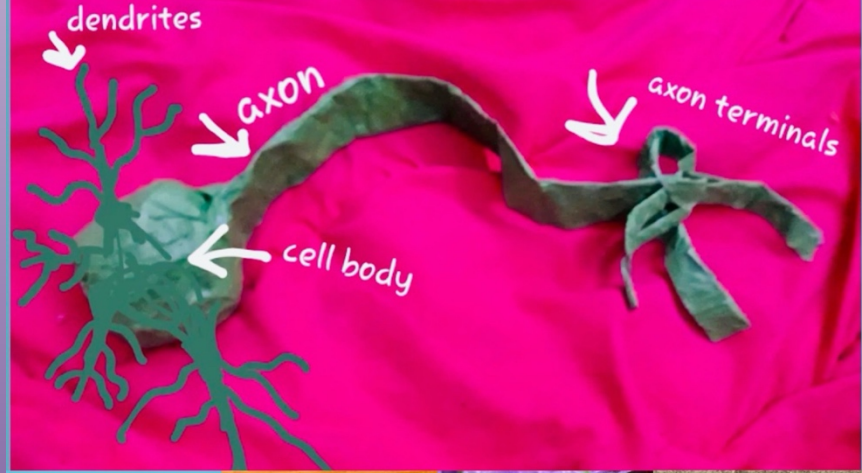
Membranous disks
(sites of photopigment)

Outer segment



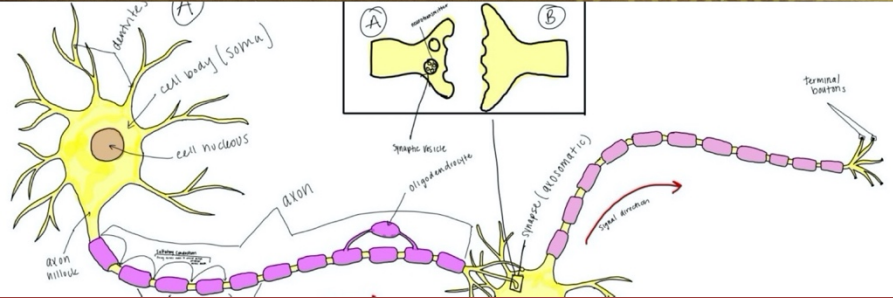
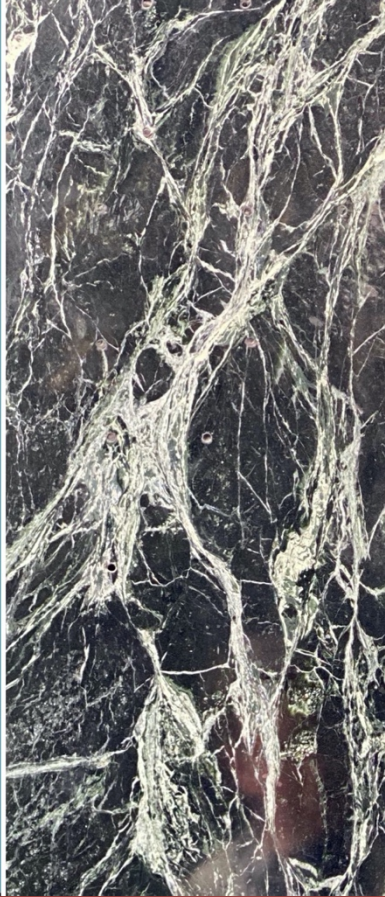
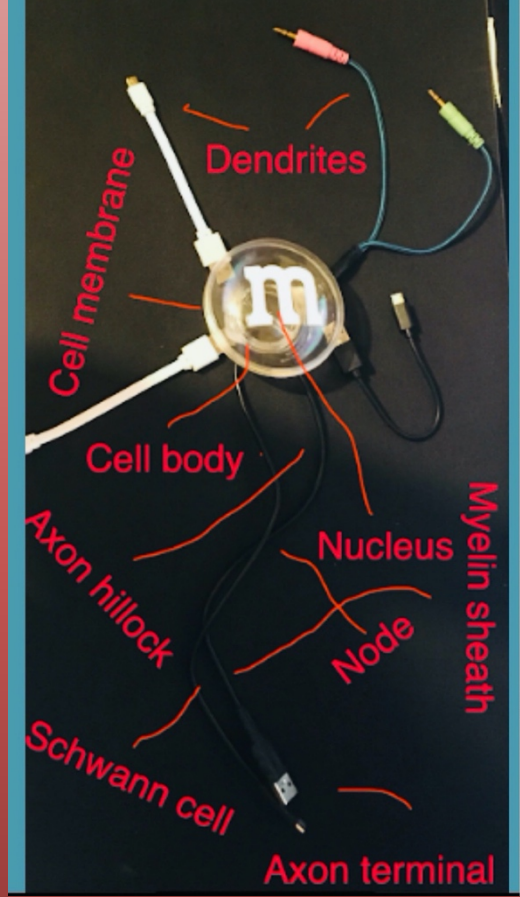
Inner segment

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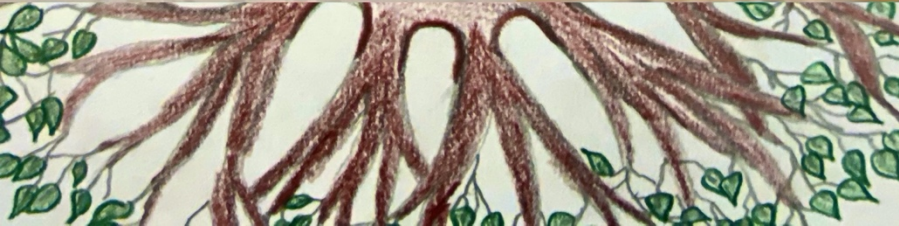
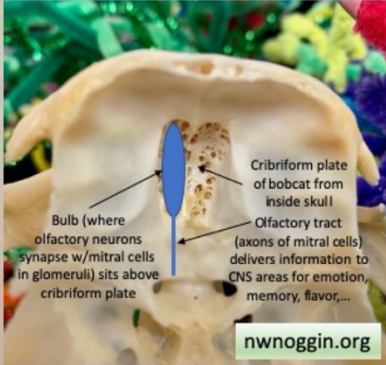
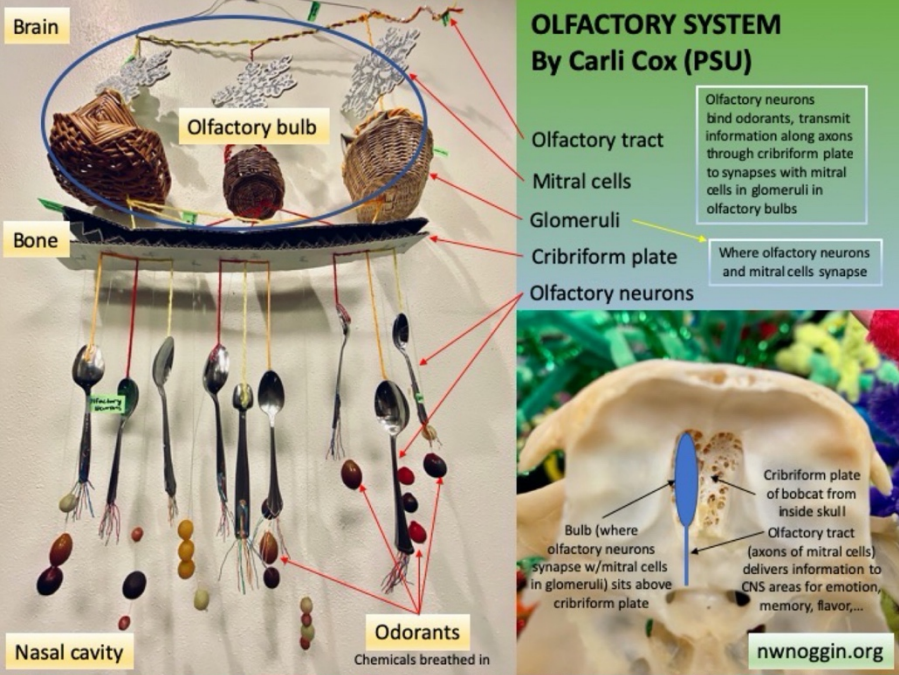


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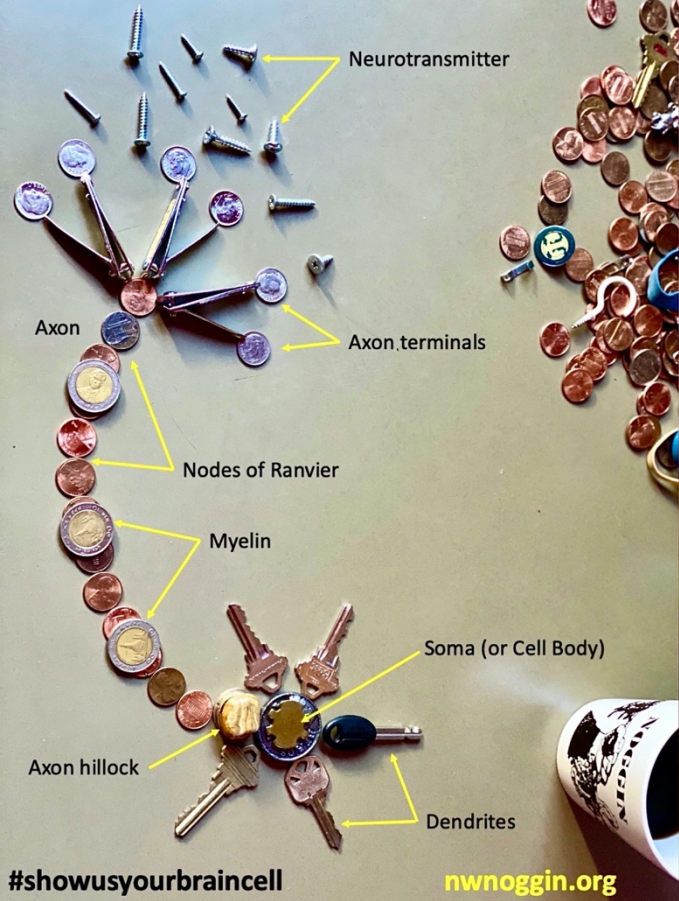
Neuron from the coat rack



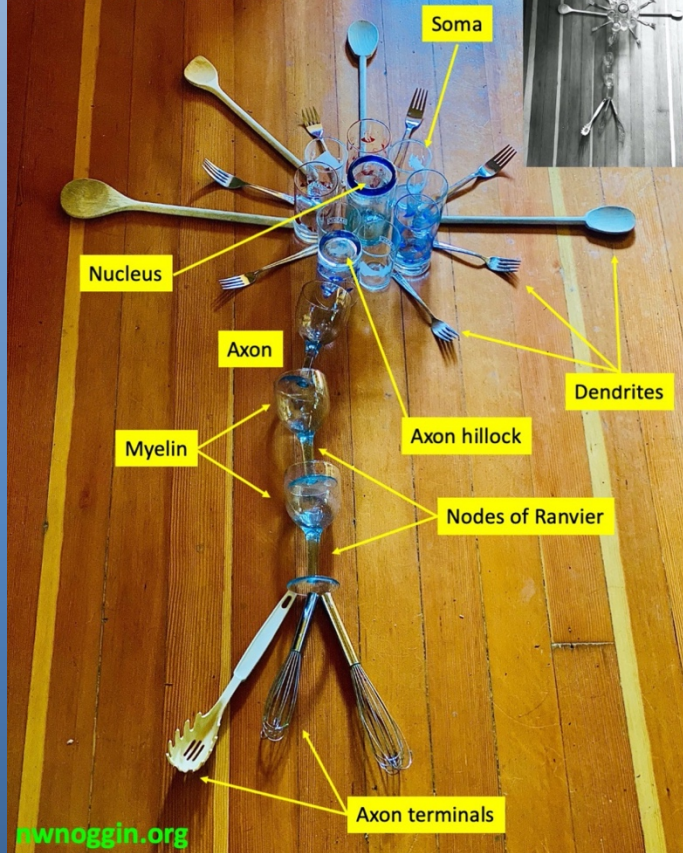
#showusyourbraincell



#showusyourbraincell



#showusyourbraincell

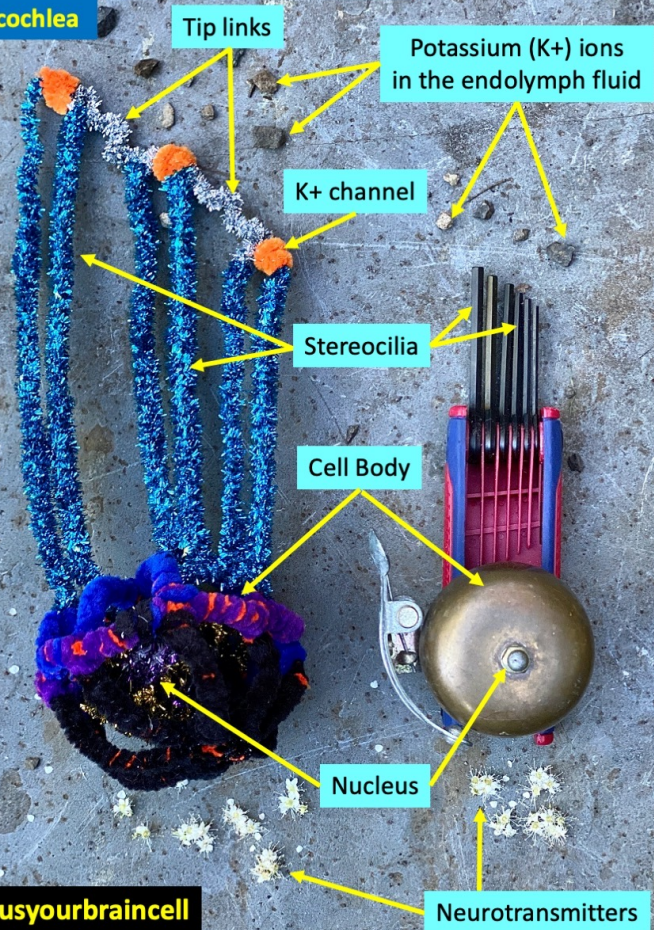


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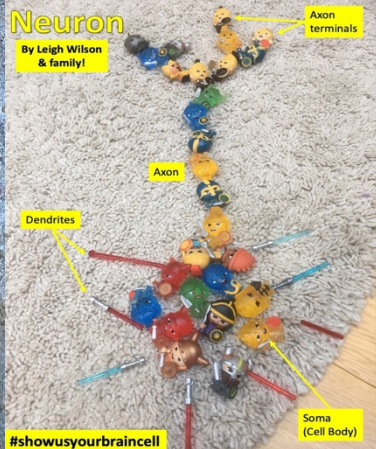
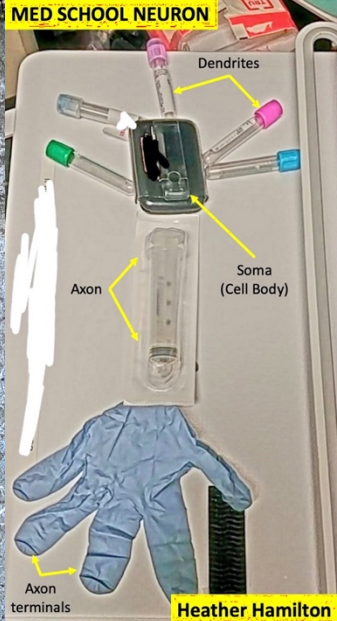
Inner hair cells

In the cochlea

In your inner ear, they let you hear



#showusyourbraincell
nwnoggin.org

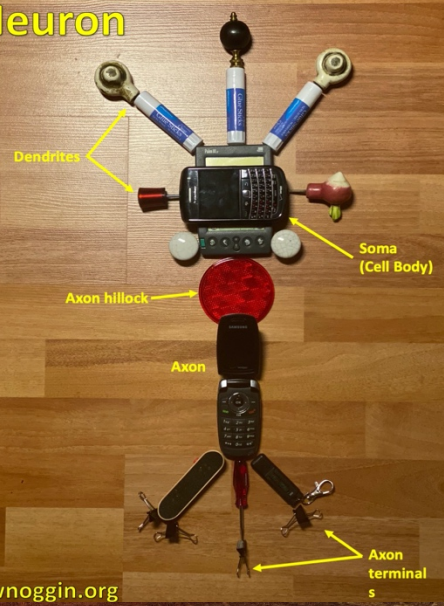


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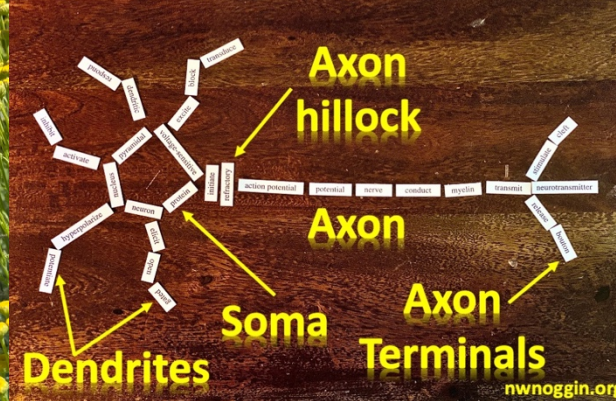


Neuron

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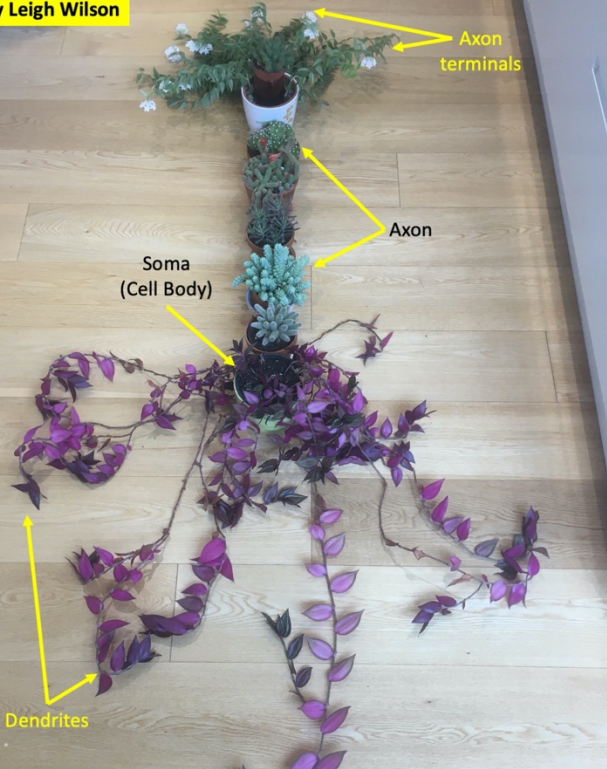


NEURON



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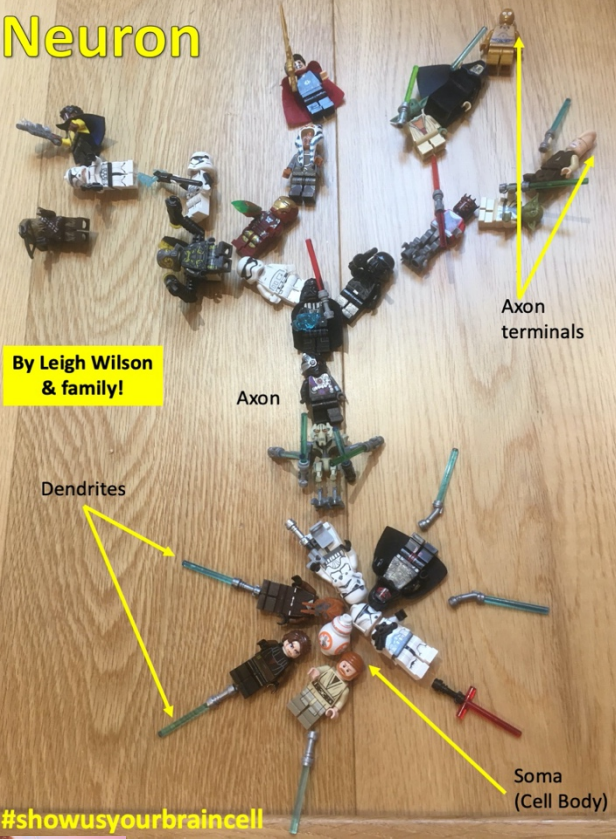
By Leigh Wilson



Neuron

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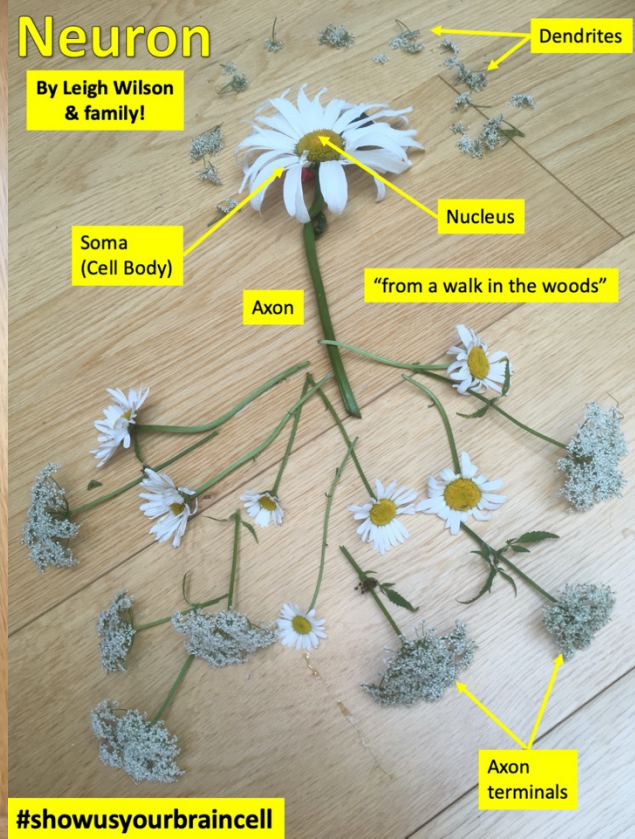
Neuron



By Leigh Wilson & family!

#showusyourbraincell

Neuron



By Leigh Wilson & family!

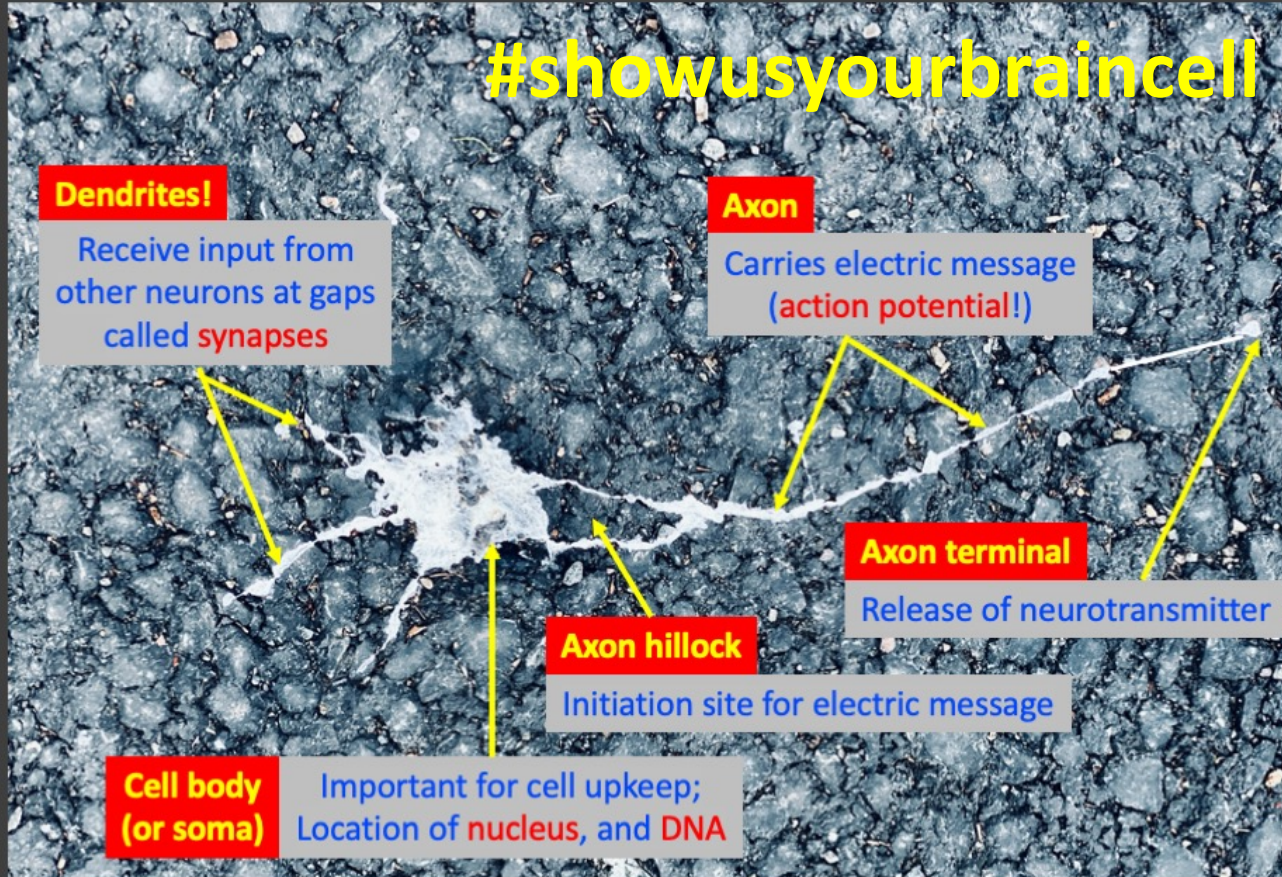
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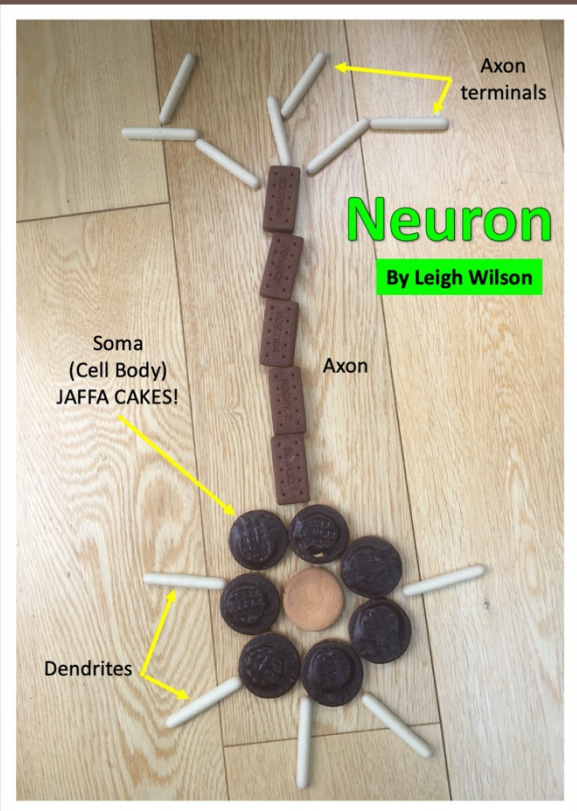
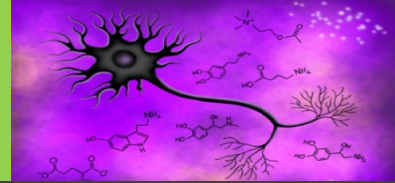
#showusyourbraincell

You can find neurons everywhere!

#showusyourbraincell

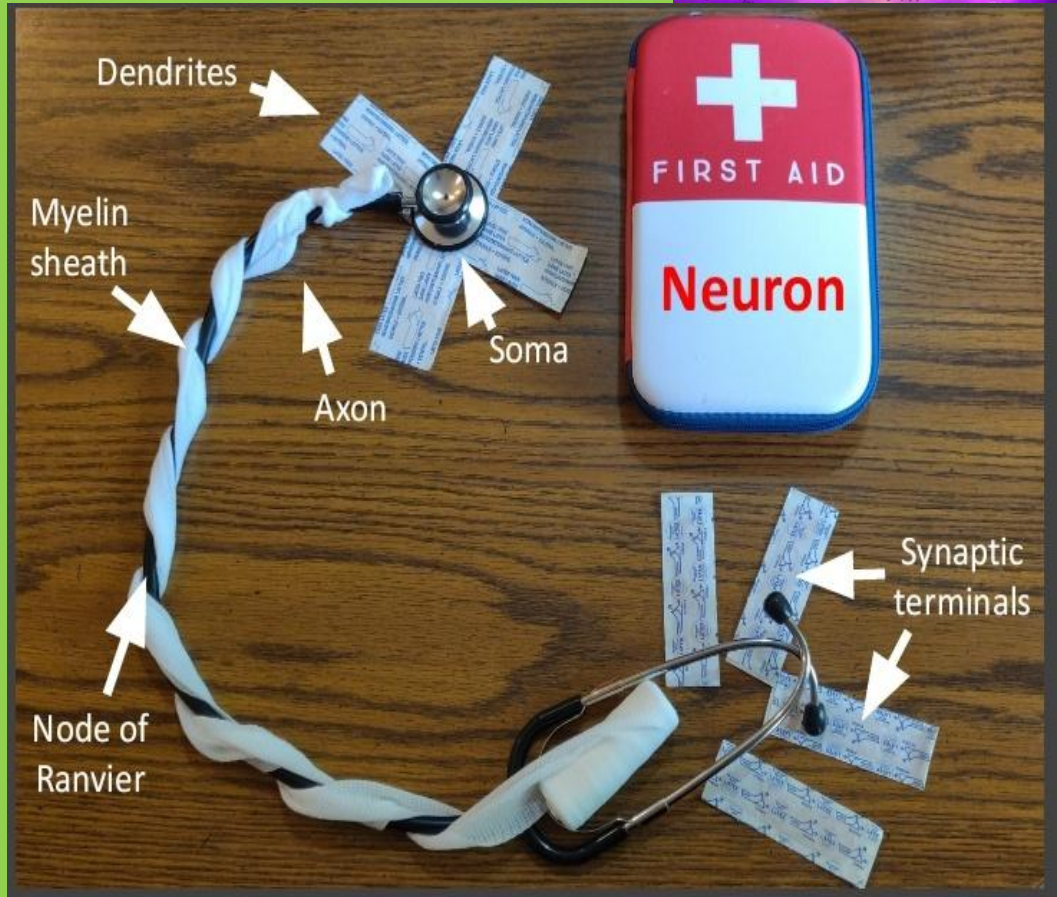


Make your own – AND SHARE!



#showusyourbraincell

#showusyourbraincell



Q&A with Speakers



Bill Griesar, PhD
Senior Instructor
at Portland State
University



Jeff Leake
Psychology Professor
at Portland State
University



**Richard Wingate,
DPhil**
Head of Anatomy
at King's College
London

Thank You

Please take the survey after the webinar ends.

*Explore the Brain and Mind
on <http://www.brainfacts.org>.*

BrainFacts.org

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