

NWNOGGIN



nwnoggin.org

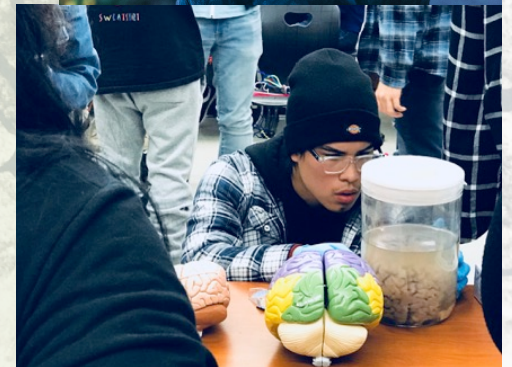
Arts integrated neuroscience
outreach for K-12 & community



APA/APF/OSU Workshop

“Waterdance,”
by Miles Pepper
(with brain cell)

- Bill Griesar, Ph.D.
 - Senior Instructor, Psychology, Portland State University
 - Affiliate Graduate Faculty, Behavioral Neuroscience, OHSU
 - Co-Founder/Neuroscience Coordinator, nwnoggin.org
- Kanani Miyamoto, M.F.A.
 - Teaching artist, Regional Arts & Culture Council
 - Teaching artist, Right Brain Initiative
 - Adjunct Instructor, Portland Community College
 - Adjunct Instructor, Pacific University
 - Resource Council/Arts Integration, nwnoggin.org



Sleep
Anxiety
Depression
ADHD
Autism
Development
Perception
Drugs
Memory
Language
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, mental health...
- **Homeless youth (p:ear), incarcerated youth (MaClaren Correctional Facility)**
 - “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**
 - 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, Velo Cult, 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...



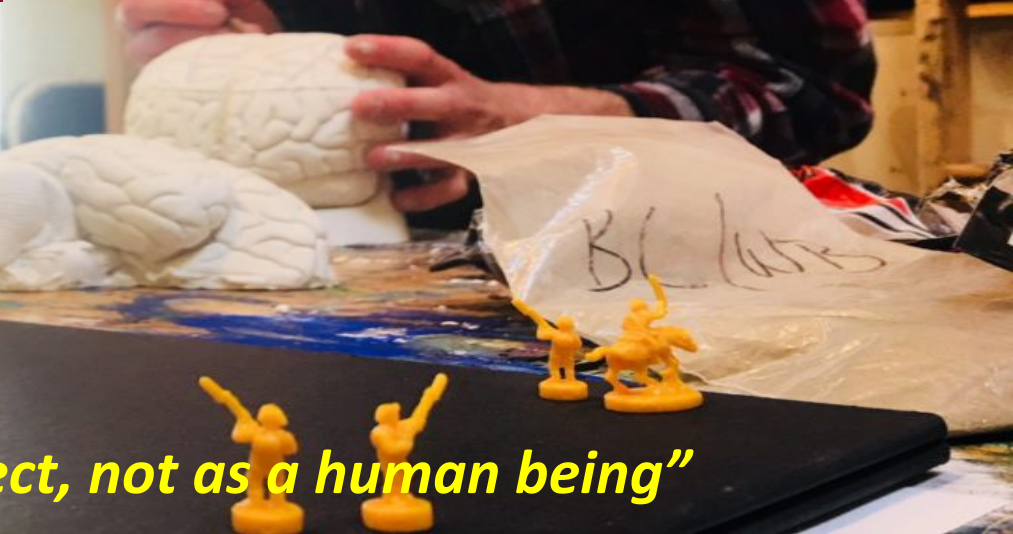
Kukátón Performance

For example...

Dancing, mistakes, movement
...and Parkinson's!



Kúkátónón Dance Troupe @ Velo

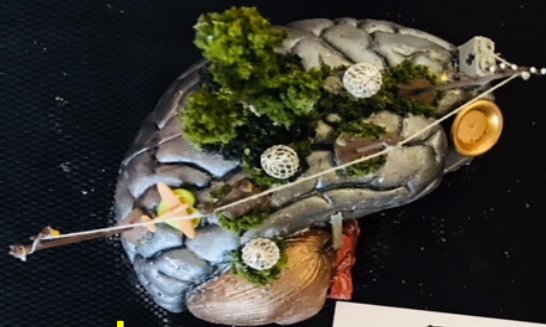


Noggin @ p:ear

"It's like people see me as an object, not as a human being"



**Researchers
Clinicians
Policy makers
Houseless youth**



Bunny:
"we are all
connected"

HOMELESSNESS & THE BRAIN

Thurs, Oct 19th
10am - 1pm



pear mentor gallery
338 NW 6th Ave

nwnoggin.org pearmentor.org

STREET KIDS
ART
NEURO-
SCIENCE



At SfN 2017 in DC



Posters, art of neuroscience *and...*

School visits



Turner Elementary, DC



And during SfN 2018...
San Diego Unified Public Schools!

And also...Capitol Hill

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



Research should inform policy

Rural Outreach

LEAVE TOWN!

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



Food, housing, baby goats...





Noggin in Heppner, OR

Synapses, Stories & Song

Confederated Tribes of the Grande Ronde, Siletz



Synapses, Stories & Song



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 Keefer on January 24, 2019



Neuroscience & the Law



MacLaren Youth Correctional Facility

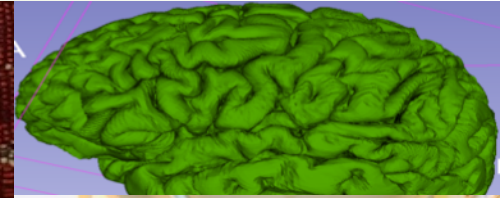
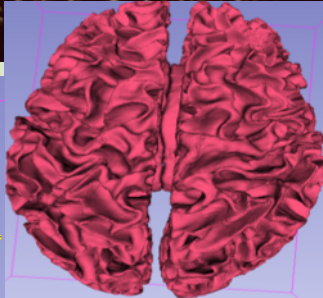
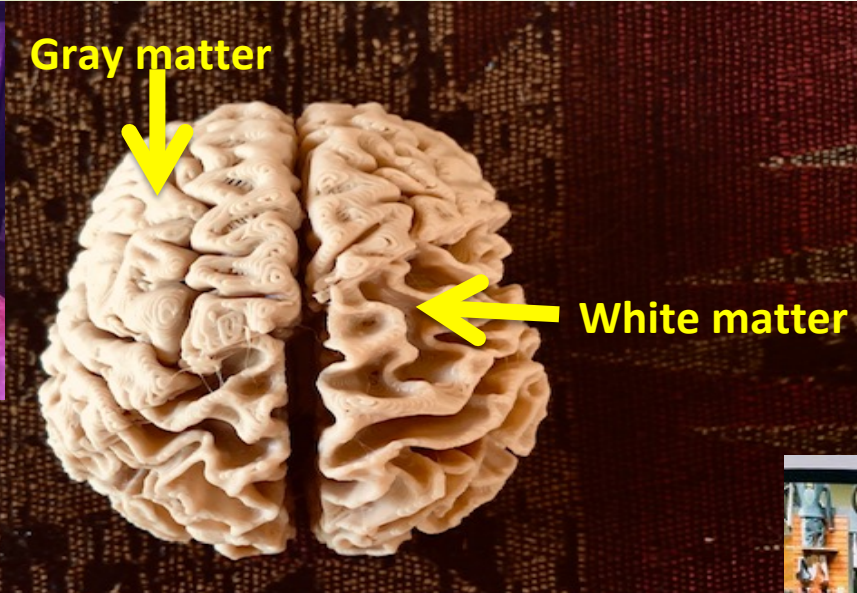
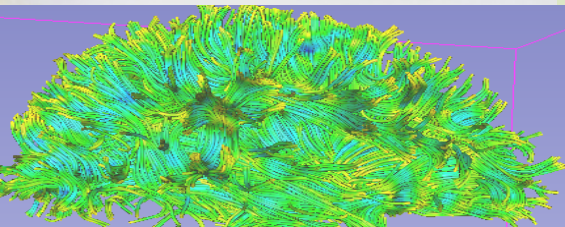
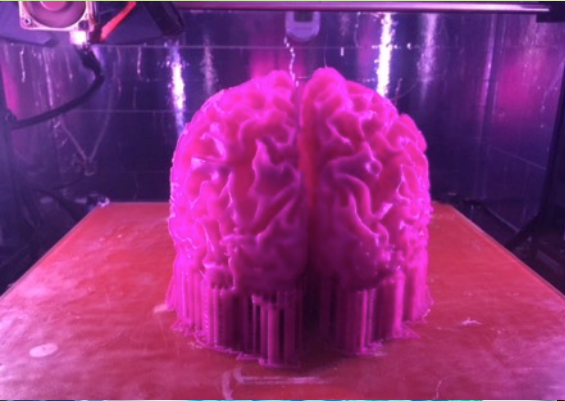
Arch Rock Brewing, Gold Beach, OR



Alcohol and the brain

Art + Neuroscience = 3D printed brains

Collaboration with Make + Think + Code @ PNCA, Intel, PDX 3D Printing Lab!



NOGGIN FEST

A CELEBRATION OF SCIENCE, ART, AND MUSIC

FRI OCT 19

6pm-11pm

SAT OCT 20

12pm-12am

B***S OF THE SUN
SHANNON ENTROPY
DISENCHANTER
MOUTHBREATH
STARGASM**



Connect. *And copy!*

REACH OUT. PARTNER. GO PLACES.

There are resources in ALL our communities...

- Public schools, hospitals, art museums, homeless shelters, youth correctional facilities, pubs, retirement homes,...
- *And don't wait for institutions, especially if they focus more on preserving administrative structures instead of fulfilling their mission...*



Making a pipe cleaner neuron...

1. Start with a good amount of (colorful) pipe cleaners, I have 20 here.



2. Create the soma or cell body by linking several pipe cleaner hoops together.



3. Attach dendrites to your soma by wrapping them around the soma pipe cleaners.



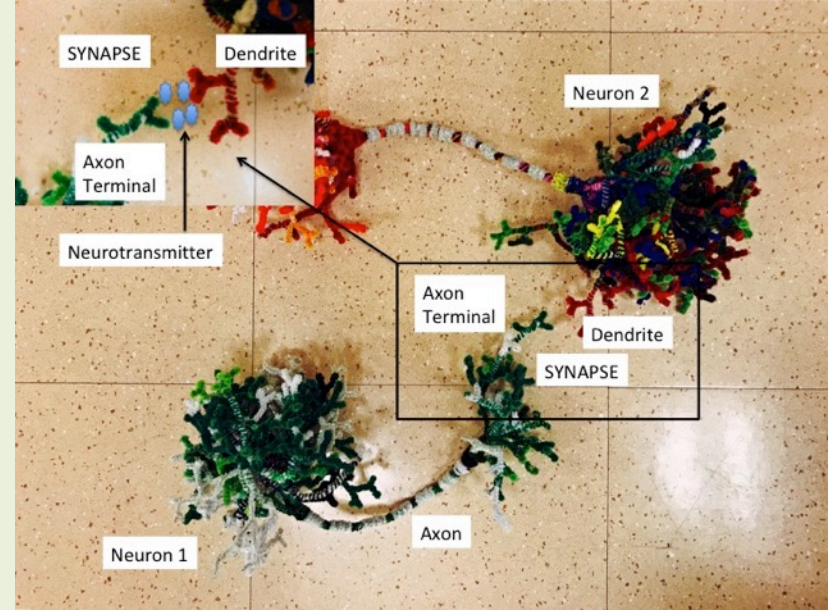
4. Attach axon terminals to the other end of your axon.



5. Wrap myelin around your axon.



6. Create a nucleus for your soma by wrapping two pipe cleaners around each other. Attach your nucleus inside your soma. You have a neuron!

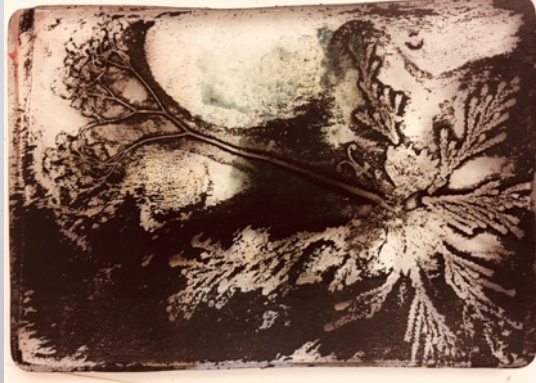
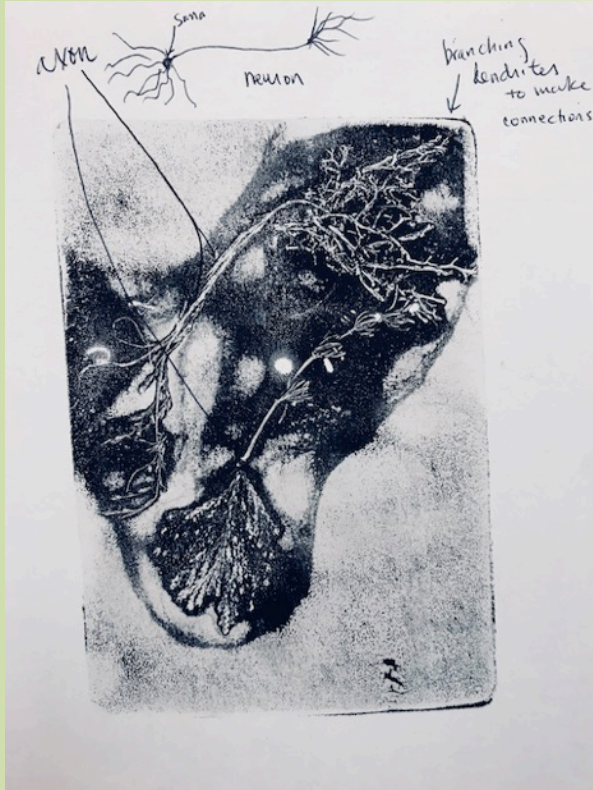


MAKE CONNECTIONS

MAKE ART



Neuron gel prints



NEURON GELATIN PRINTS



Objective

Students will learn about the form and function of neurons through a simple printmaking process.

Introduction

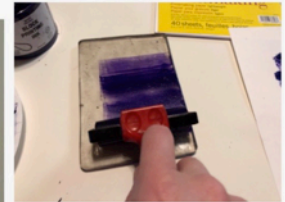
Prior to the project discuss what a neuron is and its basic functional parts followed by a discussion of why plants and neurons might have similar forms. Take a look at the many different forms of neurons.

Materials

- Gelatin slabs, or Gelli plates
- Block printing ink (water soluble is best)
- Printing paper (printmaking paper works best but drawing paper will do as well) Plant material (smaller plants work best)
- Ink roller (Brayer) Barren

Making a neuron gelatin print

1. Take your gelatin slab or Gelli plate and roll ink on to it (you want a thin even layer of ink, too much ink will not work as well).
2. Place plants on the plate in a neuron like pattern (thinner and smaller plants work better)



3. Place your paper face down on top of the plate, apply pressure with your barren or press with your hands if don't have one (apply a good deal of
5. Carefully remove the plants from the plate, you'll notice that impressions of them have been pressed in to the ink.

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