What can neuroscience do for communities?

Marlen Zoraida Maria Gonzalez Caraballo, PhD
Department of Psychology, Assistant Professor
Community Neuroscience Initiative, Director
Goals

• Reframe what neuroscience is
• Introduce a community neuroscience approach
• Talk about CNI’s work
• Elicit conversation
What do you think about when you think about “neuroscience?”
Trauma at the Border: Can Neuroscience Inform Legal Advocacy?
Inequality in neuroscience

• Who is making these decisions and with what information?
• To what extent is the research reflecting people’s actual lived experiences?
• May essentialize structural issues as biological
• Information on inequalities from research team to research participants
Inequality in neuroscience

Goldfarb & Brown 2022
Inequality in neuroscience

Bertolero et al., 2020

Inequality in neuroscience

- Deficit focused/stigmatizing

<table>
<thead>
<tr>
<th>Example</th>
<th>White-Centered Approach</th>
<th>Black Feminist Approach</th>
</tr>
</thead>
</table>
| Overall conceptualization of Black women's unique experiences of stress | - Deficit-based, decontextualized, biological framing rooted in White supremacy, patriarchy, heterosexism  
- Collapsing stress exposure over diverse groups to consider the average stress exposure | - Strengths-based and intersectional approach that considers race, gender, class, sexual orientation, history and systems of power/ oppression  
- Consideration of intersecting, marginalized identities and context of stress exposure  |
“As you enter positions of trust and power, dream a little before you think.”

—Toni Morisson
Solution? Community Neuroscience

An approach to how we generate and communicate our science

Ecological

Contextual

Democratized
The Community Neuroscience Initiative

MISSION: To democratize neuroscience

• Make it accessible
• Make it translational
• Make it inclusive

A democratized neuroscience is one that speaks to people with minimal jargon, applies to their lived experiences, and destigmatizes mental illness and neurodiversity.
Who is CNI?

Associate Prof. Eve DeRosa
Prof. Adam K. Anderson
Graduate Fellow Senegal A. Mabry
Who is CNI?

Research Coordinator Geneva M. Hidalgo Nazario

CNI Volunteers
Where is CNI?

• Syracuse NY
  • 30% Black American
  • 10% Latine any race
  • 40% of students live in poverty
  • #1 for childhood poverty
How is CNI...democratizing neuroscience?

• Neuroeducation
• Neuroconsulting
• Neurocommunity
How is CNI...democratizing neuroscience?

- Neuroeducation
- Neuroconsulting
- Neurocommunity
Neuroeducation: CNI Accessible Neuroscience Lectures

Gina Poe: Sleep
Andre Fenton: Distraction and memory
Kelli Duncan: Neuroplasticity
Kevin Jones: Perception & neurodiversity
Dominique Pritchett: Motor coordination and learning
Neuroeducation: Curriculum for students

- My Brother’s Keeper Teaching Opportunity Corps II
  - Targets equity and diversity in teaching
  - 7 Educators
- STEAM Curriculum using neuroscience to understand perception, self-regulation, emotions
Brain Days Beta (2018 -2019)

• **Who:** PRYDE Scholars and Syracuse High School students
  • Selected on interest and commitment not “merit”

• **Where:** K-4 Charter school (57% Black; 15% Latine)
Neuroeducation: Get to Know your Brain Days

• Train the trainer model
  • 5 teachers
  • 100 2\textsuperscript{nd} to 5\textsuperscript{th} graders
• STEAM at Dr. King Elementary
• Seymour Dual Language Academy
  • Brain Days delivered in Bilingual English/ Spanish
How are we doing?

- Can TOC-II scholars teach neuroscience effectively?  **YES**
  - Students enjoy lessons and show that they retain the material
  - Scholars have built confidence over time
Can educators teach neuroscience? **YES**

### Lesson 1

| Liking: | 86.5% said they really liked it |
| Learning: | 76.5% said they learned a lot |
| Learning self-efficacy: | 78% High  
11.5% middle  
1.9% Low |
| Demonstrated learning: | 80% Total  
38.5% most  
42.3% All |

### Lesson 2

| Liking: | 73% |
| Learning: | 67.6% |
| Learning self-efficacy: | 75% High  
16.7 middle  
8.3% Low |
| Demonstrated learning: | 89.2% Total  
29.7% Most  
59.5% All |

### Lesson 3

| Liking: | 73% |
| Learning: | 81% |
| Learning self-efficacy: | 75.6% High  
22% middle  
2.4% Low |
| Demonstrated learning: | 95.2% Total  
38.5% Most  
71.4% All |
Neurocommunity: 
Brain Hub

Reclaim ourselves our time and space (ROOTS)

• Mindfulness Based Stress Reduction

• Purpose
Neurocommunity: Brain Hub

• Reduce stress to cultivate purpose
• Create safe space to talk about stress

“I knew I needed this. This gave me permission to take time for myself and focus on what I think, not what others think.”
Coming up 2023-2024!

PLASTICITY: HOW EXPERIENCE SHAPES TRAITS AND GENERATIONS

Get to Know Your Brain!

PCCW
President's Council of Cornell Women

Cortland
SUNY

IMPROVING OUTCOMES FOR BOYS AND YOUNG MEN OF COLOR

New York State Board of Regents
State Education Department
So, what can neuroscience do for you and your communities?

And what can we do, together, for a more equitable and representative neuroscience?
“As you enter positions of trust and power, dream a little before you think.”

–Toni Morisson