“It’s not that I’m so smart. It’s that I stay with problems longer”.

- Albert Einstein

*(but why?  Why did he persist and reflect?  What drove him to do this?)*

“The gardener does not make the plant grow.
The job of the gardener is to create optimal conditions.”

- Education and Creativity Expert Sir Ken Robinson

*(learning ‘how we learn’ creates more optimal conditions than only focusing on ‘what we learn’)*

“Experience builds brain architecture."

-Harvard University

*(We can build our brains with intention and effort)*

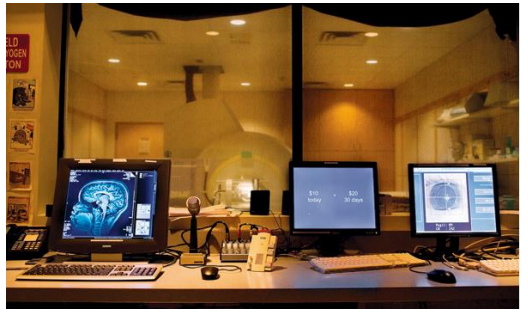
NEW YORK UNIVERSITY
CHILD STUDY CENTER
ABOUTOURKIDS.ORG

PHELPS LAB
OF NEW YORK UNIVERSITY
NEUROSCIENCE OF AFFECT, LEARNING & DECISIONS

LEAPNOW Transforming Education

EINSTEIN
Albert Einstein College of Medicine
OF YESHIVA UNIVERSITY

Children's Evaluation & Rehabilitation Center



Nevada Institute For Children's Research & Policy
NICRP

ProWorld


kids worldwide

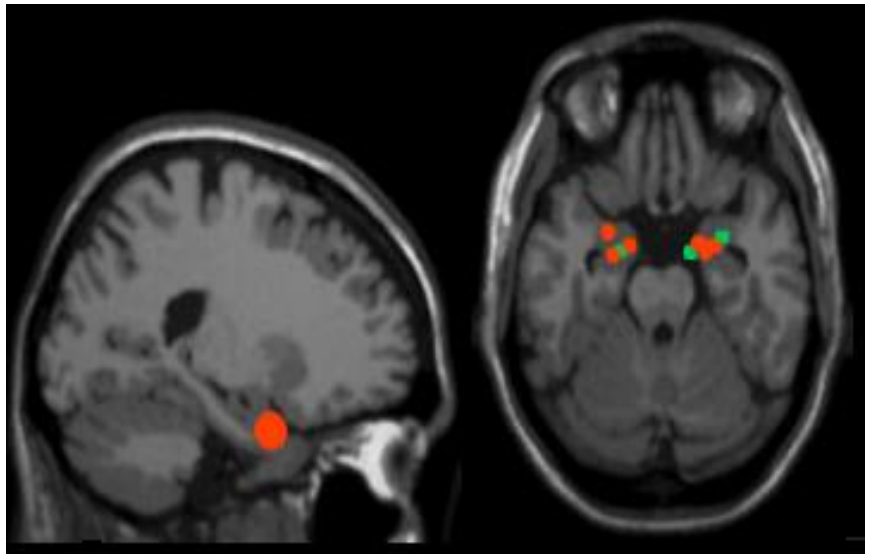
National Defence and the Canadian Armed Forces

Foreign Affairs, Trade and Development Canada

Government of Canada / Gouvernement du Canada

NYUSteinhardt
Steinhardt School of Culture, Education, and Human Development
Center for Research on Culture, Development and Education

## How genius remains hidden



Mindsets that are:

**Fixed** "I can't do this"

**Fearful** "I'm afraid to try"

**Fragmented** "I stick to what I'm familiar with"

## How genius is unveiled

Mindsets that reflect a sense of:

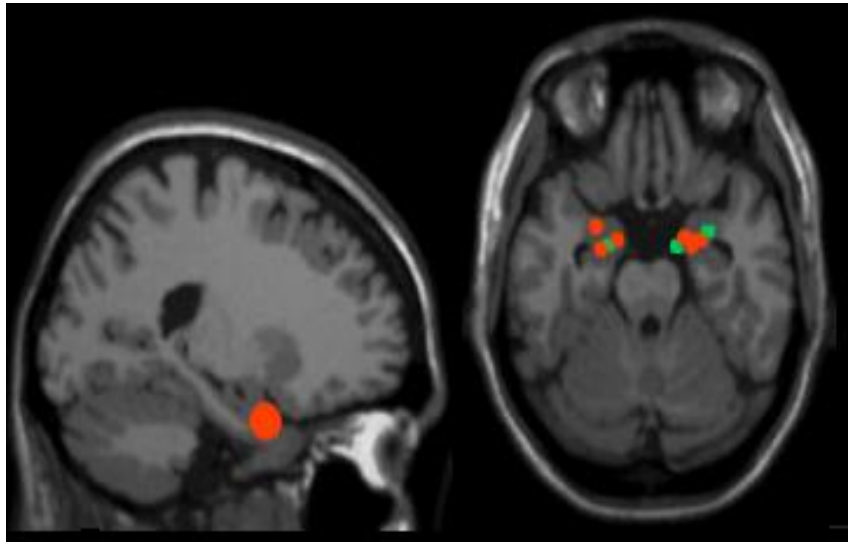
**Agency** "I can do this"

**Purpose** "I know why"

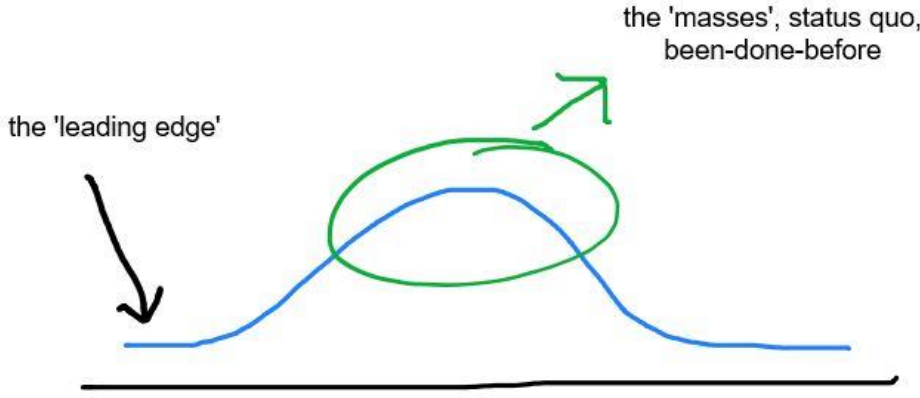
**Interconnection** "I create connections where there were none before

Fear can block decision-making abilities; Desire for mastery and connection recruit more of the 'higher-order' areas of the brain

# Fearful, fixed mindsets stifle empowered decision-making, innovation and passion for learning



School, media, social groups (including family) often do not promote 'empowered decision-making', and lead to 'fear and shame-based' neural pathways around mistakes and failure



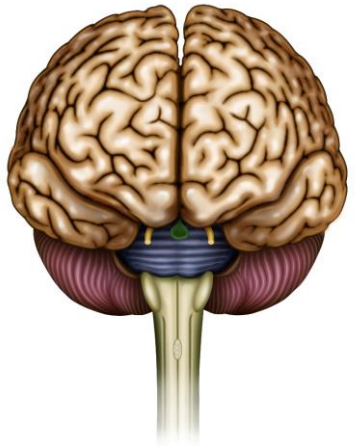

**(Sparks of new neural pathways)** **(Already-created-pathways)**

**Fear is not a bad thing! It is a sign we are moving into new territory**

Fear + Lack of belief in adequacy (lack of agency) = Paralysis

Fear + Agency = Perseverance

Fear + Agency + Purpose = Perseverance AND Passion



**Emotion awareness**
**Empathy**
**Seeing the 'bigger picture'**
**Perspective-taking**
**Understanding others' emotions**
**Longer dendrites**

# So how do we promote mindsets that lead to wise, empowered decisions?

## AGENCY

belief in my 'adequacy' to deal with challenges, to find solutions to problems, to get through discomfort and struggle

How to help build 'pathways of agency':

UNDERSTAND NEUROPLASTICITY
CELEBRATE MISTAKES
PRAISE SELF-PROGRESS

## PURPOSE & INTERCONNECTION

'self-transcendent' purpose: a belief that my existence matters, and that what I am learning will help me contribute my gifts and value to the world. Interconnection 'diversifies' brain activity outside of usual networks.

How to help spark a sense of purpose and interconnection:

FOR WHO and WHY?

# How do we spark agency, purpose and interconnectedness?

## #1: UNDERSTAND NEUROPLASTICITY

Experience builds brain architecture" (Harvard). "Survival of the busiest". Self-directed neuroplasticity.

## # 2: CELEBRATE ~~MISTAKES~~ MIND EXPANSION

"Increased struggle leads to greater learning and increased structural change in the brain." – Dr. Lara Boyd


## # 3: NOTICE ~~OTHERS'~~ SELF-PROGRESS

Make incremental, microscopic progress, process, strategies, focus, effort, perseverance
the "stars of the show" rather than the results or comparison with others

## # 4: HIGHLIGHT SELF-~~CENTERED~~ TRANSCENDENT PURPOSE & INTERCONNECTION

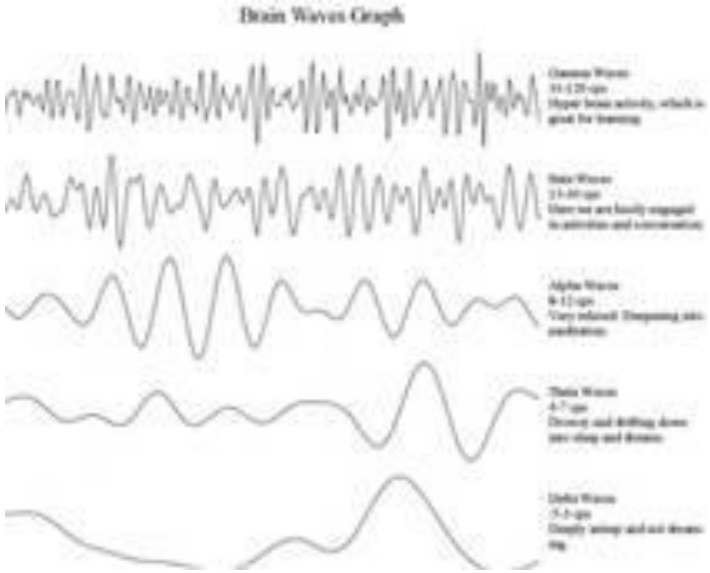
It's a goal that is motivated both by an opportunity to benefit the self and by the potential to have some effect on or connection to the world beyond the self
(Yeager & Bundick, 2009; Yeager et al., 2012; see Burrow & Hill, 2011; Damon et al., 2003).

e.g., "helping people" rather than on content of a goal (e.g., "being an engineer"); (Massey, Gebhardt, & Garnefski, 2008).
For example, a purpose for learning might be that a person would like to use the acquired knowledge to build bridges that help people (a self-transcendent component)

A study of over two thousand students conducted by Angela Duckworth and colleagues showed that those with a self-transcendent purpose:

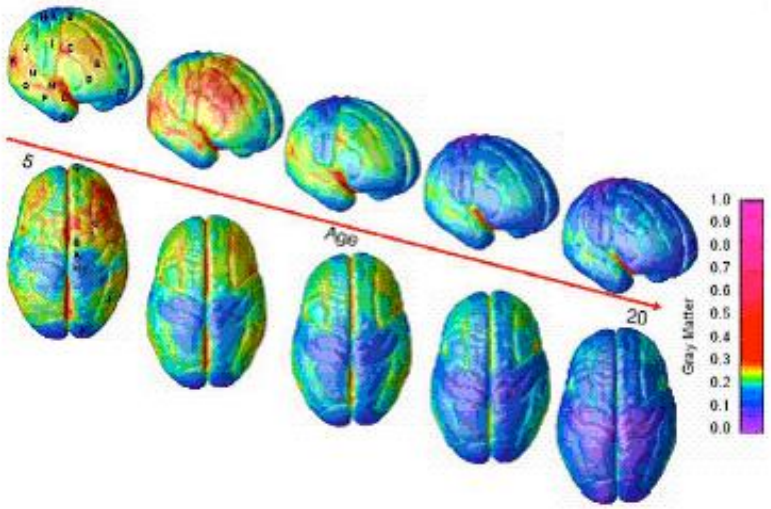
- persisted longer on a boring task rather than giving in to a tempting alternative
- increase deeper learning behavior on tedious test review materials and sustain self-regulation over the course of an ***increasingly*** boring task.

*more self-oriented motives for learning—such as the desire to have an interesting or enjoyable career— did not, on their own, consistently produce these benefits.


Expanding out of 'self-oriented' neural networks sparks activity in areas that are not as often used because we are generally seeing through the eyes of self. Connecting "far-flung" networks is where deep learning and innovation happen.

# Modeling is more important than explaining




**Adults have more access to areas of brain involved in self-regulating, 're-framing', etc. Children learn more from modeling than from instruction.**

**Your reaction to failure and mistakes leads to biofeedback that your child will mirror.**

**Executive function and self-regulation** skills enable us to plan, focus attention, remember instructions, and juggle multiple tasks successfully. The brain needs this skill set to filter distractions, prioritize tasks, set and achieve goals, and control impulses.

**Children aren't born with these skills—they are born with the potential to develop them.** If children do not get what they need from their relationships with adults and the conditions in their environments—or (worse) if those influences are sources of toxic stress—their skill development can be seriously delayed or impaired. Adverse environments resulting from neglect, abuse, and/or violence may expose children to toxic stress, which disrupts brain architecture and impairs the development of executive function. - Harvard Center for the Developing Child

# C.A.R.I.N.G.

Connection: YOUR presence will help your child stay focused – this builds up neural networks "Mental Muscle" in brain regions devoted to attention and focus. PRIDE skills (Parallel Play, Repeating, Imitating, Describing, Explaining). “Connection before direction.”

Agency: “When children have to do more on their own, they have to do more of the thinking, planning, organizing, deciding, coping, trial and error, dreaming of life for themselves.” – Julie Lythcott Haines. Growth mindset – everything is ‘figure-outable” – they build up a track record of surviving failure and getting back up.

RItuals of Intentional Attention: Create time for ‘non-reactive’ brain activity.

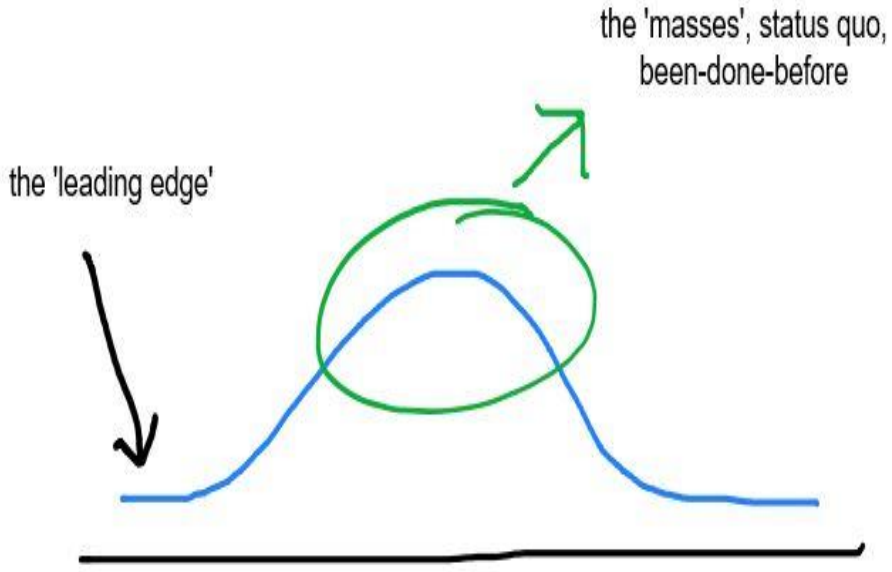
Noticing the Good & the Growth: "pounce on progress" (praise effort, sticking with it, trying new strategies, reflecting on mistakes, microscopic moments of improvement)

# Neuroscience for Empowered Innovation

*Looking for parents and educators who want to innovate and empower!*

**MAY 6-7: Neuroscience Weekend Intensive**

**Go to Expandingmindsets.com - Click on TRAINING**



# Resources

**Books**

- The Dip, Linchpin – Seth Godin
- The Brain and Emotional Intelligence: New Insights – Daniel Goleman
- Train your mind, change your brain – Sharon Begley
- Creating Innovators – Tony Wagner
- Mindset – Carol Dweck

**Websites**

- Mindsetscholarsnetwork.org/ (Harvard)
- Perts.net/resources (Stanford)
- Youcubed.org/ (Stanford)
- ww2.kqed.org/mindshift
- Mindsetkit.org (Stanford)

**Apps:** Calm.com Headspace