CENTER *for* NEUROTECHNOLOGY

a National Science Foundation Engineering Research Center

June 21, 2022

Scientific Communications

Announcements

- **UW ENDURE Students: Meet Dr. Horacio de la Iglesia after class today.**
- **CNT REU Students: REQUIRED Seminar (Industry): Thursday, June 23, 9:00-10:30 am**

Summer Communication Course

http://faculty.washington.edu/chudler/cc2022.html

Tuesdays, 9:00-10:30 am; CSE2, Room 382

Eric H. Chudler, Ph.D.

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Research Associate Professor, UW Bioengineering
Research Associate Professor, UW Anesthesiology

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Course Logistics

Meeting Times and Location:
9:00 – 10:30 am, Tuesdays; http://faculty.washington.edu/chudler/cc2022.html

Course Description:
The purpose of this course is to prepare you to communicate your research effectively in a variety of formats. The course is also designed to help you present your summer research at the end-of-summer symposium. Students in this class represent a diverse set of backgrounds and skill levels. This means that we all have something to learn and something to teach. If you bring this attitude, this course will be a productive use of your time.

Discussion (safe) and participation is critical!

Course Logistics

Course Schedule:

June 21	Logistics, why communicate, literature review and citations
June 28	Scientific Writing, reference managers
July 5	Slides and Public Speaking
July 12	Publication quality figures
July 19	Scientific posters
July 26	Slide presentations
August 2	Abstracts
August 9	Up-goer
August 16	Test PPT/Practice/Elevator pitch

Slides posted to web site!

Important Dates:

July 4 (Monday)	UW Holiday
August 4 (Thursday)	Poster rough drafts due
August 10 (Wednesday)	Final posters due (by noon)
August 15 (Monday)	Final slides due (by noon)
August 17 (Wednesday)	**Final Presentations (5 minute talks/Posters)**

Today

- Who are you?
- Who am I?
- What is the Center for Neurotechnology?
- Why scientific communications?
- How to research research?

Who Are You?

Name

Current School/Major

Why did you apply to the REU summer research program (CNT / CSE / ECE / CNC / ENDURE)?

What is the largest group of people you have spoken to?

and/or

What was the most stressful presentation you have ever made?

Who Am I?

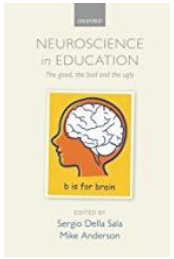
(5) UW
1991-1998, Res. Asst. Prof
1998-, Res. Assoc. Prof
Anesthesiology/Bioengineering

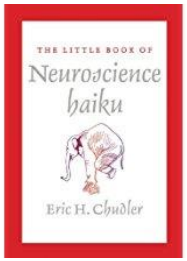
(4) MGH
1989-1991
Instructor
Neurosurgery

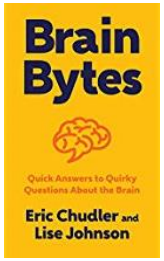
(2) UW
1980-1983, MS
1983-1985, PhD
Psychology

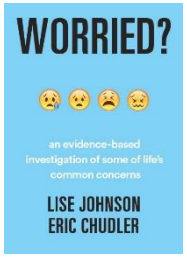
(1) UCLA
1976-1980, BS
Psychobiology

(3) NIH
1986-1989
Post-doc
Neurobiology/
Dental Inst.

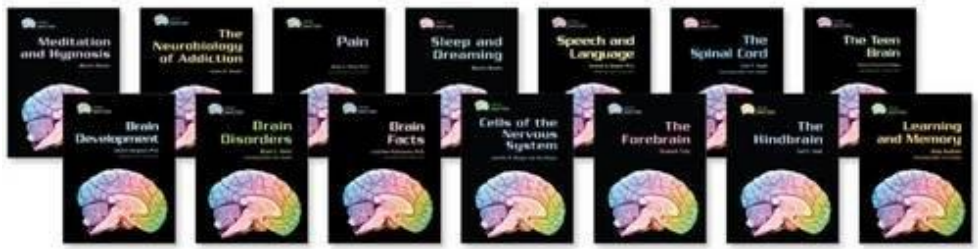


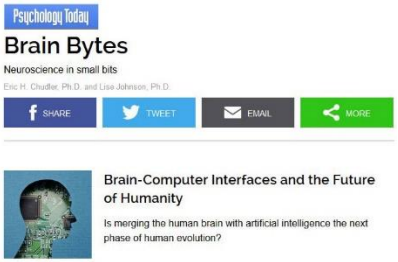


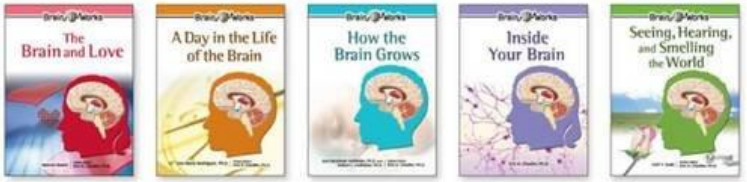




BrainWorks TV Show
http://www.washington.edu/video/brainworks/





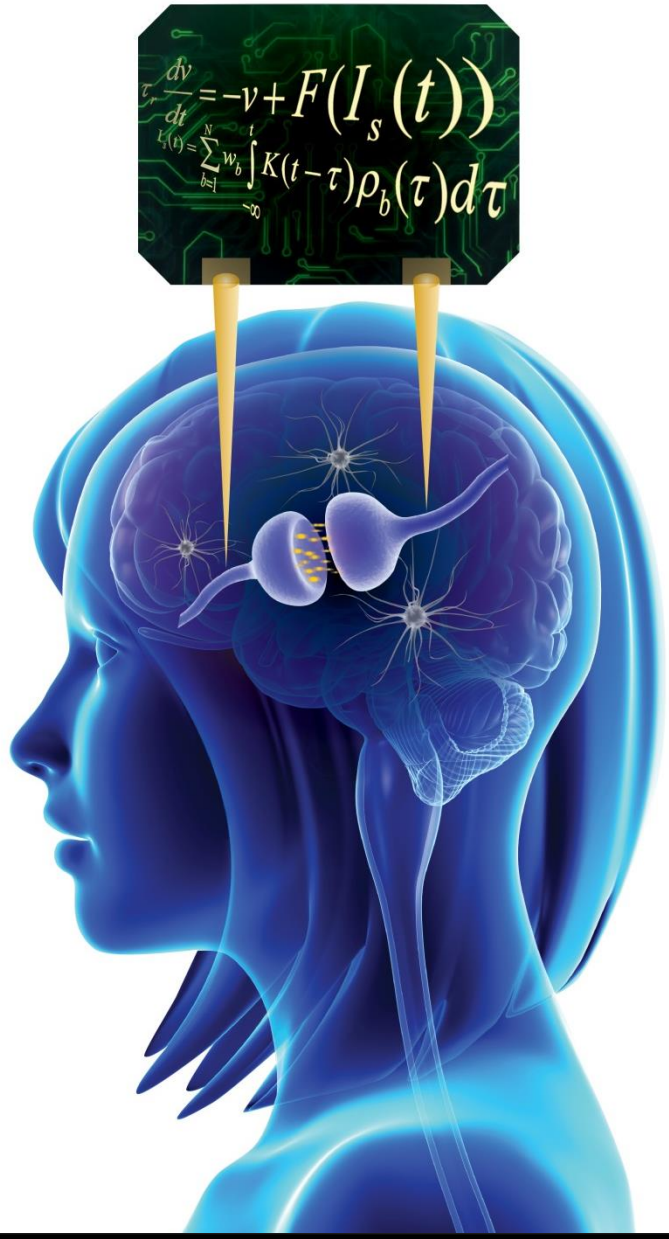


A Brief Introduction: CNT's Transformational Vision

Revolutionize the treatment of:

- **stroke**
- **spinal cord injury**
- **other neurological conditions**

by discovering the principles of *engineered neuroplasticity* to restore nervous system function



Why is this vision transformational?

- 5M/year worldwide survive a stroke but left with permanent disability
- 130K/year in US suffer stroke with hand/arm paralysis (WHO, 2018)
- 0.5M/year worldwide new spinal cord injuries (SCI) (WHO, 2018)
- >288K individuals in US with chronic SCI (NSCISC 2018)
- 7M people in US with essential tremor (Louis & Ottmann, Tremor Hyperkinet. Mov. 2014)

Current treatments are largely ineffective, focusing on accommodation & medication

CNT's transformative solution: Engineered Plasticity to promote long-term recovery of hand & arm function

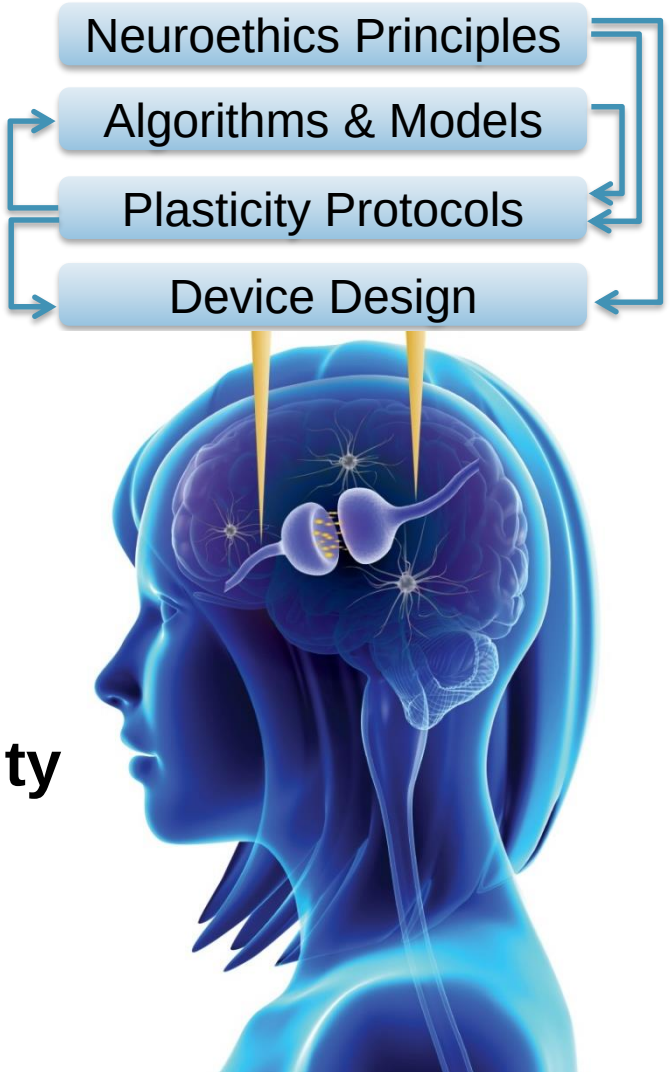
CNT Transformational Engineered System

Algorithms & Models:
Co-adaptive algorithms to interface with CNS

Plasticity Protocols: Parameters, & methods of closed-loop stimulation to induce plasticity

Device Design: Multifunctional electrodes & wireless devices to induce & quantify engineered plasticity

Neuroethics Principles: Ethics embedded in design



Back to Scientific Communications!

1. Why is it important to communicate research?

Because: 1) We should 2) We want to 3) We have to

2. Who are (or will be) your audiences?

Peers, editors, reviewers, mentors, public, employers, family

3. Where will you communicate your research?

"Elevator Pitch"

Conferences, classes, journals, grant applications, interviews

4. When will you present your research?

Research completed, in progress, this summer, after summer

5. How (methods/modes) will you communicate your research?

Papers, talks, posters, grant applications, blogs, articles