

Announcements

June 22, 2021

- Week 1 slides added to class website.
- “Getting Strong Letters of Recommendation” article added to class website (week 1).
- Next week: communications class on **Thursday, July 1.** Experiment with *Zotero* (<http://www.zotero.com>).



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MIT

Summer Communication Course

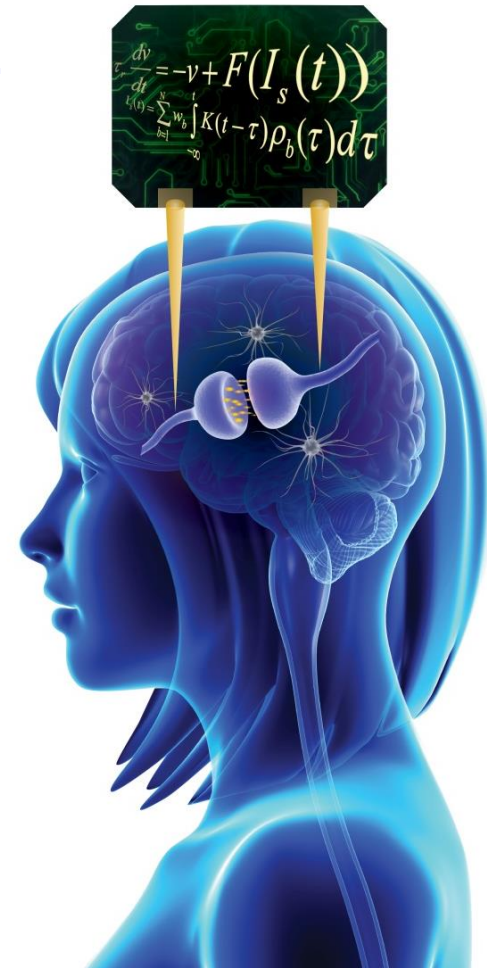
<http://faculty.washington.edu/chudler/cc2021.html>

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Course Logistics

Meeting Times and Location:

9:00 – 10:30 am, Tuesdays; <http://faculty.washington.edu/chudler/cc2021.html>

Zoom: <https://washington.zoom.us/j/95814081506?pwd=eUFpT25HRTRxbHVDQWdwMmcwemxwdz09>

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!



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Course Logistics

Course Schedule:

| | |
|----------------------------|--|
| June 15 | Orientation, logistics |
| June 22 | Literature review and citations |
| July 1 (<u>THURSDAY</u>) | Scientific Writing, reference managers |
| July 6 | Publication quality figures |
| July 13 | Scientific posters |
| July 20 | Slides and public speaking |
| July 27 | Slide presentations |
| August 3 | Abstracts |
| August 10 | Up-goer |
| August 17 | Test PPT/Practice/Elevator pitch |

Slides posted to web site!

Important Dates:

| | |
|------------------|---|
| August 9 | Poster/Slide rough drafts due |
| August 16 | Final slides/posters due (by noon) |

Final Presentations (~5 minute talks + ~2 min Q/A):

August 19/20 (Thu/Fri)



Who Am I?

(2) UW

1980-1983, MS
1983-1985, PhD
Psychology

(5) UW

1991-1998, Res. Asst. Prof
1998-, Res. Assoc. Prof
Anesthesiology/Bioengineering

(4) MGH

1989-1991
Instructor
Neurosurgery

(1) UCLA

1976-1980, BS
Psychobiology

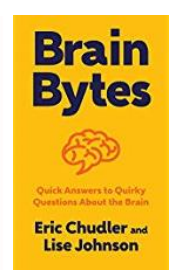
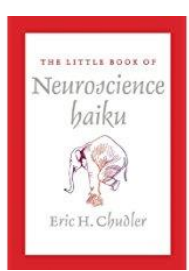
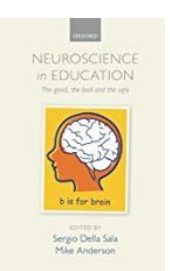
(3) NIH

1986-1989
Post-doc
Neurobiology/
Dental Inst.



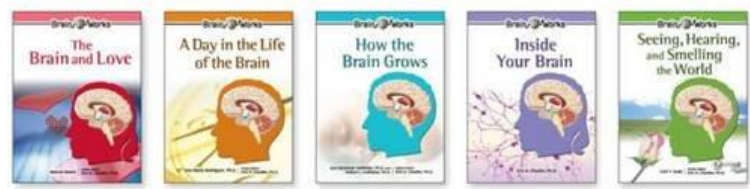
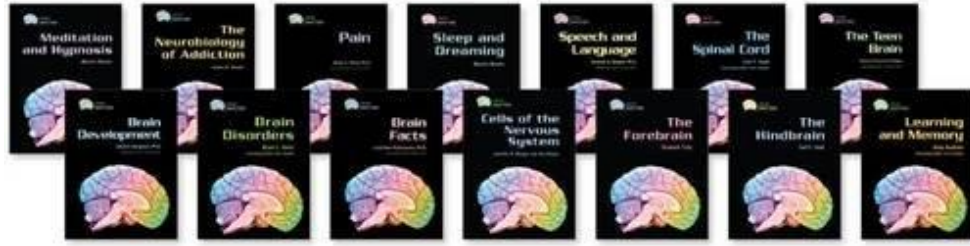
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BrainWorks TV Show

<http://www.washington.edu/video/brainworks/>



Psychology Today

Brain Bytes

Neuroscience in small bits

Eric H. Chudler, Ph.D. and Lisa Johnson, Ph.D.

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Brain-Computer Interfaces and the Future of Humanity

Is merging the human brain with artificial intelligence the next phase of human evolution?

Neuroscience For Kids

Home

What is a brain - The mystery of a brain - The parts of a brain - How the brain works - The brain

Neuroscience For Kids has been created for all students and teachers who would like to learn about the nervous system.

Thank you very much for the many great comments and letters. Use the comments, letters and games to help you learn about the nervous system. There are many more to come and we will be happy to hear from you.

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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



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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



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CNT Transformational Engineered System

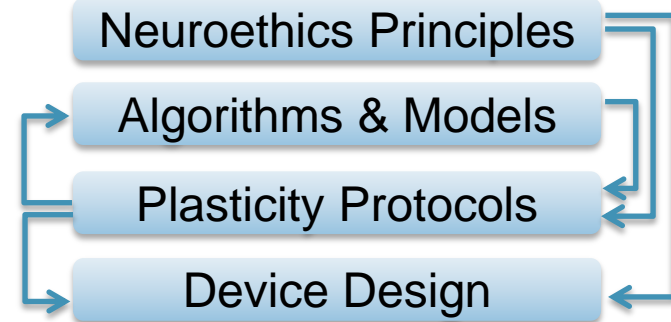
Algorithms & Models:

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!

Commentary

Why Public Dissemination of Science Matters: A Manifesto

David M. Eagleman

Department of Neuroscience, Baylor College of Medicine, Houston, Texas 77030

Abstract

Communicating science to the public takes time away from busy research careers. So why would you do it? I here offer six reasons. First, we owe that understanding to the people who fund our experiments, the taxpaying public. Second, we can leverage our skills as scientists to inspire critical thinking in public and political dialog. Third, researchers are optimally positioned to stem the flow of scientific misinformation in the media. Fourth, we can explain the ways and the means by which science can (and cannot) improve law and social policy. Fifth, it is incumbent upon us to explain what science is and is not while it is a way of thinking that upgrades our intuitions, it also comes with a deep understanding (and tolerance for) uncertainty. Finally, we find ourselves in the pleasurable position of being able to share the raw beauty of the world around us—and in the case of neuroscience, the world inside us. I suggest that scientists are optimally stationed to increase their presence in the public sphere: our training positions us to synthesize large bodies of data, weigh the evidence, and communicate with nuance, sincerity and exactitude.

Introduction

Moving science from the cloisters of academia into the mainstream of public dialog can carry costs. It requires the expenditure of time and effort that could be invested in the laboratory. In a competitive field, every moment counts for manuscripts and grants. And there are social risks as well: many scientists admit concern about criticism from colleagues for forays into the public sphere. So why do it?

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Here are six opportunities afforded by the public dissemination of science:

1. Thank your funders

Taxpayers around the nation labor away so that we can have the luxury of exploring our questions with passion. The investment in science tends to pay good returns for governments (Eagleman, 2013), but we must constantly remind the voting public why and how. We cannot reasonably ask funders to continuously contribute to a field that is taciturn or un-interpretable. While it is true that sites like PubMed Central make federally funded scientific publications available to the public, let's not fool ourselves into thinking that mere availability of first source material will automatically translate into digestion, synthesis, and understanding by the interested taxpayer. Would you invest billions in an industry that doesn't share its accomplishments, landmarks, open questions, and goals?

2. Inspire critical thinking

Police hire handwriting experts to tell them that a loopy letter can indicate who is a sex offender and who is not; the FBI and CIA hire mentalists to remotely see the contents of enemy bunkers; local detectives hire psychics to divine the whereabouts of stolen goods and lost children. Beyond the pity of flushing tax money on charlatany, the fact that clairvoyants are commissioned by those with power and uniforms boosts their credibility.

For reasons of utility, expense, and expectations, it would be better if knowledge about the scientific method saturated deeply into the squares and capitols of our nations. The goal would be to inspire critical thinking. The end result would be to embarrass away non-evidence-based approaches. Debunking fuzzy thinking is part of the opportunity of your position; it is also part of the obligation.

A story from Adlai Stevenson's 1956 presidential campaign recounts that a

woman from the audience shouted to him: "Senator, you have the vote of every thinking person!" Stevenson called back: "That's not enough, madam, we need a majority!" More than a funny tale, this should remind us that we all have a responsibility in the intellectual makeup of our countries.

3. Stem the flow of bad information

While media channels have a great hold on public dialog, they do not always get the facts straight. Practicing scientists cringe when the protagonist in a movie spouts a line that reverses the work we've invested in the name of evidence and clarity. But remember that it's our own faults. The producers don't have our years of training. We need to be sharing more with them; we need to inspire them to care about the value of validity.

As an example of why it matters, consider shows like *CSI: Crime Scene Investigation*. The fancy technologies on display have led to the "CSI effect," in which jurors in real criminal cases hold the expectation that police should be able to solve crimes effortlessly, via the help of photo enhancement, analysis of biological samples, magic tricks with DNA, and so on—thereby changing the jury's likelihood of conviction on erroneous grounds (Schweitzer and Saks, 2006).

In the new *Sherlock Holmes* series on BBC, the young Holmes responds to a taunt of "psychopath!" from an officer. He whirls around and says: "I'm not a psychopath, I'm a high-functioning sociopath. Do your research." Unfortunately, despite Holmes' otherwise stellar acumen, the terms psychopath and sociopath are synonymous. And really, he doesn't fit the description in any case. A science advisor would have helped. So would more dissemination of science in the public realm.

Similarly, the condition of synesthesia was highlighted in a recent episode of *Criminal Minds*. In this Hollywood portrayal, the killer had visual experiences



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Alan Alda's If I Understood You, Would I Have This Look on My Face?: My Adventures in the Art and Science of Relating and Communicating

Eric Chudler, Ph.D.

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Editor's Note

Go to:

A primary function of my role is asking top neuroscientists to write about the latest developments in their specialty areas for lay readers. If they agree to the assignment, I encourage them to use—whenever possible—conversational language, anecdotes, storytelling, and their own voice in communicating what are often complex and hard-to-explain topics. Another option might be to suggest they read Alan Alda's new book before they begin.

Most people know Alan Alda as an actor on TV (*M*A*S*H*, *The West Wing*, *The Blacklist*), in film (*Crimes and Misdemeanors*, *The Aviator*) or on stage (*Glengarry Glen Ross*, *Love Letters*). Few may realize that Alda has also championed efforts to help scientists improve the way they communicate their work. Alda started this quest in 1993 as the host of the PBS television series *Scientific American Frontiers* and he continues this work at the [Alan Alda Center for Communication Science](#) at Stony Brook University. In his new book, *If I Understood You, Would I Have This Look on My Face?*, Alda describes his efforts to provide scientists and health professionals with tools to communicate clearly with the lay public.

As you might expect from a book about effective communication, *If I Understood You, Would I Have This Look on My Face?* is written in a way that is easy to understand. With humor and a clear, concise, and never stilted writing style, Alda takes readers on his journey to help experts convey neuroscience and other complex scientific topics to a variety of audiences



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Scientific Communications

1. Why is it important to communicate your research?
2. Who are (or will be) your audiences?
3. Where will you communicate your research?
4. When will you present your research?
5. How (methods/modes) will you communicate your research?



Scientific Communications

Why is it important to communicate your research?

Because:

- We should
- We want to
- We have to...
 - Degree requirements
 - Career advancement
 - Grant applications



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Scientific Communications

Who are (or will be) your audiences?

- Peers
- Editors
- Reviewers
- Mentors
- Public
- Employers
- Friends and Family



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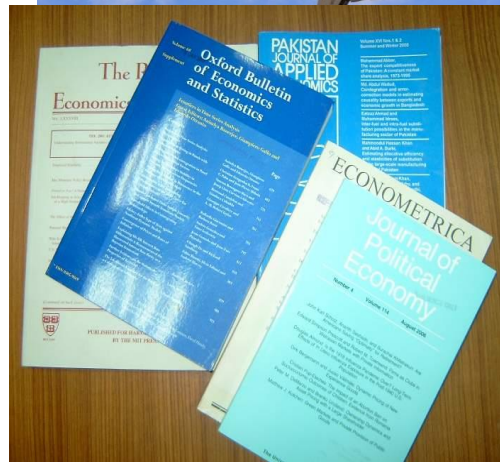


Scientific Communications

Where will you communicate your research?

- Conferences
- Classes
- Journals
- Grant Applications
- Interviews
- Informal

Plane, trains, cars,
boats, elevators, ??



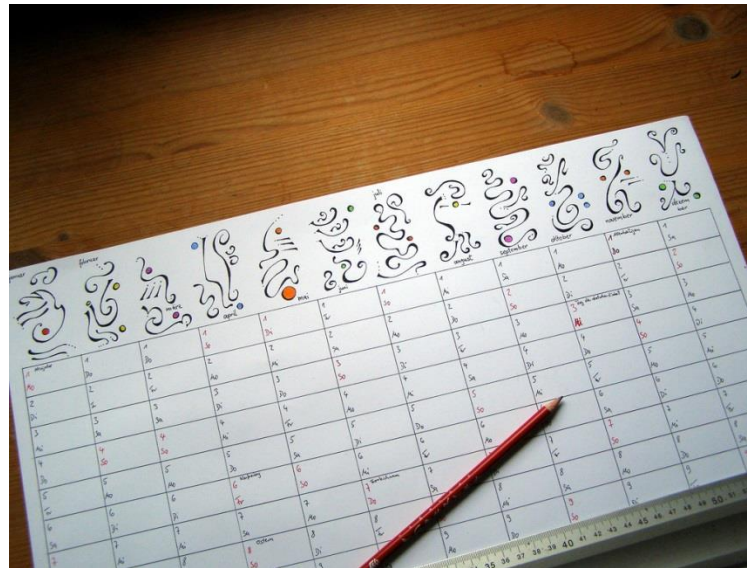
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Scientific Communications

When will you present your research?

- Lab meetings (in progress)
- Informal discussions
- Research completed
 - This summer (Research Symposium)
 - After summer (Conferences?)



Scientific Communications

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

- Papers
- Talks
- Posters
- Grants
- Blogs
- Articles



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Researching Research

How do you find appropriate background literature?

1. Ask other people what to read.
2. Search Engines:

Google Scholar: <http://scholar.google.com>

3. Electronic Databases

PubMed: <https://www.ncbi.nlm.nih.gov/pubmed/>

Scopus: <https://www.scopus.com>



Reference Managers

To find papers

To cite papers

To save papers

To create a reading list

To create a bibliography



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Things to Do (Summer 2021)

1. Attend a non-CNT seminar.
2. Read a science story in a popular science magazine, in the newspaper or on a web site.
3. Talk to a non-scientist/non-engineer about your work.
4. Go to a local science “event.”

Is it factual? Is it understandable?

Look for effective ways to communicate.

