

# Ethical Guidelines for Neurotechnologies

NeuroTechnology Center, Columbia University

Organizers: Rafael Yuste (Columbia University) and Sara Goering (University of Washington)

May 22<sup>nd</sup>-24<sup>th</sup>, 2017

Room 703, NWC Building Auditorium, 550 West 120<sup>th</sup> St., Columbia University, NY, NY 10027

Sponsored by the National Science Foundation

## **Sunday May 21st**

**Welcome Dinner 6.30 pm-9pm**

*Vinateria, 2211 Frederick Douglass Blvd, New York, NY 10026*

## **Day 1: Monday May 22<sup>nd</sup>**

**Breakfast: 8:30 - 9:00 a.m.**

**Welcome and Meeting Goals: 9:00 - 9:30 a.m.**

Rafa Yuste (Columbia)

Sara Goering (UW)

## **Session 1: 9:30 a.m. – 12:45 p.m.**

Ethical Issues of Novel Neurotechnologies: Initial Survey

9:30-10:30 Reading Neuronal Activity: Jack Gallant (Berkeley)

Case study #1: Discussant: Karen Rommelfanger (Emory)

**Coffee Break: 10:30 – 10.45 a.m.**

10:45-11:45 Writing Neuronal Activity: Jose Carmena (Berkeley)

Case study #2: Discussant: Philipp Kellmeyer (Freiburg)

11:45-12:45 Machine Intelligence: Blaise Agüera i Arcas (Google)

Case study #3: Discussant: David Wasserman (NIH)

**Lunch 12:45 – 1:45 p.m.**

## **Session 2: 2:00 - 3:00 p.m.**

Ethics in International Brain Initiatives: Brief Updates

US BRAINI: Christine Grady (NIH)

Human Brain Project: Christine Mitchell (Harvard)

Canada: Judy Illes (UBC)

Japan: Norihiro Sadato (NIPS)

Australia: Adrian Carter (Monash)

China: Guoqiang Bi (UST)

Israel and International Organizations: Mina Teicher (Bar Ilan)

**Coffee Break: 3.00 p.m.– 3.15 p.m.**

## **Session 3: 3:15 – 4:00 p.m.**

Existing Ethical Guidelines and Principles

Belmont Report: Phoebe Friesen (NYU)

Asilomar Report: Meredith Whitaker (AI Now, Google)

Related Guidelines Projects: Eran Klein (UW)

**Session 4: 4:00-5.30 p.m.**

Ethical Guidelines: General Topics

Roundtable Discussion.

**5.30- 6.00 p.m.**

Assignment to Breakout Groups

***Conference Reception 6:30 p.m.-9 p.m.***

*Rafa's Apartment, 15 Claremont Avenue, Apt 53, NY, NY 10026*

**Day 2: Tuesday May 23<sup>nd</sup>**

***Breakfast: 8:30 - 9:00 a.m.***

**Recap and aims of the day: 9 a.m. – 9:30 a.m.**

Rafa Yuste (Columbia)

Sara Goering (UW)

**Session 5: 9:30 – 11:30 a.m.**

Breakout Groups 1: Identification of Specific Issues

- A- Identity and Protection. Room: 909 NWC
  - a. Leaders: Rafa Yuste and Karen Rommelfanger
  - b. Group: Joe Fins, Norihiro Sadato
  
- B- Agency and Responsibility. Room 1209 NWC
  - a. Leaders: Laura Specker Sullivan and Philipp Kellmeyer
  - b. Group: Jonathan Wolpaw, Adrian Carter, Khara Ramos
  
- C- Privacy and Consent. Rom: 602 NWC
  - a. Leaders: Eran Klein and Jack Gallant
  - b. Group: Alan Rubel, Judy Illes, Meredith Whittaker, Jose Carmena
  
- D- Augmentation and Access. 502 NWC
  - a. Leaders: Anna Wexler and Erik Parens
  - b. Group: Guoquiang Bi, Adam Marblestone, Christine Mitchell
  
- E- Normality and Biases. Room: 703 NWC
  - a. Leaders: Sara Goering and Blaise Agüera y Arcas
  - b. Group: David Wasserman, Jane Huggins, Mina Teicher

***Coffee Break in 703 NWC: 10:30 – 10.45 a.m.***

***Lunch 11:30 a.m. – 12:30 p.m.***

**Session 6: 12:30-3:00 p.m.**

Report from morning sessions

Group leaders and general discussion

***Coffee Break: 3.00 p.m.– 3.15 p.m.***

**Session 7: 3:15-5:45 p.m.**

Breakout Groups 2: Developing Integrated Guidelines

**Conference Banquet 6pm-8.30pm**

*Red Rooster, 310 Lenox Ave, New York, NY 10027*

**Day 3: Wednesday May 24<sup>rd</sup>**

***Breakfast: 8:30 - 9:00 a.m.***

**Recap and aims of the day: 9 a.m. – 9:30 a.m.**

Rafa Yuste (Columbia)

Sara Goering (UW)

**Session 8: 9.30 a.m. – 11:30 a.m.**

Report from previous afternoon sessions; preliminary guideline statements

Group leaders and general discussion

***Coffee Break: 10:30 – 10.45 a.m.***

**Session 9: Lunch with breakout group; 11:30 a.m. – 12:45 p.m.**

Refining guideline statements

**Session 10: 1:00 p.m. – 2:30 p.m.**

Integrating the guidelines

Group leaders and general discussion

**Closing: 3 p.m.- 4 p.m.**

Recap and Next Steps

Rafa Yuste (Columbia)

Sara Goering (UW)

**4 p.m. Meeting adjourned**

**Attendees:**

Blaise Agüera y Arcas	Google	blaisea@google.com
Guoquiang Bi	University of Science and Technology of China	gqbi@ustc.edu.cn
Jose Carmena	Berkeley	jcarmena@berkeley.edu
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Sara Goering	UW	sgoering@uw.edu
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Norihiro Sadato	National Institute for Physiological Sciences	sadato@nips.ac.jp
Laura Specker Sullivan	University of Washington	specker@uw.edu
Mina Teicher	Bar-Ilan University	teicher@macs.biu.ac.il
David Wasserman	NIH Clinical Bioethics	david.wasserman@nih.gov
Anna Wexler	MIT	annaw@mit.edu
Meredith Whittaker	AI Now	meredithrachel@google.com
Jonathan Wolpaw	National Center Adaptive Neurotechnologies	jonathan.wolpaw@health.ny.gov
Rafael Yuste	Columbia	rmy5@columbia.edu