



ISSCR

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# ISSCR 2020 VIRTUAL

## ISSCR 2020 VIRTUAL FOCUS SESSION

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### THE SCIENCE AND ETHICS OF HUMAN BRAIN ORGANOID RESEARCH

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Focus Session presented by  
The ISSCR Ethics Committee

Wednesday, June 24, 2020

Live 12:00-15:00 EDT

#### Focus Session Details:

Rapid developments in human brain organoid research are likely to produce tractable new bioengineered tools for understanding functional interconnectivity of the human brain and dysfunction involved in many neurodegenerative diseases. Despite the excitement surrounding this subfield of stem cell research and its considerable scientific promise, advances could also raise novel ethical concerns. As researchers generate evermore realistic organoids that resemble human brains in vitro, it is critically important to understand what ethical boundaries may exist and where researchers and regulators should draw the line for research. In this focus session, panelists will discuss scientific, ethical, and policy issues surrounding the use of human pluripotent stem cells to generate self-organizing brain organoids and assembloids for research. The session will include scientific presentations describing how researchers generate brain organoids and how they propose to use them to advance our understanding of the brain, as well as ethics presentations on the limits of this research. The session will conclude with a discussion of regulatory and stakeholder issues, in addition to a sustained panel discussion between the audience and all of the presenters.

# SCHEDULE & SPEAKERS

12:00 am - 12:05 am

## WELCOME AND INTRODUCTION OF SPEAKERS



**Insoo Hyun, PhD**

Case Western Reserve University School of Medicine  
& Harvard Medical School, USA

12:05 am - 12:25 am

## WHAT CAN WE LEARN FROM BRAIN ORGANOID?



**Paola Arlotta, PhD**

Harvard University, USA



**Giorgia Quadrato, PhD**

University of Southern California, USA

12:25 am - 12:40 am

## HOW FAR CAN BRAIN ORGANOID RESEARCH GO?



**Sergiu Pasca, MD**

Stanford University, USA

12:40 am - 12:55 am

## WHAT ELSE COULD WE DO WITH BRAIN ORGANOID?



**George Church, PhD**

Wyss Institute, Harvard University  
& the Massachusetts Institute of Technology, USA

12:55 am - 13:15 am

## WHAT SHOULD BRAIN ORGANOID RESEARCHERS BE MOST CONCERNED ABOUT IN THE NEAR TERM?



Jeantine Lunshof, PhD

Wyss Institute & Harvard University, USA

13:15 am - 13:25 am **BREAK**

13:25 am - 13:45 am

## WHAT IS THE PATIENT PERSPECTIVE ON BRAIN ORGANOIDS?



Karin Jongsma, PhD

UMC Utrecht, Netherlands

13:45 am - 14:05 am

## STAKEHOLDER VIEWS – HOW TO SCIENTISTS AND VARIOUS PUBLICS VIEW BRAIN ORGANOID RESEARCH AND WHO SHOULD BE MAKING DECISIONS ON ITS REGULATION?



Misao Fujita, MS, MPH, PhD

Center for iPS Cell Research and Application, Kyoto University, Japan

14:05 am - 14:55 am **PANEL DISCUSSION & AUDIENCE QUESTIONS**

14:55 am - 15:00 pm

## CLOSING SUMMARY



Insoo Hyun, PhD

Case Western Reserve University School of Medicine  
& Harvard Medical School, USA