Ethical, legal and social aspects of human cerebral organoids and their governance in Germany, the U.K. and the U.S.A.

International Research Retreat for PhD Students and Early Career Researchers

8th – 12th August 2022 in Tübingen, Germany

Call for Abstracts — Deadline March 7th 2022

Cerebral organoids are small-scale, three-dimensional cell structures generated from stem cells that resemble parts of the brain with regard to specific cell types and structure. They provide a unique access to human brain tissue for researchers to use as models for studying the development and diseases of the brain. The scope of research is further enhanced by the possibilities to create patient-specific brain organoids in personalized medicine, to use methods of genome editing or to transplant organoids into animals.

In addition to established bioethical issues concerning biobanking, informed consent, ownership of biomaterials, data protection and human-animal chimeras, the ethical debate on human organoids has a strong focus on cerebral organoids potentially becoming conscious or sentient, and their moral status as they come closer to such states. Specific ethical oversight schemes and governance models may be needed to do justice to the intricate ethical and epistemic issues of research on human cerebral organoids. This is further complicated by the deep-seated cultural appreciation of human consciousness, its different conceptualizations and difficulties to measure it.

The key question of the research retreat is whether the research on human cerebral organoids and its ethical, legal and social aspects call for new regulation or governance measures. This question requires an in-depth study and interdisciplinary discussion of the scientific, epistemic, social, legal and ethical aspects and contexts of organoid research. The research retreat will also compare the regulatory and political backgrounds as well as ethical and public debates of research on cerebral organoids in Germany, the U.K. and the U.S.A. Notwithstanding their similarities in terms of their political systems and a considerable involvement in research and ethical debate on cerebral organoids, these three countries differ with regard to their governance and evaluation. To study these differences reveals the influence of political culture on the formation of public knowledge about the life sciences and could serve as a point of departure towards a best practice model of organoid research policy.

Topics for Presentation

We suggest the following topics for presentation; other proposals are also welcome:

Scientific, social and epistemic aspects:

- Current state, future prospects, and historical development of brain organoid research
- Theoretical underpinnings and experimental practice of organoid research, e.g., the role of models, the notion of self-organization
- Translational research: criteria for safety and efficacy of envisaged therapies against the backdrop of epistemic uncertainties and pressure to accelerate the transition from bench to bedside
- Cerebral organoids and their potential role in the context of personalized medicine, regenerative medicine or bioeconomies

Philosophical and scientific approaches towards the mind and consciousness

- What is human consciousness? How can we assess capabilities for consciousness or sentience — in general and in brain organoids specifically?
- How does the brain relate to the mind and personhood?

Ethical and legal issues

- The moral and legal status of human cerebral organoids, possible implication for how to handle, store and dispose of cerebral organoids, especially as they increase in size and complexity
- The role of genome editing in organoid research
- Could human cerebral organoids replace animal models or reduce the number of animals used in medical research and toxicology tests?
- Human-animal chimeras: should human cerebral organoids be implanted into animals? How can these entities be ethically and legally evaluated?
- Informed consent: Should consent models for donors and patients highlight the use of cell material for the creation of brain organoids and offer the possibility of opting out?

Governance

- How should research on human cerebral organoids be regulated? Is there a need for organoid-specific ethics oversight?
- Property and usage rights on cellular material and organoids, data protection issues
- Allocation of scarce resources for biomedical research and health care

Comparison between Germany, the U.K. and the U.S.A.

- Scientific research, legal and regulatory background, ethical debate on and public perception of cerebral organoids in Germany, the U.K. and the U.S.A., either separately or in comparison.
- Socio-cultural and political background of possible differences or similarities in governance, public debate and ethical discourse.

Public perception and narratives

- How do cerebral organoids and human-animal-chimeras figure in public discourse? What narratives and metaphors prevail about them with which origins and consequences?
- What would a best practice of science communication look like?

The Retreat

- analyses brain organoid research and related ethical, legal and social aspects
- focuses on the comparison between Germany, the United Kingdom and the United States
- fosters interdisciplinary exchange
- offers individual mentoring with experts and organizers
- includes a workshop on academic writing and publishing
- supports participants in publishing the papers developed for the retreat
- offers cultural events in the evenings

Invited Speakers

Dr. Julia Fitzgerald, Hertie-Institute for clinical brain research, Tübingen University
Prof. Dr. Henry T. Greely, Stanford Law School
Dr. Davina Höll, Institute for Ethics and History of Medicine, Tübingen University
Dr. Philipp Kellmeyer, Neuroethics and AI Ethics Lab, University Medical Center Freiburg
Prof. Dr. Karola Kreitmair, Dep. of Medical History and Bioethics, University of Wisconsin, Madison
Dr. Deborah Kronenberg-Versteeg, Hertie-Institute for clinical brain research, Tübingen University
Dr. David Lawrence, Assistant Professor in Biolaw, Durham Law School, Durham University
Dr. Alex McKeown, Neuroscience, Ethics and Society, Dep. of Psychiatry, Wellcome Centre for Ethics and Humanities, University of Oxford
Prof Dr. Silke Schicktanz, Institute for Ethics and History of Medicine, University Medical Center Göttingen
Prof. Dr. Jeremy Sugarman, John Hopkins Berman Institute of Bioethics

Application Procedure

Applicants should submit an abstract of ca. 500 words and a short CV to anja.pichl@uni-tuebingen.de and gardar.arnason@uni-tuebingen.de by **March 7th 2022**. The research retreat is aimed at:

- PhD candidates and early career researchers
- working in the following or related fields: organoid or stem cell research, medicine, law, ethics, neurophilosophy, philosophy or history of science, philosophy of mind, cognitive science, social sciences, STS, cultural studies, anthropology

After an expert evaluation, authors of accepted submissions will be notified by March 31st 2022. A manuscript of the planned presentation should be submitted by July 10th 2022.

Publication

The participants are invited to develop their papers presented at the retreat and submit it for a publication edited by the organizers.

Organizers

Dr. Gardar Arnason, Prof. Dr. Robert Ranisch, Dr. Oliver Feeney, Anja Pichl

Research Unit “Ethics of Genome Editing”, Institute for Ethics and History of Medicine, Eberhard Karls University Tübingen, in collaboration with Faculty of Health Sciences Brandenburg, University of Potsdam

Further information

Language: English

Location: Hohentübingen Castle and University Hospital Tübingen, Germany

Costs: Travel and accommodation costs will be reimbursed. Participants will receive an allowance of 300 €.

Travel information: The closest airports are Stuttgart and Frankfurt.

Contact: Anja Pichl, anja.pichl@uni-tuebingen.de

EBERHARD KARLS UNIVERSITÄT TÜBINGEN

FORSCHUNGSSTELLE ETHIK DER GENOM-EDITIERUNG

FAKULTÄT FÜR GESUNDHEITSWISSENSCHAFTEN BRANDENBURG

DR. KURT UND IRMGARD MEISTER-STIFTUNG IM STIFTERVERBAND

GEMEINSAME FAKULTÄT der Universität Potsdam, der Medizinischen Hochschule Brandenburg Theodor Fontane und der Brandenburgischen Technischen Universität Cottbus-Senftenberg

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