NATIONAL INSTITUTES OF HEALTH

Workshop on Research with Animals Containing Human Cells

AGENDA

November 6, 2015

8:30 AM **Welcome and Opening Remarks**
Francis Collins, MD, PhD – National Institutes of Health

8:40 AM **State of the Science Overview**
George Daley, MD, PhD – Harvard Medical School

Session I: Introducing Human Pluripotent Cells into Early-Stage Non-Human Vertebrate Animal Embryos

9:00 AM **Panel Presentations**

Moderator:

- Janet Rossant, PhD, FRS, FRSC – The Hospital for Sick Children

Panelists:

- Jacob Hanna, MD, PhD – Weizmann Institute of Science
- Juan Carlos Izpisua Belmonte, PhD – Salk Institute for Biological Studies
- Hiromitsu Nakauchi, MD, PhD – Stanford University School of Medicine
- Walter Low, PhD – University of Minnesota and Recombinetics Inc.
- Qi Zhou, PhD – Institute of Zoology, Chinese Academy of Sciences

10:00 AM **Break**

10:15 AM **Discussion Session**

- What scientific questions are best addressed through the use of human/animal chimera models?
- What advances have been made using these models and what advances are on the horizon?
- Are there technical barriers or other limitations in this area of research?
- Would the use of cells from non-human primates (instead of or prior to use of human cells) be informative?

11:30 AM **Lunch**

Session II: Introducing Human Neural Stem Cells or Progenitor Cells into Non-Human Vertebrate Animal Embryos or Fetuses

12:00 PM **Panel Presentations**

Moderator:

- Rusty Gage, PhD – Salk Institute for Biological Studies

Panelists:

- Rudolf Jaenisch, MD – Massachusetts Institute of Technology
- Rick Livesey, MD, PhD – University of Cambridge
- Lorenz Studer, MD – Memorial Sloan Kettering Cancer Center
- Steven Goldman, MD, PhD – University of Rochester Medical Center

1:00 PM **Discussion Session**

- What scientific questions are best addressed through the use of human/animal chimera models?
- What advances have been made using these models and what advances are on the horizon?
- Are there technical barriers or other limitations in this area of research?
- Would the use of cells from non-human primates (instead of or prior to use of human cells) be informative?
- What are the types of cognitive and behavioral changes anticipated in these experiments and how are unexpected changes monitored?

2:15 PM **Break**

Session III: Ensuring the Responsible Conduct of Research with Animals Containing Human Cells

2:30 PM **Panel Presentations**

Moderator:

- Hank Greely, JD – Stanford Law School

Panelists:

- Jonathan Kimmelman, PhD – McGill University
- Nancy Lee, Blnt Bus, LLB, LLM – Wellcome Trust
- Patricia Olson, PhD – California Institute for Regenerative Medicine
- Kathryn Bayne, PhD, DVM – Association for Assessment and Accreditation of Laboratory Animal Care International
- Patricia Brown, VMD – National Institutes of Health

3:30 PM **Discussion Session**

- Does the research discussed at the workshop raise unique animal welfare and safety issues?
- Is the existing oversight structure capable of evaluating and mitigating these concerns?
- Are there measurable behaviors to assess the impact of human neural cells/non-human primate neural cells on animal behavior and neurological function?
- Are there particular experimental outcomes that should be avoided?

4:45 PM **Workshop Wrap-Up and Concluding Remarks**
Carrie Wolinetz, PhD – National Institutes of Health

5:00 PM **Adjourn**