Preface from your Host

Dear Colleagues,

The DFG Priority Programme *SPP1356 – Pluripotency and Cellular Reprogramming* (www.spp1356.de) welcomes you to the International Symposium "Reprogrammed Stem Cells" in Berlin from March 20–22, 2014.
At the end of the funding period of the SPP1356 the symposium is intended to bring together German and international colleagues to discuss the molecular concepts of pluripotency and directed reprogramming. The symposium will represent the current state of the ES cell and reprogramming field and provides a platform for interdisciplinary discussion of new concepts and technologies.
Starting with a public keynote presentation on the opening day we will have two more days of scientific presentation and exchange.
Speaking time is assigned as follows (speaking + discussion time):

Invited talks: 25 + 5 min.
Contributed talks: 10 + 5 min.

Poster sessions are scheduled during lunch breaks.
This symposium is a joint enterprise of the SPP1356, the Berlin-Brandenburg Academy of Sciences and Humanities (BBAW) and the ELSA Research Project (BMBF) „Developmental Totipotency". The latter covers ethical and legal aspects of totipotency and cellular reprogramming in a concurrent session on Friday, March 21st., 2014.
We wish you an interesting and exiting conference as well as an enjoyable stay in Berlin!

The Conference Chairs

Albrecht Müller Hans Schöler

Jörn E. Walter Martin Zenke

Congress Venue

Berlin-Brandenburg Academy of Sciences and Humanities
(BBAW)
Entry: Markgrafenstr. 38 · 10117 Berlin

Deadlines

Abstract Submission: January 15th, 2014
Registration: January 15th, 2014
Registration Fee: 100,– € (Academics and Students)
The conference will host an industrial exhibition.

Organisation and Contact

SPP1356 Office, Kathrin Mantel
ZEMM, Universität Würzburg,
Zinklesweg 10, 97080 Würzburg, Germany
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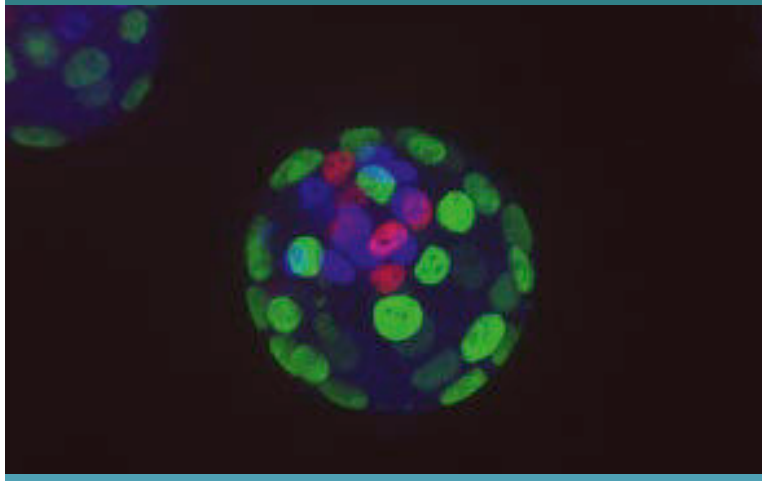
www.spp1356.de

Gestaltung: design@smi.uni-wuerzburg.de

SPP 1356
PLURIPOTENCY
Reprogramming

International Symposium *эR*programmed Stem Cells

at the Berlin-Brandenburg Academy of Sciences and Humanities



March 20–22, 2014
Berlin

berlin-brandenburgische AKADEMIE DER WISSENSCHAFTEN

DFG Deutsche Forschungsgemeinschaft

in cooperation with the ELSA Research Project (BMBF) "Developmental Totipotency"

Thursday, March 20th, 2014

17:00–17:45 **Registration**

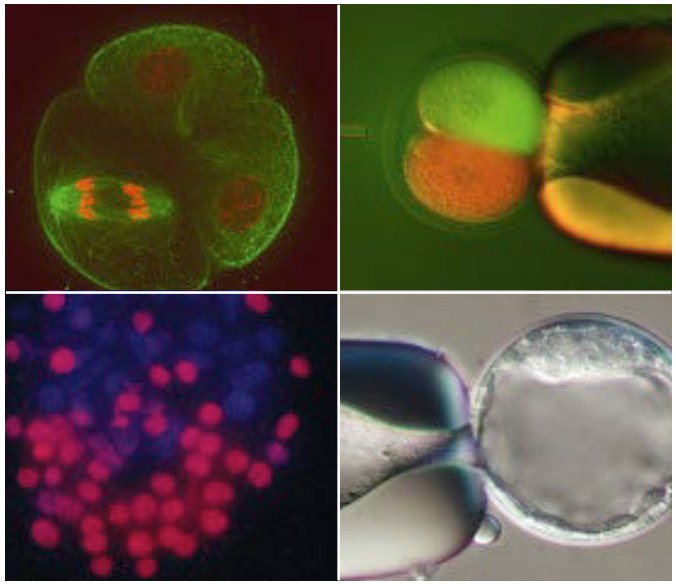
17:45–18:00 **Welcome and Opening**

18:00–19:30 **Public Keynote Lecture**

Ernst-Ludwig Winnacker, Human Frontier Science Program, Strassbourg, F

Title: Stratifizierte Medizin über Stammzellen und andere moderne Technologien

19:30 **Social Hour** (lite bites and drinks)



Source: Michele Boiani lab, Münster

Friday, March 21st, 2014

09:00–10:30 **The Biology of ES Cells and Reprogramming I**

Amanda G. Fisher, Imperial College, London, UK

Tobias Cantz, Hannover Medical School, Germany, ELSA Research Project (BMBF) „Developmental Totipotency"

SPP1356-presentations

11:00–12:30 **Concurrent Session I: ELSA Research Project (BMBF) „Developmental Totipotency: Defining a Normative Criterion in Ethics and Law in the Light of Novel Results in Developmental Biology"**

Concurrent Session II: The Biology of ES Cells and Reprogramming II

Ana Pombo, MDC, Berlin, Germany

Austin Cooney, Baylor College of Medicine, Houston, TX, USA

SPP1356-presentations

12:30–14:00 **Lunch & Posters & Exhibition**

14:00–15:30 **Pluripotency and Chromatin I**

Takashi Tada, Kyoto University, JP

Niall Dillon, Imperial College London, UK

Asifa Akhtar, MPI of Immunobiology and Epigenetics, Freiburg, Germany

SPP1356-presentations

16:00–17:30 **Pluripotency *in silico***

Thomas Dandekar, University of Würzburg, Germany

SPP1356-presentations

17:30–18:30 **Totipotency and Bioethics Joined Session of ELSA Research Project (BMBF) and SPP 1356**

20:00 **Evening Event**
(Location: Saarländische Landesvertretung)

Saturday, March 22nd, 2014

09:00–10:30 **Pluripotency and Chromatin II**

Wendy Bickmore, MRC, Human Genetics Unit, University of Edinburgh, UK

Ian Chambers, University of Edinburgh, UK

SPP1356-presentations

11:00–12:30 **Molecular Regulators of ES Cells and Developement I**

Rainer Renkawitz, University of Giessen, Germany

SPP1356-presentations

12:30–13:30 **Lunch & Posters & Exhibition**

13:30–15:00 **Molecular Regulators of ES Cells and Developement II**

SPP1356-presentations

Keynote Lecture

Rudolf Jaenisch, Whitehead Institute, Cambridge, MA, USA

15:30–17:00 **Chromatin and Nuclear Organisation**

Danny Reinberg, Howard Hughes Medical Institute, New York, USA

Bas van Steensel, NCI, Amsterdam, NL

SPP1356-presentations

17:00–17:30 **Concluding Remarks and End of Meeting**

Liebe Kolleginnen und Kollegen

Der deutsche Gesetzgeber bestimmt den menschlichen Embryo sowohl im Embryonenschutzgesetz (1990) als auch im Stammzellgesetz (2002, 2008) mittels des biologisch funktionalen Begriffs der Totipotenz. Geht man hypothetisch davon aus, dass menschliche Körperzellen während einer Reprogrammierung zu iPS-Zellen eine transiente totipotente Phase durchlaufen, stellt sich die Frage, ob auch diesen Zellen der normative Status eines Embryos zukommt. Kann der Rekurs auf die entwicklungsbiologische Totipotenz angesichts neuer Techniken und Erkenntnisse noch eine tragfähige Basis für die normative Statusbestimmung des menschlichen Embryos liefern?
Dieser Frage widmet sich unser interdisziplinäres BMBF-gefördertes ELSA-Forschungsverbundprojekt „Entwicklungsbiologische Totipotenz. Bestimmung als normatives Kriterium in Ethik und Recht unter Berücksichtigung neuer entwicklungsbiologischer Erkenntnisse“ und lädt zur Präsentation und Diskussion der Projektergebnisse ein.
Das Symposium ist eine gemeinsame Veranstaltung unseres Forschungsprojekts und des DFG-Schwerpunktprogramms SPP 1356 „Pluripotency and Cellular Reprogramming“ in Kooperation mit der Interdisziplinären Arbeitsgruppe Gentechnologiebericht der Berlin-Brandenburgischen Akademie der Wissenschaften (BBAW).
Wir freuen uns auf Ihr Kommen und auf anregende Diskussionen.

T. Heinemann H.-G. Dederer T. Cantz

Teilprojekt Philosophie, Koordination
Prof. Dr. med. Dr. phil. Thomas Heinemann, Lehrstuhl Ethik, Theorie und Geschichte der Medizin, Philosophisch-Theologische Hochschule Vallendar
Dr. Heike Baranzke, Barbara Advena-Regnery, Kathrin Rottländer

PHILOSOPHISCH THEOLOGISCHE HOCHSCHULE VALLENDAR
Kirchlich und staatlich anerkannte Wissenschaftliche Hochschule in freier Trägerschaft

Teilprojekt Rechtswissenschaft
Prof. Dr. iur. Hans-Georg Dederer, Lehrstuhl für Staats- und Verwaltungsrecht, Universität Passau
Lena Laimböck

UNIVERSITÄT PASSAU

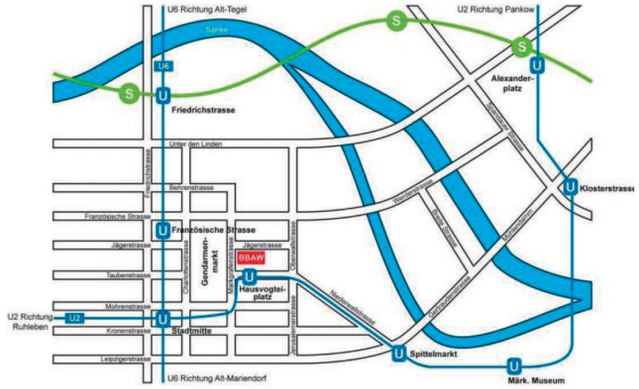
Teilprojekt Entwicklungsbiologie
PD Dr. med. Tobias Cantz, Medizinische Hochschule Hannover
Susan Sgodda, Abbas Peh-Pajooh

MHH Medizinische Hochschule Hannover

Veranstaltungsort

Berlin-Brandenburgische Akademie
der Wissenschaften (BBAW)
Jägerstr. 22/23, 10117 Berlin

Eingang: Markgrafenstr. 38



Kontakt und Anmeldung

Philosophisch-Theologische Hochschule Vallendar (PTHV)
Lehrstuhl Ethik, Theorie und Geschichte der Medizin
Pallottistr. 3, 56179 Vallendar

Tel. +49 (0) 261 6402 223
Fax +49 (0) 261 6402 300
lehrstuhl-medizinethik@pthv.de

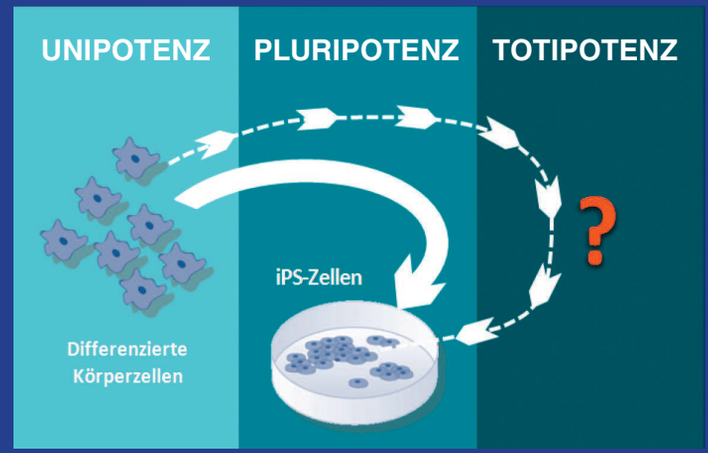
oder Anmeldeformular unter www.pthv.de

Anmeldung
ab sofort bis zum 21. Februar 2014

ELSA-Forschungsverbundprojekt „Entwicklungsbiologische Totipotenz: Bestimmung als normatives Kriterium in Ethik und Recht unter Berücksichtigung neuer entwicklungsbiologischer Erkenntnisse“

Es werde (k)ein Embryo

Zur normativen Bewertung von totipotenten menschlichen Zellen



20. / 21. März 2014
Berlin

Bundesministerium für Bildung und Forschung

berlin-brandenburgische AKADEMIE DER WISSENSCHAFTEN

In Kooperation mit dem DFG-Schwerpunktprogramm SPP 1356 „Pluripotency and Cellular Reprogramming“ (www.spp1356.de) und der Interdisziplinären Arbeitsgruppe Gentechnologiebericht der Berlin-Brandenburgischen Akademie der Wissenschaften (www.gentechnologiebericht.de)

Programm

Donnerstag, 20. März 2014

17:00–17:45 **Registrierung**
Leibniz-Saal

17:45–18:00 **Eröffnung**

18:00–19:30 **Öffentliche Keynote Lecture**
Ernst-Ludwig Winnacker
Human Frontier Science Program
Straßburg, F

Stratifizierte Medizin –
Über Stammzellen und andere moderne Technologien

19:30 **Abendempfang**

©Tobias Cantz

Freitag, 21. März 2014

9:00–10:30 **The Biology of ES Cells and Reprogramming I**
Leibniz-Saal
Amanda G. Fisher
Imperial College, London, UK
Vortragstitel wird angekündigt

Tobias Cantz
Medizinische Hochschule Hannover
Reprogramming of Somatic Cells: Alternative Approaches Exploiting RNA-Interference (ELSA-Forschungsverbundprojekt)

10:30–11:00 Kaffeepause

11:00–17:30 **Concurrent Session II**
Leibniz-Saal
The Biology of ES Cells and Reprogramming II
SPP 1356 Pluripotency and Cellular Reprogramming *(s.gesondertes Programm)*

Einstein-Saal **Concurrent Session I**

Es werde (k)ein Embryo. Zur normativen Bewertung von totipotenten menschlichen Zellen
ELSA-Forschungsverbundprojekt „Entwicklungsbiologische Totipotenz: Bestimmung als normatives Kriterium in Ethik und Recht unter Berücksichtigung neuer entwicklungsbiologischer Erkenntnisse“

11:00–11:20 **Begrüßung und Einführung**

11:20–12:30 **Teilprojekt Entwicklungsbiologie**
(Moderation: Hans-Georg Dederer)

Susan Sgodda
Medizinische Hochschule Hannover
Der Totipotenzbegriff im Zuge neuer biotechnologischer Verfahren

Kommentar: Christopher Baum
Medizinische Hochschule Hannover
Diskussion

12:30–13:30 Mittagspause

13:30–15:15 **Teilprojekt Philosophie**
(Moderation: Tobias Cantz)

Barbara Advena-Regnery
Philosophisch-Theologische Hochschule Vallendar
Natürlicher Embryo – geeignetes Wertprädikat für die Bioethik?

Heike Baranzke, Philosophisch-Theologische Hochschule Vallendar
Der menschliche Embryo zwischen Naturzweck und Handlungszweck

Kommentar: Geert Keil
Humboldt-Universität, Berlin

Diskussion

15:15–15:45 Kaffeepause

15:45–16:50 **Teilprojekt Rechtswissenschaft**
(Moderation: Thomas Heinemann)

Lena Laimböck, Universität Passau
Von „Totipotenz“ zu „qualifizierter Entwicklungsfähigkeit“

Kommentar: Jens Kersten
Ludwig-Maximilians-Universität, München

Diskussion

16:50–17:20 **Abschlussdiskussion**
mit Projektleitern, Projektbearbeiterinnen und Kommentatoren
(Moderation: Thomas Heinemann)

17:30–18:30 **Joint Session of ELSA Research Project (BMBF) and SPP 1356 (DFG)**
Leibniz-Saal

Interactive Session: Clinical Transplantation of Reprogrammed Cells and the Need of Normative Frameworks

20:00 **Abendveranstaltung in der Saarländischen Landesvertretung**

Joint Session

ELSA Research Project (BMBF) and SPP 1356 (DFG)

Clinical Transplantation of Reprogrammed Cells and the Need of Normative Frameworks

Session I

iPS Cell Research Meets Systems Medicine

Martin Zenke
Technical Note on cDNA Array, mRNA-Sequencing, Array-CGH, Full Genome Sequencing, Epigenetic Profiling

Hans-Georg Dederer
Availability of Patient-Specific Data to Governmental Institutions

Session II

Accidental Findings and Biodata Privacy

Tobias Cantz
Examples of Accidental Findings in iPS-Cell Research

Thomas Heinemann
Ethical Implications of Accidental Findings in iPS-Cell Research

Session III

Transparent Human Beings

Jörn Walter
Big Data Mining: Genetic and Epigenetic High-Throughput Screens

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ELSA Research Project (BMBF) and SPP 1356 (DFG)

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TED-Questions

Session I

- What is the most important release criterion for the certification of iPS cell lines used in disease modeling / drug screening?
  1. no adverse findings in transcriptome profiling (gene arrays)
  2. no adverse findings in transcriptome profiling (mRNA-sequencing)
  3. no subchromosomal alterations (array-CGH)
  4. no major mutations in full genome sequencing
  5. no major alterations in epigenetic profiling (genome-wide DNA-methylation)

- What is the most important release criterion for the certification of iPS cell derivatives used in cell therapies?
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Session II

- What kind of data would provide accidental findings most problematic for patients?
  1. transcriptome profiling with gene arrays
  2. transcriptome profiling with mRNA-sequencing
  3. analysis of subchromosomal alterations (array-CGH)
  4. genetic analyses using full genome sequencing
  5. epigenetic profiling analyzing genome-wide DNA-methylation

Session III

- Will we ever be able to predict issues of longevity, personality, sexual orientation in stem cells?
  1. Yes, science will bring us there; no concerns.
  2. No, that is fiction.
  3. This is frightening. It may happen, but we would need a broad consent.

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