



GermanStemCellNetwork

6th Annual GSCN Conference

19 – 21 September 2018

German Cancer Research Center (DKFZ)
Heidelberg

www.gscn.org



Program & Abstracts

Supported by



Federal Ministry
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GERMAN
CANCER RESEARCH CENTER
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HI-STEM

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FOR STEM CELL TECHNOLOGY
AND EXPERIMENTAL MEDICINE



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GermanStemCellNetwork

6th Annual GSCN Conference of the German Stem Cell Network (GSCN)

19 – 21 September 2018

**German Cancer Research Center (DKFZ)
Heidelberg**

Organizer:

German Stem Cell Network (GSCN)
c/o Max Delbrück Center (MDC)
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Welcome address



Dear Friends and Colleagues,

It is a great pleasure to welcome you to the **6th Annual Conference of the German Stem Cell Network (GSCN) in Heidelberg**, which is hosted by the German Cancer Research Center. The conference will foster the interaction between researchers working on different types of stem cells, including pluripotent stem cells, stem cells during development and in adult organs as well as cancer stem cells. Two poster sessions, meet-the-expert-tables, an industry exhibition and two evening events will offer you many opportunities for exciting discussions, academic exchange and reconnecting with old friends and new colleagues.

Since promotion of junior scientists is a particular aim of the GSCN, most speakers are selected from the best abstracts that have been submitted. Again, awardees of the GSCN prizes will present their results during the Presidential Symposium. The program will be completed by invited keynote lectures to present the international points of reference for this fast growing field of research. We are happy that Allison Bardin (Paris), Steve Goldman (Rochester), Michael Laflamme (Toronto), Andras Nagy (Toronto), William Pu (Cambridge, US), Nicolas Rivron (Utrecht), Alex Schier (Cambridge, US), Jialong Wang (New York) and Leonard Zon (Cambridge, US) will present their most recent results. Several additional scientific events will accompany the GSCN conference: 10th International Behr Symposium on Stem Cells and Cancer (16–19 September), Symposium of BMBF projects: Innovative technologies in stem cell research for individualized medicine (18 September), GSCN non-PI meeting (18 September), Symposium on ethical, legally and social aspects of stem cell research (19–20 September).

I hope you will enjoy this conference and wish you an interesting and enjoyable stay in Heidelberg!

Best wishes,

A blue ink signature of Ana Martin-Villalba, written in a cursive style.

Ana Martin-Villalba (GSCN Acting President)

For the program committee

Daniel Besser (Berlin) • Lázaro Centanin (Heidelberg) •
Gergana Dobrova (Mannheim) • Hartmut Geiger (Ulm) •
Susanne Kleber (Heidelberg) • Jan Lohmann (Heidelberg) •
Ulrich Martin (Hannover) • Ana Martin-Villalba (Heidelberg) •
Andreas Trumpp (Heidelberg)

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Conference Information

Venue

German Cancer Research Center/
Deutsches Krebsforschungszentrum (DKFZ)
Communication Center
Im Neuenheimer Feld 280
69120 Heidelberg

Marsilius-Kolleg
Im Neuenheimer Feld 130.1
69120 Heidelberg

Date

Wednesday, 19 September to Friday, 21 September 2018

Registration

Regular fee:	570 €	Day ticket regular fee:	200 €
Regular member fee:	360 €	Day ticket regular member fee:	160 €
Student fee:	285 €	Day ticket student fee:	100 €
Student member fee:	180 €	Day ticket student member fee:	80 €
Technical assistant fee:	160 €		

The registration fee includes the admission to all scientific sessions, poster and commercial exhibition, the get-together on 19 September and the networking evening on 20 September, lunch and coffee breaks, free internet access, conference documents including badge, final program and abstracts book.

Internet

Internet access via Wireless LAN is free of charge.

The login data for the DKFZ is:

Username: guest-0042, Password: sXWwA35f (enter "guest" in the SSID field)

The login data for the Marsilius-Kolleg is: Login: m49, Password: MK0517gast (Net: UNI-WEBACCESS)

Posters exhibition

Posters will be displayed during the conference in two sessions in the Marsilius-Kolleg and on the gallery of the lecture hall in the DKFZ. Authors are asked to be present at their poster during the poster session. You will find the number of your poster in this abstract volume. Posters in poster session I should be mounted on Wednesday, 10:30 – 16:30 h and removed latest on Thursday at 13:00 h. Posters in poster session II should be mounted on Thursday, 13:00 – 16:00 h and removed latest on Friday at 16:00 h.

Poster session I

Wednesday, 19 September 2018, 17:30 – 19:30 h

Even numbers will be presented 17:30 – 18:30 h and
odd numbers 18:30 – 19:30 h.

DKFZ Gallery

Computational stem cell biology (P001 – P009)
Stem cells in diseases: cancer stem cells (P010 – P014)
Hematopoietic stem cells (P015 – P029)

Foyer Marsilius-Kolleg

Stem cells in regenerative therapies (P030 – P069)

Poster session II

Thursday, 20 September 2018, 16:30 – 18:30 h

Even numbers will be presented 16:30 – 17:30 h and
odd numbers 17:30 – 18:30 h.

DKFZ Gallery

Pluripotency and reprogramming (P070 – P082)
Somatic stem cells and development (P083 – P096)

Foyer Marsilius-Kolleg

Stem cells in disease modeling and drug development (P097 – P145)

supported by
Thermo Fisher Scientific



supported by
Takara Bio Europe, SAS



GSCN Awards

Travel awards

The following participants have been selected for the GSCN travel awards:

- *Rasha Elsabagh*, Animal Health Research Institute (AHRI), Minouf, Egypt
- *Selina Greuel*, Berlin-Brandenburg Center for Regenerative Therapies, Berlin
- *Fereshteh Haghighi*, Biochemistry and molecular Biology II, Düsseldorf
- *Alexander Kalmbach*, Institute for Human Genetics, Essen
- *Matthias Hebisch*, Institute of Reconstructive Neurobiology, Bonn
- *Mohsen Moslem*, Karolinska Institute, Stockholm, Sweden

The travel awards are supported by the member company Eppendorf AG.



Poster awards

There will be two poster awards for each poster session. The awardees will receive 500 €. Authors are asked to be present at the poster award ceremony, which will take place on Friday, 21 September 2018, 15:30 – 15:50 h in the DKFZ lecture hall.

The poster awards are supported by the member company Peprotech GmbH.



Scientific awards 2018

A top-class commission supported the GSCN in choosing this year's awardees. The three awardees will give a presentation in the Presidential Symposium on Thursday, 20 September 2018, 14:00 – 16:15 h.

- **GSCN Young Investigator Award:** *Nina Cabezas-Wallscheid*, Max Planck Institute for Immunobiology and Epigenetics, Freiburg
- **GSCN Female Scientist Award:** *Maria Elena Torres-Padilla*, Helmholtz Zentrum München
- **The GSCN Publication of the Year Award** (July 2017 to June 2018): *Maja Milanovic* (Hematology, Oncology and Tumor Immunity, Charité – Universitätsmedizin Berlin) and *Clemens Schmitt* (Deputy Director of the Charité – Universitätsmedizin Berlin's Medical Department, Director of the Molecular Cancer Research Center, Max Delbrück Center for Molecular Medicine in the Helmholtz Association) for their publication "Senescence-associated reprogramming promotes cancer stemness", released 2018 in the journal *Nature* (Milanovic, M *et al.*, 2017, *Nature* 553, 96-100; doi: 10.1038/nature25167)



Symposium of BMBF projects: Innovative technologies in stem cell research for individualized medicine

Tuesday, 18 September

Marsilius-Kolleg, Heidelberg

Despite the broad spectrum of established medical procedures, for many diseases no suitable treatment option is available. A particular challenge is the increasing number of degenerative diseases for which there are hardly any causal therapies due to the lack of donor organs. Innovative stem cell technologies offer tremendous potential for the development of new, customized cell-based therapies as well as for the creation of human disease models based on in vitro generated tissues and organoids. Such in vitro models can be of great value for both molecular pathology research and drug discovery. The efficacy and undesirable side effects of drugs can be tested in advance for specific groups of patients or individuals, contributing to the much-needed increase in drug development. The projects funded in this BMBF initiative are intended to help overcome existing barriers to the medical use of innovative stem cell technologies, thereby unlocking the potential of new stem cell technologies for individualized medicine.

13 research consortia with 49 projects will present their strategies and newest results in this symposium.

Lecture hall

14:00 – 14:10 **Welcome** BMBF/PT; GSCN

Model- & Testsystems I (Chairs: *Jan Georg Hengstler / Thomas Moritz*)

14:10 – 14:30 **Neuro2D3**: Standardized systems for modeling late-onset neurological disorders and compound screening in 2D and 3D culture
Oliver Brüstle, University Hospital Bonn

14:30 – 14:50 **HIT-Tau**: High Throughput Approaches for the Individualized Therapy of Tau-Related Diseases
Günter Höglinger, DZNE & TU Munich

14:50 – 15:10 **PDdementia**: Identification of compounds preventing cognitive decline in Parkinson's disease patients using clinically correlated iPS cell models
Jared Sternecker, TU Dresden

15:10 – 15:30 **MAIV**: Modelling ALS disease in vitro
Sergio Gascón, Complutense University of Madrid

15:30 – 15:45 **Coffee break**

Model- & Testsystems II (Chairs: *Marius Ader / Jared Sternecker*)

- 15:45 – 16:05 **HiPSTAR:** Establishment, validation and standardization of individualized hiPS-based blood brain barrier models for Alzheimer drug development and testing in vitro
Ole Pleß, Fraunhofer IME ScreeningPort Hamburg
- 16:05 – 16:25 **Micro-iPS-Profiler:** Individualized Microfluidic-Multiorgan-Chip Multimode Profiling Platform based on iPS-Technology (kidney)
Juliane Schnabel, microfluidic ChipShop GmbH
- 16:25 – 16:45 **PancChip:** Pancreas development and disease modelling on an iPSC chip platform
Matthias Meier, Helmholtz Zentrum München
- 16:45 – 17:05 **StemNet:** iPSC cell derived human hepatocytes: improved reprogramming and development of in vitro disease models
Jan Georg Hengstler, IfADO & TU Dortmund
- 17:05 – 17:25 **Stabil-Ice:** Stabilizing an efficient workflow for drug discovery and patient-specific disease modelling by introducing a novel multi-usage disposable, capable of the generation, cultivation, ice-free cryopreservation, and ultra-fast recovery of neuronal cell systems
Ina Meiser, Fraunhofer IBMT
- 17:25 – 17:40 **Coffee break**

Therapy (Chairs: *Oliver Brüstle / Claudia Gärtner*)

- 17:40 – 18:00 **i-MACnet:** Genetically corrected iPSC-derived macrophages (i-MAC) for innovative gene therapeutic strategies
Thomas Moritz, Hannover Medical School Therapy
- 18:00 – 18:20 **iCARE:** Induced pluripotent stem cells (iPSCs) for Clinically Applicable heart REpair
Ulrich Martin, Hannover Medical School
- 18:20 – 18:40 **ReSight:** Generation of transplantable hiPSC-derived retinal cells for treatment of retinal degeneration
Marius Ader, TU Dresden
- 18:40 – 19:00 **iPStemRNA:** Preparation of clinical grade mRNA iPSC lines from a panel of universal donors according to federal permission §13AMG
Micha Drukker, Helmholtz Zentrum München
- 19:00 – 20:00 **Poster session** (please find the abstracts on page 283)
- 20:00 – 21:00 **Get-together**



Federal Ministry
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and Research



DLR Projektträger

Symposium zu ethischen, rechtlichen und sozialen Aspekten der Stammzellforschung

Organisatoren: *Tobias Cantz* (Hannover) & *Sara Gerke* (Cambridge, US), GSCN Fachgruppe ELSA

Mittwoch, 19. September

17:00 – 17:30 **Anmeldung** (Foyer CC DKFZ)

17:30 – 18:30 **GSCN Postersession** (Empore Hörsaal DKFZ / Foyer Marsilius-Kolleg)

Marsilius-Kolleg, Hörsaal

18:30 – 18:45 **Begrüßung und Einführung**

18:45 – 19:15 E1 – Interspecies blastocyst complementation for patient-specific organs: the patient-animal relationship and its implications for patient decision-making
Dirk Alexander Frick, Hannover

Hörsaal DKFZ

19:45 – 20:30 **Keynote Vortrag (GSCN Annual Conference 2018)**

K4 – The blastoid: blastocyst-like structures generated solely from stem cells
Nicolas Rivron, Hubrecht Institute, Utrecht, Netherlands
(Moderation: *Tobias Cantz*)

20:30 – 22:00 **Abendbuffet im Foyer DKFZ – GSCN**

Donnerstag, 20. September

09:00 – 10:30 **Genom-Editierung / Keimbahntherapie**

09:00 – 09:30 E2 – The ethics of human genome editing: revisiting and mapping the implications of human germline modification in the light of CRISPR-Cas
Sebastian Schleidgen, Vallendar
(gemeinsam mit *Hans-Georg Dederer*, Passau; *Susan Sgodda*, Hannover; *Stefan Cravcisin*, Passau; *Luca Lüneburg*, Passau; *Tobias Cantz*, Hannover & *Thomas Heinemann*, Vallendar)

09:30 – 10:00 E3 – Legal Implications of human germ line modification using CRISPR/Cas
Stefan Cravcisin, Passau
(gemeinsam mit *Hans-Georg Dederer*, Passau)

10:00 – 10:30 E4 – Ethische und rechtliche Aspekte der Keimbahntherapie durch Genom-Editierung: zur Herausforderung der Translation in die klinische Anwendung
Tanja Henking, Würzburg-Schweinfurt & *Robert Ranisch*, Tübingen

10:30 – 11:00 **Kaffeepause**

11:00 – 11:30 E5 – Stakeholder participation in clinical trials – an ethical analysis using the example of hiPS-cell research
Solveig Lena Hansen, Göttingen
(gemeinsam mit *Claudia Wiesemann*, Göttingen)

11:30 – 13:00 **Patente / Eigentumsrechte**

11:30 – 12:00 E6 – Ausnahmen von der Patentierbarkeit: Eine ethisch motivierte Regulierung der Stammzellforschung durch die Hintertür?

Fruzsina Molnar-Gabor & Gösta Gantner, Heidelberg

12:00 – 12:30 E7 – Patentability of human artificial germ cells

Sebastian Girschick, Passau

12:30 – 13:00 E8 – „Are these yours?“ A legal and ethical view of rights and interests in stem cells in the context of research and commercialization

Nils Hoppe, Hannover

13:00 – 14:00 Mittagessen im Foyer CC DKFZ

Hörsaal DKFZ

14:00 – 16:15 **Presidential Symposium (GSCN Annual Conference 2018)**

Moderation: *Ana Martin-Villalba*

14:00 – 14:45 PS1 – Human glial progenitor cell-based treatment and modeling of neurological disease

Steve Goldman, University of Rochester Medical Center, US/Center for Translational Neuromedicine, Uni. Copenhagen, Denmark

14:45 – 15:15 **GSCN Female Scientist Award 2018**

PS2 – Epigenetic mechanisms of cellular plasticity

Maria Elena Torres-Padilla, Helmholtz Zentrum München

15:15 – 15:45 **GSCN Young Investigator Award 2018**

PS3 – Regulation of dormant hematopoietic stem cells

Nina Cabezas Wallscheid, Max Planck Institute of Immunobiology and Epigenetics, Freiburg

15:45 – 16:15 **GSCN Publication of the Year 2018 Award**

PS4 – Senescence-associated reprogramming promotes cancer stemness

Maja Milanovic, Charité, Berlin

16:15 – 16:30 Kaffeepause im Foyer CC DKFZ

Marsilius-Kolleg, Seminarraum 1

16:30 – 18:20 **Workshops**

Workshop 1: Zelltherapien und Genom-Editierung (Moderation: *Solveig Lena Hansen*)

Workshop 2: Organoide (Moderation: *Tobias Cantz*)

Workshop 3: Gameten (Moderation: *Sara Gerke*)

16:30 – 17:30 Kleingruppenarbeit

17:30 – 18:00 Vorstellung der Ergebnisse (jeweils 10 Min. pro Workshop)

18:00 – 18:20 Diskussion

18:20 – 18:30 **Schlusswort**

19:00 – 01:00 **GSCN Networking evening (GSCN Annual Conference 2018)**

mit Abendbuffet und DJ im Frauenbad, Heidelberg

Social events

Get-together

Wednesday, 19 September 2018

20:30 – 22:00 h

German Cancer Research Center/
Deutsches Krebsforschungszentrum (DKFZ)
Communication Center

All participants and exhibitors are invited to a **get-together** with dinner buffet in the foyer of the DKFZ.



Networking evening in the Frauenbad, Heidelberg



Thursday, 20 September 2018

19:00 – 01:00 h

Frauenbad

Poststr. 36/5 · 69115 Heidelberg

www.alteshallenbad.de

Free shuttle buses to network evening.
Buses will leave at 18:45 h from the DKFZ.

Experience an extraordinary evening in the unique atmosphere of the former bathing hall Frauenbad – Art Nouveau and Classicism meet design and modernity. The Networking evening with dinner buffet and DJ is included in the registration fee and open for all participants and exhibitors.



Public outreach event (in German)

Zelluläre Alleskönner? Aktuelle Stammzellforschung bei Menschen, Tieren und Pflanzen

Podiumsdiskussion zur aktuellen Forschung mit Wissenschaftlern und Ärzten

Wann: **Freitag, 21. September 2018, 18:30–21:00 Uhr**

Programm: 18:30 Uhr: Einlass & Posterausstellung zu Stammzellen
19:00 Uhr: Podiumsdiskussion & Kurzfilme
20:30 Uhr: Ausklang mit Brezeln und Getränk
21:00 Uhr: Ende

Ort: **Mathematikon**

Berliner Str. 41-49 · 69120 Heidelberg

Grundlagenforschung an Stammzellen im Tiermodell und in Pflanzen bietet wichtige Erkenntnisse für die Entwicklung moderner Zelltherapien. Heute erhalten Sie Antworten auf Ihre Fragen:

- Warum nehmen neurodegenerative Krankheiten mit steigendem Alter zu?
- Wie ist der Stand der Stammzellforschung?
- Wie weit ist die Entwicklung von modernen Zelltherapien?
- Welche Aussichten zeichnen sich für die Klinik und die Anwendung ab?
- Welche Rechte haben Patienten an ihren gespendeten Zellen?
- Was verbindet die Stammzellforschung an Tieren und Pflanzen?

Wissenschaftler und Ärzte stellen den aktuellen Stand der Grundlagenforschung und den möglichen klinischen Einsatz moderner Zelltherapien vor. Kurze Filme veranschaulichen ihre Arbeit. Anschließend diskutieren die Experten Einsatzmöglichkeiten von Stammzellen bei Erkrankungen und beantworten Fragen aus dem Publikum:

Prof. Dr. Ana Martin-Villalba, Deutsches Krebsforschungszentrum Heidelberg (DKFZ)

Prof. Dr. Dirk Jäger, Geschäftsführender Direktor, verantwortet den klinischen Bereich des Nationalen Centrums für Tumorerkrankungen (NCT) in Heidelberg

Prof. Dr. Jan Lohmann, Centre for Organismal Studies (COS), Universität Heidelberg

Prof. Dr. Nils Hoppe, Professor für Ethik und Recht in den Lebenswissenschaften, Universität Hannover

Moderation: *Dr. Stefanie Seltmann*

Floor plan

Sorted in alphabetical order

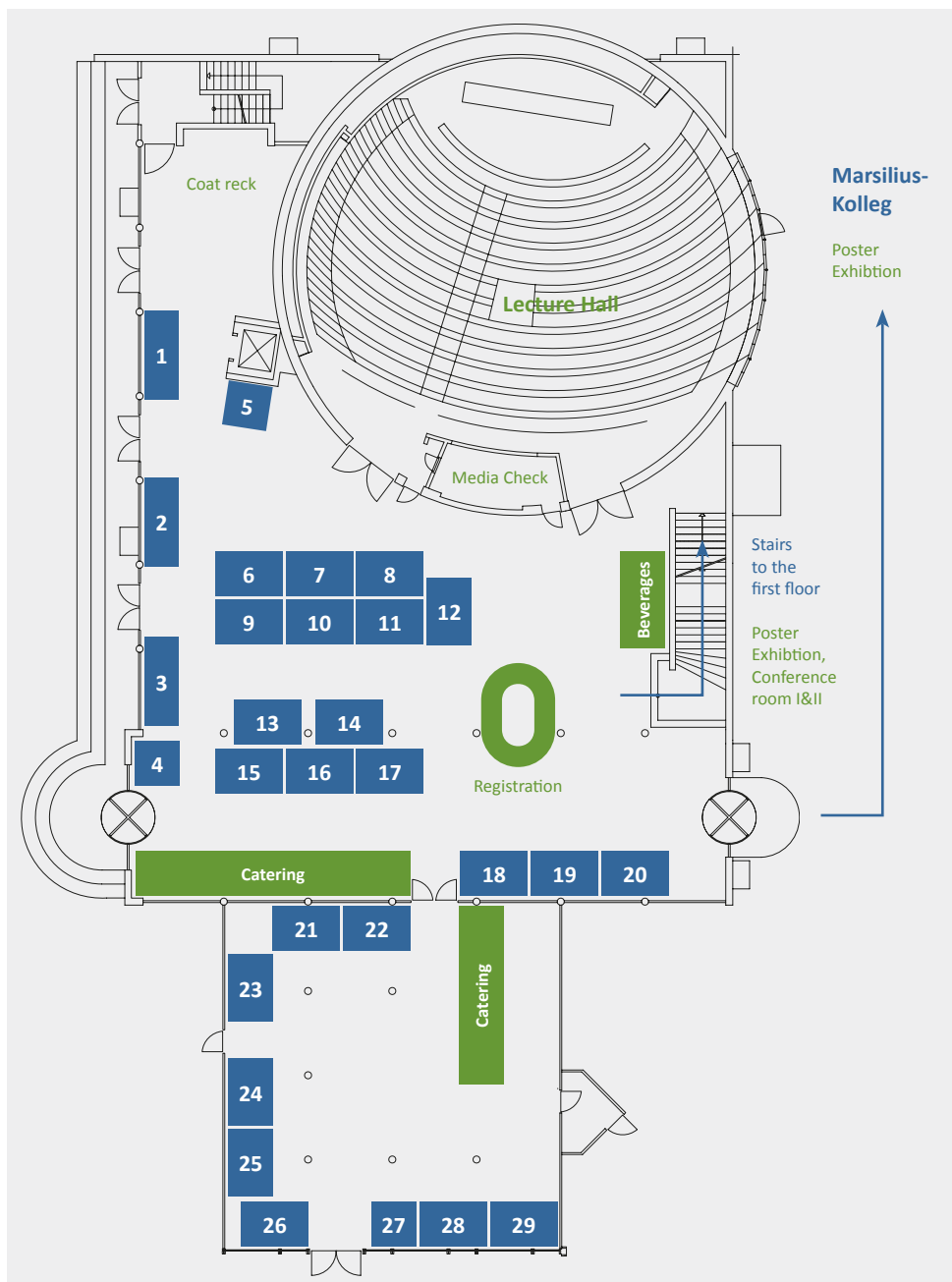
COMPANY

NUMBER

Sorted by booth number

COMPANY

COMPANY	NUMBER	COMPANY
AMS Biotechnology (Europe) Ltd	15	1 PureTec Analytics UG/Orflo Technologies
Beckman Coulter GmbH	19	2 PromoCell GmbH
Becton Dickinson GmbH	13	3 HiSS Diagnostics GmbH
BioLamina AB	23	4 PL BioScience GmbH
Bioquell UK Ltd	24	5 Macopharma International GmbH
BIOTREND Chemikalien GmbH	10	6 Thermo Fisher Scientific
ChemoMetec GmbH	22	7 neoFroxx GmbH/Biological Industries
Eppendorf AG	18	8 Takara Bio Europe, SAS
HiSS Diagnostics GmbH	3	9 OriGene Technologies GmbH
I&L Biosystems GmbH	29	10 BIOTREND Chemikalien GmbH
Iota Sciences Ltd.	27	11 STEMCELL Technologies GmbH
Labotect GmbH	28	12 Miltenyi Biotec GmbH
Macopharma International GmbH	5	13 Becton Dickinson GmbH
microfluidic ChipShop GmbH	20	14 Sarstedt AG & Co. KG
Miltenyi Biotec GmbH	12	15 AMS Biotechnology (Europe) Ltd
neoFroxx GmbH/Biological Industries	7	16 OLS OMNI Life Science GmbH & Co. KG
NIPPON GENETICS EUROPE GmbH	26	17 PeproTech GmbH
OLS OMNI Life Science GmbH & Co. KG	16	18 Eppendorf AG
OriGene Technologies GmbH	9	19 Beckman Coulter GmbH
PeproTech GmbH	17	20 microfluidic ChipShop GmbH
PL BioScience GmbH	4	21 TTP Labtech Ltd
PromoCell GmbH	2	22 ChemoMetec GmbH
PureTec Analytics UG/Orflo Technologies	1	23 BioLamina AB
Sarstedt AG & Co. KG	14	24 Bioquell UK Ltd
STEMCELL Technologies GmbH	11	25 XCeltis GmbH
Takara Bio Europe, SAS	8	26 NIPPON GENETICS EUROPE GmbH
Thermo Fisher Scientific	6	27 Iota Sciences Ltd.
TTP Labtech Ltd	21	28 Labotect GmbH
XCeltis GmbH	25	29 I&L Biosystems GmbH



Program Overview

Wednesday, 19 September 2018

	German Cancer Research Center		Marsilius-Kolleg
	Lecture hall	Conference room I&II	Lecture hall
08:00 – 09:00	Registration		
	Joined session with Behr symposium		
09:00 – 09:45	<i>Gergana Dobreva</i> <i>Lázaro Centanin</i>	transmission of the lectures	
09:45 – 10:30	Keynote lecture I <i>Leonard Zon</i>	transmission of the lectures	
10:30 – 11:00	Coffee break / Industry exhibition / Registration		
11:00 – 11:30	Opening		
11:30 – 12:15	Keynote lecture II <i>Alex Schier</i>		
12:15 – 13:00	Keynote lecture III <i>William Pu</i>		
13:00 – 14:30	Lunch break / Industry exhibition		
14:30 – 16:00	Concurrent scientific working group session I		
	Technobeat Workshop	Computational stem cell biology	Stem cells in disease: cancer stem cells
16:00 – 16:30	Coffee break / Industry exhibition		
16:30 – 17:30		GSCN Members Meeting	
17:30 – 19:30	Poster session I (P001 – P069)		
17:30 – 18:30	posters with even numbers		
18:30 – 19:30	posters with uneven numbers		
19:45 – 20:30	Keynote lecture IV <i>Nicolas Rivron</i>		
20:30 – 22:00	Informal GSCN get-together with dinner buffet at the foyer of the DKFZ CC		

Thursday, 20 September 2018

	German Cancer Research Center		Marsilius-Kolleg	
	Lecture hall	Conference room I&II	Lecture hall	Seminar room 1
09:00 – 10:30	Concurrent scientific working group session II			ELSA symposium
	Stem cells in disease modeling and drug development	Pluripotency and Re-programming		09:00 – 11:30 Genom-Editierung / Keimbahntherapie
10:30 – 11:00	Coffee break/Industry exhibition			Coffee break
11:00 – 12:30	Industry session: “Technologies from GSCN industry partners”			
	Eppendorf AG PeproTech GmbH	Takara Bio Europe Miltenyi Biotec GmbH Thermo Fisher Scientific	Biological Industries STEMCELL Technologies	11:30 – 13:00 Patente / Eigentumsrechte
12:30 – 14:00	Lunch buffet/Industry exhibition/Poster viewing in the foyer DKFZ			
12:45 – 13:45		Meet-the-expert tables (limited to 10 participants each table)		

	German Cancer Research Center		Marsilius-Kolleg	
	Lecture hall	Conference room I&II	Lecture hall	Seminar room 1
14:00 – 16:15	Presidential Symposium			
14:00 – 14:45	Presidential Invite <i>Steven A. Goldman</i>			
14:45 – 15:15	Female Scientist Award <i>Maria Elena Torres-Padilla</i>			
15:15 – 15:45	Young Investigator Award <i>Nina Cabezas-Wallscheid</i>			
15:45 – 16:15	Publication of the Year Award <i>Maja Milanovic</i>			
16:15 – 16:30	Coffee break/Industry exhibition in the foyer DKFZ			
16:30 – 18:30	Poster session II (P070 – P145)			Workshops
16:30 – 17:30	posters with even numbers			
17:30 – 18:30	posters with odd numbers			
19:00 – 01:00	GSCN Networking evening with dinner buffet and DJ at the Frauenbad			

Friday, 21 September 2018

	German Cancer Research Center		Marsilius-Kolleg
	Lecture hall	Conference room I&II	Lecture hall
09:00 – 10:30	Concurrent scientific working group session III		
	Stem cells in regenerative therapies	Hematopoietic stem cells	Somatic stem cells and development
10:30 – 11:00	Coffee break/Industry exhibition		
11:00 – 12:30	Concurrent strategic working group session		
	Career development	Technologies in stem cell research – microfluidics	Clinical trials and regulatory affairs
12:30 – 14:00	Lunch buffet/Industry exhibition/Poster viewing		
12:45 – 13:45	Meet-the-expert tables (limited to 10 participants each table)		
14:00 – 14:45	Keynote lecture V <i>Allison Bardin</i>		
14:45 – 15:30	Keynote lecture VI <i>Jianlong Wang</i>		
15:30 – 16:00	Poster award ceremony and closing remarks		
	End of conference		
18:30 – 21:00	GSCN public outreach event with panelists in the Mathematikum (in German) Zelluläre Alleskönner? Aktuelle Forschung an Stammzellen bei Menschen, Tieren und Pflanzen		

Legend:

- Joined session with Behr symposium / Opening / Evening events / Members meeting
- Keynote lectures / GSCN awardees
- Concurrent scientific working group sessions
- Concurrent strategic working group session / Meet-the-expert tables
- ELSA symposium
- Poster sessions and poster award ceremony
- Industry session

Program

Wednesday, 19 September

08:00 – 09:00 Registration

Lecture hall **Joined session with Behr Symposium**

Chair: *Andreas Trumpp / Nina Cabezas-Wallscheid*

09:00 – 09:25 T01 – Transcriptional and epigenetic control of cardiogenesis
Gergana Dobрева, Medical Faculty Mannheim, Uni. Heidelberg

09:25 – 09:45 T02 – Organ topology splits homeostatic and growth stem cells in fish
Lázaro Centanin, Centre for Organismal Studies (COS), Uni. Heidelberg

09:45 – 10:30 **Keynote lecture I**

K1 – Tracking HSC self-renewal and differentiation in the niche
Leonard Zon, Harvard Department of Stem Cell and Regenerative Biology, Cambridge, US

10:30 – 11:00 Coffee break / Industry exhibition / Registration

Lecture hall **Opening**

11:00 – 11:15 Welcome to German Cancer Research Center (DKFZ), Heidelberg
Michael Boutros, DKFZ

11:15 – 11:30 GSCN Annual Conference 2018
Ana Martin-Villaba, President GSCN

11:30 – 12:15 **Keynote lecture II**

K2 – Global views of development: Reconstructing trajectories and lineages
Alex Schier, Harvard University, Cambridge, US (Chair: *Lázaro Centanin*)

12:15 – 13:00 **Keynote lecture III**

K3 – Engineered human heart tissue models of inherited heart disease
William Pu, Harvard Stem Cell Institute, Cambridge, US (Chair: *Gergana Dobрева*)

13:00 – 14:30 Lunch break / Industry exhibition

supported by STEMCELL Technologies GmbH

14:30 – 16:00 **Concurrent scientific working group session I**

Lecture hall **Technobeat workshop** (Chairs: *Robert Zweigerdt / Dirk Strunk*)

14:30 – 15:00 T03 – **Special keynote:** Human embryonic stem cell-derived cardiomyocytes regenerate the infarcted pig heart
Michael Laflamme, Toronto General Hospital Research Institute, Canada

15:00 – 15:12 T04 – Chemically defined cardiomyogenic differentiation of human pluripotent stem cells in bioreactors
Caroline Halloin, Hannover Medical School

15:12 – 15:24 T05 – Aiming for increased retention of cardiac cell aggregates in a porcine model of myocardial infarction

Evelyne Demkes, UMC Utrecht, Netherlands

15:24 – 15:36 T06 – Development of immunosuppressive iPSC-derived stromal cells for tissue regeneration

Patricia Peking, Paracelsus Medical University, Salzburg, Austria

15:36 – 15:48 T07 – Human stem cell-derived cardiac fibroblasts enhance structural and functional cardiomyocyte maturation in a three-dimensional microtissue environment

Elisa Giacomelli, Leiden University Medical Center, Netherlands

15:48 – 16:00 T08 – The detection and minimisation of genetically variant stem cells in human pluripotent stem cell cultures

Jason Halliwell, Uni. Sheffield, U.K.

Room I & II Computational stem cell biology (Chairs: *Georg Füllen / Ingo Röder*)

14:30 – 15:00 T09 – **Special keynote:** Dynamics of T cell memory generation inferred from single cell fate mapping in vivo

Michael Floßdorf, TU Munich

15:00 – 15:15 T10 – Divisional behaviour of hematopoietic stem cells revisited: insights from a mathematical model of in vivo label dilution

Thomas Zerjatke, TU Dresden

15:15 – 15:30 T11 – Unidirectional and progressive DNA methylation changes define hematopoietic lineage commitment

Sina Stäble, German Cancer Research Center, Heidelberg

15:30 – 15:45 T12 – Reconstruction of hematopoietic differentiation trajectory using Triplet-network

Tingying Peng, HelmholtzZentrum Munich

15:45 – 16:00 T13 – A web application for predicting cell-fate determinants in cell differentiation

Andras Hartmann, Luxembourg Center for Systems Biomedicine

LH Marsilius- **Stem cells in disease: cancer stem cells**

Kolleg (Chairs: *Thomas Brabletz / Michael Rieger*)

14:30 – 15:00 T14 – **Special keynote:** A molecular subtype of cancer originating from adult stem cells during regeneration is driven by Dux transcription factors

Johnny Kim, MPI-HLR, Bad Nauheim

15:00 – 15:15 T15 – Orchestration of stem- and EMT-like phenotypes during tumor initiation and progression

Oguzhan Kaya, German Cancer Research Center, Heidelberg

15:15 – 15:30 T16 – Unbiased identification of tumour suppressor function by pooled CRISPR/Cas9 screening in human colon organoids

Henner Farin, Georg-Speyer-Haus, Frankfurt

15:30 – 15:45 T17 – The microRNA-371~373 cluster represses colon cancer initiation and metastatic colonization by inhibiting the TGFBR2/ID1 signaling axis
Elisabeth Letellier, Uni. Luxembourg

15:45 – 16:00 T18 – High transglutaminase 2 activity is a poor prognostic marker in colorectal carcinoma and essential for cell survival and stemness
Ilaria Lunger, Goethe Uni. Hospital, Frankfurt

16:00 – 16:30 Coffee break / Industry exhibition

Room I & II

16:30 – 17:30 **GSCN General membership meeting**

17:30 – 19:30 **Poster session I: P001 – P069**

supported by Thermo Fisher Scientific

DKFZ Gallery

P001 – P009: Computational stem cell biology

P010 – P014: Stem cells in diseases: cancer stem cells

P015 – P029: Hematopoietic stem cells

Foyer Marsilius-Kolleg

P030 – P069: Stem cells in regenerative therapies

Even numbers: please present your poster from 17:30 – 18:30

Odd numbers: 18:30 – 19:30

Lecture hall

19:45 – 20:30 **Keynote lecture IV**

K4 – The blastoid: blastocyst-like structures generated solely from stem cells
Nicolas Rivron, Hubrecht Institute, Utrecht, Netherlands (Chair: *Tobias Cantz*)

20:30 – 22:00 **Informal GSCN get-together for all participants**
with dinner buffet at the foyer of the DKFZ CC

Thursday, 20 September

09:00 – 10:30 Concurrent scientific working group session II

Lecture hall **Stem cells in disease modelling and drug development**

(Chairs: *Oliver Brüstle / Bert Klebl*)

09:00 – 09:30 T19 – **Special keynote:** Pluripotent stem cell models of human heart disease
Karl-Ludwig Laugwitz, TUM School of Medicine, Munich

09:30 – 09:45 T20 – Recapitulation of plaque formation, tau pathology and neurodegeneration in a human 3D model of Alzheimer's disease
Matthias Hebisch, Institute for Reconstructive Neurobiology, Uni. Bonn

09:45 – 10:00 T21 – Neural retina differentiation of hESCs as an in vitro model for retinoblastoma
Julia Menges, Institute of Human Genetics, University Hospital Essen

10:00 – 10:15 T22 – IndivuHeart – risk assessment for heart diseases with patient-specific iPSC-derived engineered heart tissue
Bärbel Ulmer, University Medical Center Hamburg-Eppendorf (UKE)

10:15 – 10:30 T23 – A coherent roadmap to generate either pancreatic acinar or duct-like cells from human pluripotent stem cells challenges pancreatic cancer biology
Meike Hohwieler, Internal Medicine I, Ulm University Hospital

Room I&II **Pluripotency and Re-programing** (Chairs: *Hans Schöler / Mathias Treier*)

09:00 – 09:30 T24 – **Special keynote:** Engineering a safe and allo-tolerated pluripotent stem cell line; a global source for off-the-shelf therapeutic cell products
Andras Nagy, Lunenfeld-Tanenbaum Research Institute, Mount Sinai Hospital, Toronto, Canada

09:30 – 09:45 T25 – Reprogramming factor promiscuity requires co-factors to ensure cell fate specificity
Moritz Mall, German Cancer Research Center, Heidelberg

09:45 – 10:00 T26 – Genome-wide analyses of LINE-1 (L1) integromes in human induced pluripotent stem cells uncover insertional bias for active transcriptional start sites
Gerald Schumann, Paul Ehrlich Institute, Langen

10:00 – 10:15 T27 – Expanded potential stem cells (EPSCs) derived from porcine embryos contribute to porcine development in vivo
Monika Nowak-Imialek, Hannover Medical School

10:15 – 10:30 T28 – Identification of embryonic neural border stem cells and its generation by direct reprogramming from human blood
Marc Christian Thier, German Cancer Research Center, Heidelberg

10:30 – 11:00 Coffee break / Industry exhibition

11:00 – 12:30 **Industry session: “Technologies from GSCN industry partners”**

Lecture hall **Main supporter** (Chair: *Michael Cross*)

11:00 – 11:45 C1 – Stem cell bioprocessing: Process design, scale-up, and product safety
Philipp Nold, Eppendorf AG

11:45 – 12:30 C2 – Large-scale production of induced pluripotent stem cells-derived megakaryocytes in bioreactors
Constanca Figueiredo, Hannover Medical School
representing PeproTech GmbH

Room I&II **Supporter** (Chair: *Frank Edenhofer*)

11:00 – 11:30 C3 – Creation of isogenic cell lines for disease modelling, using CRISPR/CAS9 footprint-free gene editing and single-cell cloning of human iPSCs
Anders Aspegren, Takara Bio Europe, SAS

11:30 – 12:00 C4 – Translating research protocols and tools to manufacturing concepts for PSC-derived ATMPs
Sebastian Knöbel, Miltenyi Biotec GmbH

12:00 – 12:30 C5 – Removing inherent bottlenecks in the genome engineering of iPSCs to build relevant disease models for target and compound screening
Jon Chesnut, Thermo Fisher Scientific

LH Marsilius-Kolleg **Supporter** (Chair: *Ulrich Martin*)

11:00 – 11:30 C6 – Considerations for serum- and xeno-free media for stem cell applications
Suzanne Badoux, Biological Industries, Ltd.

11:30 – 12:00 C7 – Organoids are complex, growing them shouldn't be: efficient, standardized tools for organoid culture
Katharina Debowski, STEMCELL Technologies GmbH

12:30 – 14:00 **Lunch break / Industry exhibition / Poster viewing**

supported by Miltenyi Biotec GmbH

Room I&II

12:45 – 13:45 **Meet-the-expert tables** (limited to 10 registered participants each)
Gergana Dobрева, Medical Faculty Mannheim, Uni. Heidelberg
Lázaro Centanin, Centre for Organismal Studies (COS), Uni. Heidelberg
Andras Nagy, Lunenfeld-Tanenbaum Research Institute, Mount Sinai Hospital, Toronto, Canada

Lecture hall **Presidential Symposium**
Chair: *Ana Martin-Villalba*

14:00 – 14:45 **Presidential Invite**
PS1 – Human glial progenitor cell-based treatment and modeling of neurological disease
Steven A. Goldman, University of Rochester Medical Center, US / Center for Translational Neuromedicine, Uni. Copenhagen, Denmark

- 14:45 – 15:15 **GSCN Female Scientist Award 2018**
PS2 – Epigenetic mechanisms of cellular plasticity
Maria Elena Torres-Padilla, Helmholtz Zentrum München
- 15:15 – 15:45 **GSCN Young Investigator Award 2018**
PS3 – Regulation of dormant hematopoietic stem cells
Nina Cabezas-Wallscheid, Max Planck Institute of Immunobiology and Epigenetics, Freiburg
- 15:45 – 16:15 **GSCN Publication of the Year 2018 Award**
PS4 – Senescence-associated reprogramming promotes cancer stemness
Maja Milanovic, Charité, Berlin
- 16:15 – 16:30 **Coffee break / Industry exhibition**
- 16:30 – 18:30 **Poster session II: P070 – P145** supported by Takara Bio Europe, SAS
DKFZ Gallery
P070 – P082: Pluripotency and reprogramming
P083 – P096: Somatic stem cells and development
Foyer Marsilius-Kolleg
P097 – P145: Stem cells in disease modeling and drug development
Even numbers: 16:30 – 17:30
Odd numbers: 17:30 – 18:30
- 19:00 – 01:00 **GSCN Networking evening for all participants**
with dinner buffet and DJ at the Frauenbad, Heidelberg

Friday, 21 September

- 09:00 – 10:30 **Concurrent scientific working group session III**
- Lecture hall** **Stem cells in regenerative therapies**
(Chairs: *Ulrich Martin / Wolfgang Wagner*)
- 09:00 – 09:30 T29 – **Special keynote**: Photoreceptor transplantation into the mammalian retina
Marius Ader, Center for Regenerative Therapies (CRTD), TU Dresden
- 09:30 – 09:45 T30 – Thyroid hormone signaling controls zebrafish brain regeneration
Michael Brand, Center for Regenerative Therapies (CRTD), TU Dresden
- 09:45 – 10:00 T31 – Two succeeding fibroblastic lineages drive dermal development and the transition from regeneration to scarring
Yuval Rinkevich, Helmholtz Zentrum München
- 10:00 – 10:15 T32 – Investigation of the role of pericytes in the in vitro model of bioartificial tissue formation from hPSC-derived cardiovascular cell types
Monika Szepes, Hannover Medical School

10:15 – 10:30 T33 – Hematopoietic stem cell gene therapy for *lfngr1*-deficiency highlights role of macrophages in mycobacterial infections and paves way for macrophage transplantation therapy
Kathrin Haake, Hannover Medical School

Room I & II Hematopoietic stem cells (Chairs: *Timm Schroeder / Claudia Waskow*)

09:00 – 09:30 T34 – **Special keynote:** Impact of inflammation on hematopoietic stem cells
Mick Milsom, German Cancer Research Center, Heidelberg

09:30 – 09:45 T35 – Cell-extrinsic and -intrinsic regulation of *PU.1* in HSC lineage choice
Nouraz Ahmed, Department of Biosystems Science & Engineering, ETH Zurich/
Basel, Switzerland

09:45 – 10:00 T36 – Combined single-cell and spatial transcriptomics to deconvolute the hematopoietic and mesenchymal stem cell niche
Simon Haas, German Cancer Research Center, Heidelberg

10:00 – 10:15 T37 – *P53* prevents malignant transformation of hematopoietic stem cells by forcing their entry into the cell cycle and apoptosis in response to DNA damage
Andreas Brown, Institute for Molecular Medicine, Uni. Ulm

10:15 – 10:30 T38 – Functional dominance of *CHIP*-mutated hematopoietic stem cells in patients undergoing autologous stem cell transplantations
Lena Dorsheimer, University Hospital, Goethe University, Frankfurt

LH Marsilius-Kolleg Somatic stem cells and development
(Chairs: *Thomas Braun / Federico Calegari*)

09:00 – 09:30 T39 – **Special keynote:** Beta cell development, heterogeneity and regeneration
Heiko Lickert, Institute of Diabetes and Regeneration Research, Helmholtz Zentrum München

09:30 – 09:45 T40 – Endoderm formation does not require a mesendoderm progenitor stage and is independent from brachyury function
Silvia Engert, Institute of Diabetes and Regeneration Research, Helmholtz Zentrum München

09:45 – 10:00 T41 – DNA methylation changes during culture expansion of mesenchymal stromal cells are strand-specific and reflect changes in chromatin conformation
Julia Franzen, Helmholtz-Institute for Biomedical Engineering, RWTH Aachen Medical School

10:00 – 10:15 T42 – Setting the gene regulatory landscape driving astroglialogenesis by stage-specific transcription factors
Neha Tiwari, Institute of Physiological Chemistry, University Medical Center, Mainz

10:15 – 10:30 T43 – Quiescence regulates the number of neural stem cells and their regenerative capacity in the aging brain
Georgios Kalamakis, German Center Research Center, Heidelberg

10:30 – 11:00 Coffee break / Industry exhibition

11:00 – 12:30 **Concurrent strategic working group session**

Lecture hall **Career development** (Chairs: *Hartmut Geiger / Insa Schröder*)

S1 – Mobbing at the workplace: Effective solutions for livable working environments /
Mobbing am Arbeitsplatz und wirksame Antworten für lebenswerte Arbeitskulturen
Matthias Tholen, Tholen Beratung, Heidelberg
Annette Bornhäuser, Selbstcoaching, Heidelberg

Room I & II **Technologies in stem cell research – microfluidics in stem cell research**
(Chairs: *Michael Cross / Sebastian Knöbel*)

11:00 – 11:30 S2 – Modelling human rostro-caudal neural patterning with microfluidic gradients
Agnete Kirkeby, University of Copenhagen, Denmark

11:30 – 12:00 S3 – Microfluidic ipSC-derived human autologous organ-on-chip
Nicola Elvassore, University of Padova, Italy

12:00 – 12:30 S4 – Microfluidic ipSC-derived human autologous Multi-Organ-Chips
Ousamma El-Baraka, TissUse GmbH, Berlin

LH Marsilius-Kolleg **Clinical trials and regulatory affairs** (Chairs: *Andreas Kurtz / Zoltan Ivics*)

11:00 – 11:30 S5 – Pluripotent stem cell-based therapy in type-1 diabetes
Henrik Semb, University of Copenhagen, Denmark

11:30 – 12:00 S6 – Translating tissue engineered heart repair
Malte Tiburcy, University of Göttingen

12:00 – 12:30 S7 – Advanced Therapy Medicinal Products (ATMPs): what is needed for smooth transition from R&D to clinical development stage
Diane Seimetz, Biopharma Excellence GmbH, Munich

12:30 – 14:00 Lunch break / Industry exhibition / Poster viewing

Room I&II

12:45 – 13:45 **Meet-the-expert tables** (limited to 10 registered participants each)
Diane Seimetz, Biopharma Excellence GmbH, Munich
Andreas Trumpp, German Cancer Research Institute, Heidelberg

Lecture hall

14:00 – 14:45 **Keynote lecture V**

K5 – Genetic and epigenetic processes controlling adult stem cell behavior
Allison Bardin, Institut Curie, Paris, France (Chair: *Ingrid Lohmann*)

14:45 – 15:30 **Keynote lecture VI**

K6 – Molecular control of stem cell and developmental potency
Jianlong Wang, Icahn School of Medicine at Mount Sinai, New York, US
(Chair: *Jan Lohmann*)

15:30 – 15:50 **Poster award ceremony**

Daniel Besser

15:50 – 16:00 **Closing remarks by the incoming GSCN president**

Hartmut Geiger

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