



PhD Program “Regenerative Sciences”

Times (unless otherwise stated and indicated in **bold**):

Tutorials: **Thursdays, 3:00 – 4:00 pm**

Seminars: **Thursdays, 4:15 – 5:45 pm**

Locations: *Please note the changes!*

Semester 1 & 2 MHH, building J11, Hans-Borst-Zentrum (**HBZ**), level S0, seminar room 6040

Semester 3 & 4 MHH, building J04, level 01, **HBRS** seminar room 1140

Other Locations*:

NIFE*:

Niedersächsisches Zentrum für Biomedizintechnik, Implantatforschung und Entwicklung - NIFE
(Lower Saxony Centre for Biomedical Engineering, Implant Research and Development)
Stadtfelddamm 34
30625 Hannover

Feodor-Lynen Str. 21*:

Dr. Sarah Strauß
Ambystoma Mexicanum Bioregeneration Center & Spider Silk Laboratory
Feodor-Lynen Str. 21, 30625 Hannover
Building M05 level S0 seminar room 0110

Dr. Stephan Klöß
ATMP-GMP-DU
Building 05, level 4
Feodor-Lynen-Straße 21, 30625 Hannover
Seminar: Building 05, level 3
Tutorial: Building 05, level 1

Hannover Unified Biobank (HUB)

Dr. Norman Klopp
Building M23 (CRC)
Feodor-Lynen-Str.15, 30625 Hannover

1st semester: HBZ seminar room (J11-S0-6040) unless otherwise indicated				
Introductory lecture - Welcoming speech - The curriculum of RegSci & HBRS - Principles of regenerative sciences and the REBIRTH approach	seminar	Wednesday, 02.10.2024	10:30 – 12:00, lecture hall M, J1	Ulrich Martin, Gaby Frieriep
Principles of growth factor signaling 1 - Paracrine and juxtacrine signaling - Signaling pathways involved in the regulation of growth	seminar	10.10.2024	4:15 – 5:45 pm	Rainer Niedenthal
Principles of growth factor signaling 2 - Cytokines, hormones, and their receptors	seminar & tutorial	17.10.2024	3:00 – 4:30 pm	Michael Morgan
			4:45 – 5:45 pm	
Basic mechanisms of inflammation 1 - Innate and adaptive immunity and differentiation	seminar	24.10.2024	4:15 – 5:45 pm Seminar room 76, J06-S0-4150	Siegfried Weiß
	tutorial	07.11.2024	3:00 – 4:00 pm	
Good Scientific Practice Part 1: Introduction and Data Management (MANDATORY!)	seminar	Monday, 28.10.2024	3:00 - 4:30 pm, lecture hall G, J1	Beate Schwinzer
Good Scientific Practice Part 2: Scientific misconduct and plagiarism (MANDATORY!)	seminar	Tuesday, 29.10.2024	3:00 - 4:30 pm, lecture hall G, J1	Beate Schwinzer
Good Scientific Practice Part 3: Ethics & Statistics (MANDATORY!)	seminar	Wednesday, 30.10.2024	3:00 - 4:30 pm, lecture hall G, J1	Olga Halle, Stephan Halle
Principles of developmental biology and organogenesis 1 - Commitment, differentiation, apoptosis, patterning - Morphogenetic gradients and cell-cell communication - Genetic and epigenetic mechanisms	seminar & tutorial	07.11.2024	3:00 – 4:30 pm	Andreas Kispert
			4:15 – 5:45 pm	
Principles of growth factor signaling 1 - Paracrine and juxtacrine signaling Signaling pathways involved in the regulation of growth	tutorial	14.11.2024	4.15 – 5:15 pm	Rainer Niedenthal
Principles of developmental biology and organogenesis 2 - Model systems in developmental biology - Embryogenesis and fetal development	seminar & tutorial	21.11.2024	3:00 – 4:30 pm Seminar room 76, J06-S0-4150	Andreas Kispert (ist am 14.11. nicht da!
			4:45 – 5:45 pm Seminar room 76, J06-S0-4150	
Principles of stem cell biology 1 - Embryonic derivation of stem cells - Culture methods	seminar & tutorial	28.11.2024	3:00 – 4:30 pm Seminar room 76, J06-S0-4150	Thomas Müller
			4:45 – 5:45 pm Seminar room 76, J06-S0-4150	

Principles of translational bioinformatics <i>Please bring a laptop for the tutorial!</i>	seminar & tutorial	05.12.2024	3:00 – 4:30 pm	Maximilian Fuchs
			4:45 – 5:45 pm	
Principles of cell engineering 1 - Principles of cell engineering 1: - Non-coding RNAs in heart failure - Tool box to validate disease relevant non-coding RNAs - Therapeutic approaches to support cardiac healing -	seminar & tutorial	Wednesday, 18.12.2024	3:00 – 4:30 pm	Jan Fiedler
			4:45 – 5:45 pm	
Principles of stem cell biology 2 - Reprogramming and regeneration - RNA therapeutics in regenerative biology	seminar	09.01.2025	4:15 – 5:45 pm Seminar room Biomedicine, J4, 1031	Amar Deep Sharma
	tutorial	16.01.2025	3:00 – 4:00 pm	
Principles of cell engineering 2 - Transient DNA delivery - Episomal maintenance - Stable DNA delivery - Homologous recombination - Site-specific DNA modification	seminar	16.01.2025	4:15 – 5:45 pm	Axel Schambach
	tutorial	23.01.2025	3:00 – 4:00 pm	
Basic mechanisms of inflammation 2 - Infection & cancer	seminar	23.01.2025	4:15 – 5:45 pm	Ulrich Lehmann-Mühlenhoff
	tutorial	30.01.2025	3:00 – 4:00 pm Seminar room S0, M19	
Synthetic biology and options for regeneration	seminar	30.01.2025	4:15 – 5:45 pm Seminar room S0, M19	Dagmar Wirth
	tutorial	06.02.2025	3:00 – 4:00 pm	
Principles of cell engineering 3 - Cell expansion Bioreactors	seminar	13.02.2025	4:15 – 5:45 pm	Kevin Ullmann
	tutorial	20.02.2025	3:00 – 4:00 pm	
Basics of epigenetic gene regulation: -- Critical principles in embryonic development, tissue regeneration and malignant transformation	seminar	20.02.2025	4:15 – 5:45 pm	Florian Perner
Animal experiments - Introduction to animal experiments Presentation of the animal house	seminar & tutorial	27.02.2025	3:00 – 4:30 pm	André Bleich
The histone-code How complex networks of post-translational modifications control protein complex assembly on chromatin	seminar	27.02.2025	4:15 – 5:45 pm	Florian Perner

2 nd semester: HBZ seminar room (J11-S0-6040) unless otherwise indicated				
Laser technology in medicine - Imaging - Basics of microscopy - Contrast mechanisms - Modern approaches in imaging - Superresolution microscopy	seminar & tutorial	27.03.2025	3:00 – 4:30 pm NIFE*	Alexander Heisterkamp
			4:45 – 5:45 pm NIFE*	
Principles of growth factor engineering - Engineering growth factors and their receptors for regenerative medicine	seminar	03.04.2025	4:15 – 5:45 pm	Michael Morgan
	tutorial	10.04.2025	3:00 – 4:00 pm	
Animal models of human disease 1 - Murine models of human disease	seminar & tutorial	10.04.2025	4:00 – 6:00 pm	Andreas Kispert
Animal models of human disease 2 - Humanized mouse models	seminar & tutorial	08.05.2025	3:00– 5:45 pm	Fatih Noyan
Animal models of human disease 3 - Drosophila melanogaster - Neuromuscular disorders (tutorial)	seminar	15.05.2025	4:15 – 5:45 pm	Halyna Shcherbata
	tutorial	22.05.2025	3.00 – 4:00 pm	
Large animal models in biomedical research - Transgenic pigs - Xenotransplantation - Donor animal engineering	seminar	22.05.2025	4:15 – 5:45 pm	Heiner Niemann
	tutorial	05.06.2025	3:00 – 4:00 pm	
Principles of organ transplantation 1 - Heart, lung, and vessels	seminar	05.06.2025	4:15 – 5:45 pm	Philipp Wand
	tutorial	12.06.2025	3:00 – 4:00 pm	
Cardiovascular tissue engineering: Principles	seminar	12.06.2025	4:15 – 5:45 pm	Birgit Andree
	tutorial	19.06.2025	3:00 – 4:00 pm	
Principles of organ transplantation 2 - Liver, pancreas, and β -cells	seminar	19.06.2025	4:15 – 5:45 pm	Michael Ott
	tutorial	26.06.2025	3:00 – 4:00 pm	
Stem cell based organ regeneration - Heart and clinical translation	seminar	26.06.2025	4:15 – 5:45 pm	Robert Zweigerdt
	tutorial	03.07.2025	3:00 – 4:00 pm	

3 rd semester: HBRS seminar room (I4-01-1140) unless otherwise indicated				
Regenerative approaches: Blood and immunity 1 - Thymus and T-cell development - B-cell development - Flow cytometry	seminar	10.10.2024	4:15 – 5:45 pm	Siegfried Weiß
	tutorial	17.10.2024	3:00 – 4:00 pm	Christine Falk
AAV capsid engineering for in vivo gene therapy	seminar	17.10.2024	4:15 – 5:45 pm	Hildegard Büning
	tutorial	07.11.2024	3:00 – 4:00 pm	Martin Bentler
Regenerative approaches: Blood and immunity 3 - Principles of hematopoietic stem cell transplantation and lymphocyte infusions HLA system and HLA compatibility (tutorial)	seminar	07.11.2024	4:15 – 5:45 pm	Matthias Eder
	tutorial	14.11.2024	3:00 – 4:00 pm	Constanca Figueiredo
Regenerative approaches: Blood and immunity 4 - Genetic disorders of hematopoiesis, Leukemia, and leukemogenic stem cells	seminar	14.11.2024	4:15 – 5:45 pm	Michael Morgan
	tutorial	21.11.2024	3:00 – 4:00 pm	
Regenerative approaches: Liver 1 - Physiology and pathophysiological changes of the liver Liver cell therapy, basics in translation	seminar	21.11.2024	4:15 – 5:45 pm	Michael Ott
	tutorial	28.11.2024	3:00 – 4:00 pm	
Regenerative approaches: Liver 2 - Liver regeneration and stem cells Stem cell-derived hepatocytes	seminar	28.11.2024	4:15 – 5:45 pm	Tobias Cantz
	tutorial	05.12.2024	3:00 – 4:00 pm	Tobias Cantz, Reto Eggenschwiler
Regenerative approaches: Liver 3 - Liver tissue engineering - Artificial liver / extracorporeal devices	seminar	05.12.2024	4:15 – 5:45 pm	Tobias Cantz
	tutorial	12.12.2024	3:00 – 4:00 pm	Tobias Cantz, Reto Eggenschwiler
Non-coding RNAs in cardiovascular disease - Regeneration and therapeutic approaches	seminar	12.12.2024	4:15 – 5:45 pm	Christian Bär
	tutorial	09.01.2025	3:00 – 4:00 pm	Shambhabi Chatterjee
Genotoxicity & monitoring	seminar & tutorial	23.01.2025	3:00 – 4:30 pm	Michael Rothe
			4:45 – 5:45 pm	
Regenerative approaches: Blood and immunity 2 - Embryonic stem cell derived haematopoiesis	seminar & tutorial	30.01.2025	3:00 – 4:30 pm	Nico Lachmann
			4:45 – 5:45 pm	
Molecular Imaging of Regenerative Medicine - Molecular Imaging (seminar) - Tour of the Department of Nuclear Medicine (tutorial)	seminar & tutorial	06.02.2025	3:00 – 4:30 pm	James Thackeray
			4:55 – 5:45 pm	
Cell sorting - Method based seminar - Visit to MHH sorter lab → instrumentation (tutorial)	seminar & tutorial	13.02.2025	3:00 – 4:30 pm	Matthias Ballmaier
			4:45 – 5:45 pm	

Design of clinical trials & regulation	seminar	20.02.2025	4:15 – 5:45 pm	Heiko von der Leyen
Patent protection of academic inventions	seminar	27.02.2025	4:15 – 5:45 pm	Torben Söker, Ascenion GmbH
	tutorial	06.03.2025	3:00 – 4:00 pm	
Immunotoxicity & immunomonitoring	seminar	06.03.2025	4:15 – 5:45 pm	Christine Falk
	tutorial	13.03.2025	3:00 – 4:00 pm	Jenny Kühne

4 th semester: HBRS seminar room (I4-01-1140) unless otherwise indicated				
Regenerative approaches: Lung 1	seminar	24.04.2025	4:15 – 5:45 pm	Ruth Olmer
	tutorial	08.05.2025	3:00 – 4:00 pm	
Regenerative approaches: Lung 2	seminar	08.05.2025	4:15 – 5:45 pm	Carola Voss
	tutorial	15.05.2025	3:00 – 4:00 pm	
Regenerative approaches: Heart and vessels 1 - Protein therapeutics for cardiovascular repair	seminar	15.05.2025	4:15 – 5:45 pm	Marc Reboll
Regenerative approaches: Heart and vessels 2 - Pathogenesis and regeneration of the heart in response to cancer und anti-cancer treatment	seminar	22.05.2025	4:15 – 5:45 pm	Melanie Ricke-Hoch
	tutorial	05.06.2025	3:00 – 4:00 pm	
Regenerative approaches: Heart and vessels 3 - Angiogenesis and arteriogenesis in development and disease	seminar	05.06.2025	4:15 – 5:45 pm	Florian Limbourg
	tutorial	12.06.2025	3:00 – 4:00 pm	
Regenerative Approaches: Nerve - Degeneration and regeneration in the central and peripheral nervous system - Animal models of acute and chronic neurotoxicity - Cell therapy in the nervous system: neuronal and non-neuronal cells - Application modes & Clinical trials	seminar	12.06.2025	4:15 – 5:45 pm	Nadine Thau-Habermann
Conditioning of autologous cells for Tissue Engineered products	seminar	19.06.2025	4:15 – 5:45 pm NIFE*	Cornelia Blume, Sebastian Heene
	tutorial	26.06.2025	3:00 – 4:00 pm NIFE*	
Good Manufacturing Practice (GMP), Advanced Therapy Medicinal Products (ATMP)	seminar & tutorial	26.06.2025	4:15 – 5:45 pm Feodor-Lynen-Str. 21*	Stephan Klöß
Regenerative approaches: Heart and vessels 4 Cardiac differentiation of pluripotent stem cells & myocardial TE	seminar & tutorial	03.07.2025	3:00 – 4:30 pm	Ina Gruh
			4:45 – 5:45 pm	
The Axolotl – an Amphibian Model Organism of Regeneration	seminar & tutorial	10.07.2025	3:00 – 4:30 pm Feodor-Lynen-Str. 21*	Sarah Strauß
			4:45 – 5:45 pm Feodor-Lynen-Str. 21*	
Hannover Unified Biobank (HUB)	seminar & tutorial	17.07.2025	3:00 – 4:30 pm	Norman Klopp
			4:45 – 5:45 pm HUB*	

Additional offers:

Limited number of participants. **Registration required!**

Meet The Expert(s)

From bedside to the lab-side: friends and foes of industrial high throughput qPCR molecular diagnostics	Thomas Müller, Molecular Biology, Synlab Medical Care Unit Weiden	HBZ	FRIDAY, 29.11.2024	10:30 am– 12:00 pm
How to complete your study book	Zulaikha Malik, PhD RegSci Co- ordinator	HBZ	WEDNESDAY, 04.12.2024	03:00 – 04:00 pm
PhD program “Regenerative Sciences” meets STEMCELL Technologies	Sarah Fischer, STEMCELL		2025, tbd	

Method-based Seminars

Tissue regeneration in axolotl	Prayag Murawala, MDIBL	online	November 6th, 2024	04:15-05:45 pm
Isolation and analysis methods for extracellular vesicles	Anton Selich, Exp. Hematology	HBZ	TUESDAY, 09.01.2024	03:00 – 05:00 pm
Application of human stem cells to study cardiac ageing: from development to disease	Shambhabi Chatterjee, IMTTS	HBZ	TUESDAY, 28.01.2025	4:15 – 6:15 pm
Methods for transcript expression and splicing analysis	Dhanya Ramachandran, Molecular Gynecology	HBZ	MONDAY 03.02.2025	4.00 – 6:00 pm
Models of lung inflammation induced by environmental cues	Carola Voss LEBAO	HBZ	February 2025, tbd	
Seq-ing for answers in chromatin & Deciphering transcription: ChIP-seq, ATAC-seq, HiC-seq - Step-by-Step introduction to key methods of chromatin biology & using Next-Generation Sequencing to determine different measures of transcriptional output - from PRO-Seq, GRO-Seq and SLAM-Seq to total RNAseq	Florian Perner, Hematology, Hemostaseology, Oncology and Stem Cell Transplantation	HBRS	FRIDAY, 25.04.2025	03:00 – 05:00

Functional genomics screening: revealing unbiased functional perspectives using pooled CRISPR-Cas9 screens	Florian Perner, Hematology, Hemostaseology, Oncology and Stem Cell Transplantation	HBRS	WEDNESDAY, 30.04.2025	03:00 – 5:00
The cytoplasmic contribution to epigenetics	Dustin Updike, MDIBL	online	May 14th, 2025 online	04:15-05:45 pm
Laser based methods for imaging and manipulation of cells and tissue	Stefan Kalies, IQO, LUH	NIFE	May 2025, tbd	
Mesenchymal stem cells: One for all?	Andrea Hoffmann, NIFE	NIFE	June 2025, tbd	

Locations:

HBZ:

Hans-Borst-Zentrum (HBZ), MHH, building J11, level S0, seminar room 6040

NIFE:

Niedersächsisches Zentrum für Biomedizintechnik, Implantatforschung und Entwicklung - NIFE
(Lower Saxony Centre for Biomedical Engineering, Implant Research and Development)
Stadtfelddamm 34
30625 Hannover