Hannover Medical School

Hannover Biomedical Research School

Curriculum

MD / PhD Program "Molecular Medicine"

PhD Programs "Infection Biology" and "DEWIN": Dynamics of Host-Pathogen Interactions

PhD Program "Regenerative Sciences"

PhD Program "Auditory Sciences"

PhD Program "Epidemiology"

PhD Program BIOMEDAS (Biomedical Data Sciences)

Winter and Summer Semester 2020 / 2021

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Winter and Summer Semester 2020 / 2021

www.mhh.de/hbrs

PhD Curriculum **Hannover Medical School**

Academic Year

Winter Semester 2020 / 2021

Start: October 8th, 2020
(Opening ceremony October, 26th)

End: February 26th, 2021

MD/PhD "Molecular Medicine" intermediate examination: from January 18th to February 26th, 2021 (students organise the date)

PhD "Infection Biology" / "DEWIN" intermediate examination: March 23rd, 2021

PhD "Regenerative Sciences" intermediate examination: by March, 2021

PhD "Epidemiology" and PhD "Auditory Sciences" intermediate examination: To be decided on an individual basis, depending also on status of PhD thesis

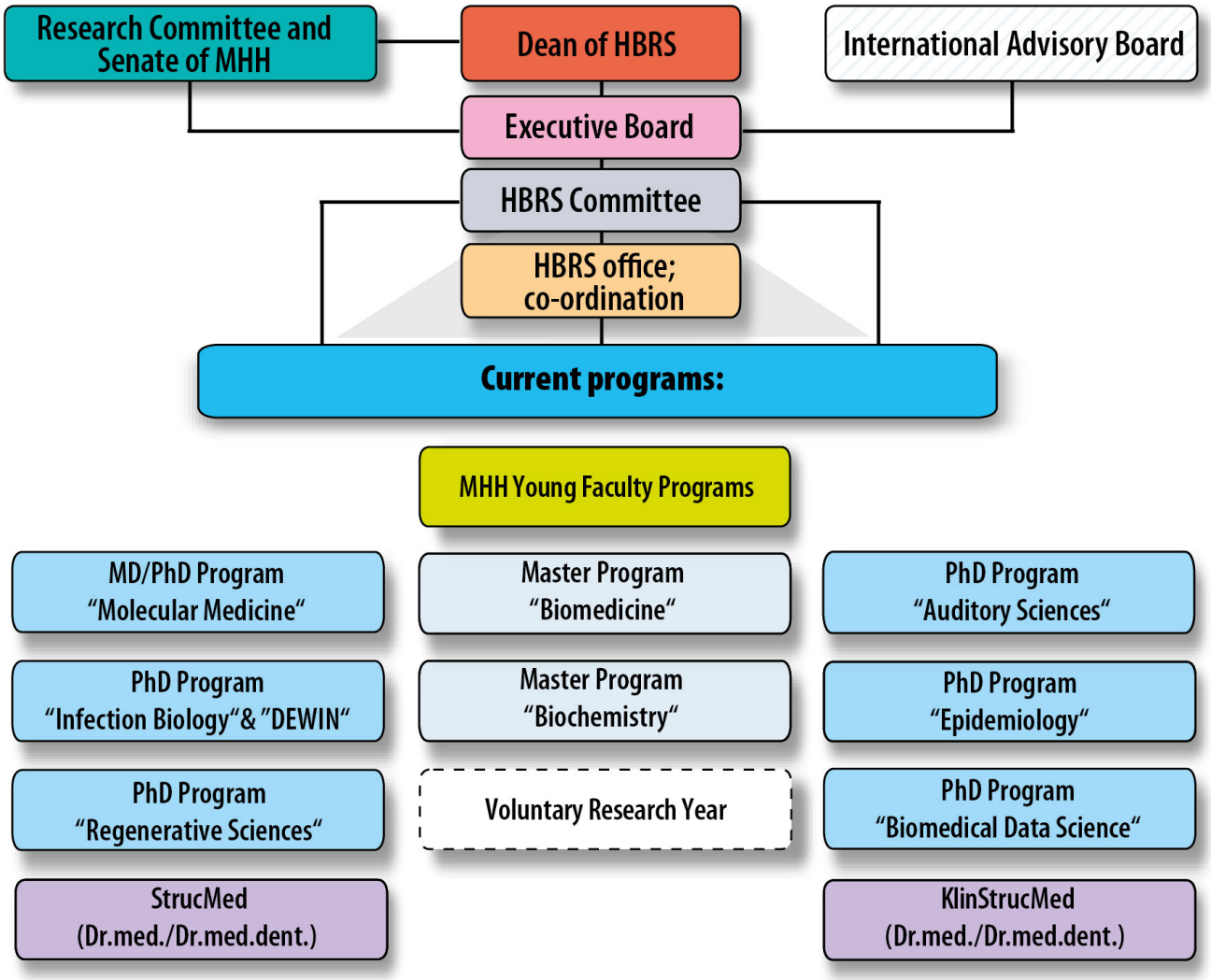
Summer Semester 2021

Start: April 6th, 2021

End: July 22nd, 2021

Organisation of Hannover Biomedical Research School

Hannover Biomedical Research School



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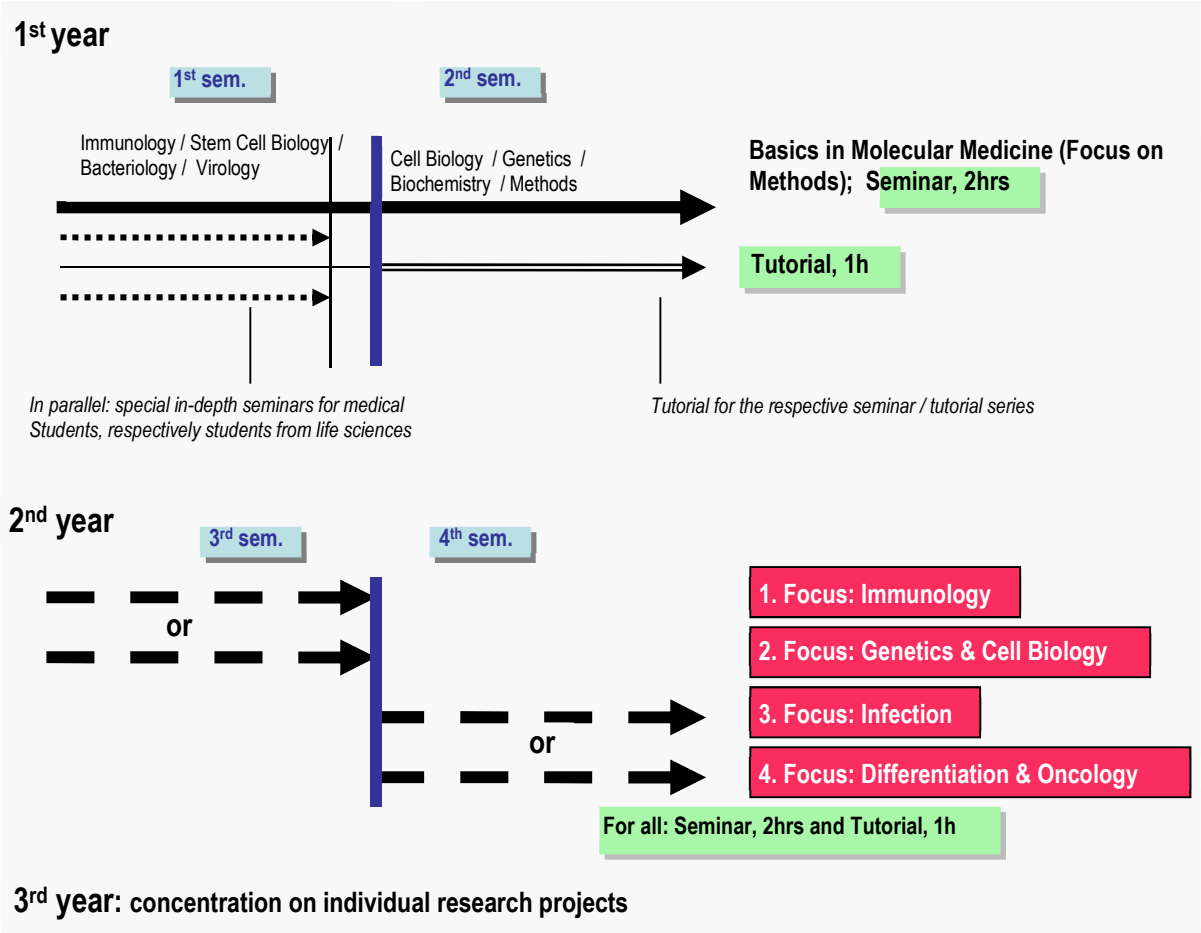
Curriculum MD/PhD "Molecular Medicine"



Structure of the MD/PhD program „Molecular Medicine"

Year 1	Year 2	Year 3

- Sem. + Lect. in basic sciences Monday (4.30 - 6.00 pm; 6 cp)
- Tutorials Mondays; until Christmas separate tutorials for medical students and life scientists (3.15- 4.15 pm; 2 cp)

- Complex and clinical system; choice between the foci Immunology, Infection, Oncology and Differentiation, Cell Biology / Genetics, Biochemistry Mondays, Seminar and Tutorial (3.00 - 6.00 pm; 8 cp)

- 3-year PhD project work (125 cp)
- Three presentations in department over three years (10 cp)
- Three presentations of manuscripts at the departments Journal Club over three years (3 cp)
- Public annual presentation / project report (10 cp)
- Talk / presentation at international congress (2 cp)
- Project-orientated seminars / courses; including practicals (80 h, 8 cp)
- Participation in summer schools / interdisciplinary seminars (e. g. soft skills) / congress (60 h, 6 cp)

Intermediate exam after 18 months

PhD thesis and final exam after 3 years

cp: credit points

Curriculum PhD "Infection Biology" and "DEWIN"

1st Year

1st Semester	2nd Semester
Weekly seminars: Immunology / Microbiology / Virology / Cell Biology	Project reports & special topic lectures

2nd Year

3rd Semester	4th Semester
Presentation of original manuscripts & research topics	Project reports

Structure of the PhD Program "Infection Biology" and "DEWIN"

Year 1	Year 2	Year 3
• Sem. + Lect. Monday (4.30 – 6.00 pm; 6 cp) • Journal Club in students own department (15 h) + attendance of 15 scientific lect. at MHH / HZI / TiHo (such as SFB-Sem. or Immunol. Colloquium; 2 cp)	• Seminar based on reviews and original manuscripts (Monday 4.30 – 6.00 pm) (4 cp) • Presentation of one original manuscript and one research topic during these seminars (4 cp) • Journal Club in students own department (15 h) + attendance of 15 scientific lect. at MHH / HZI / TiHo (such as SFB-Sem. or Immunol. Colloquium; 2 cp)	

- 3-year PhD project work (125 cp)
- Public presentations/project reports (i.e. Retreat) (10 cp)
- Three presentations in department over three years (10 cp)
- Three presentations of manuscripts at the departments Journal Club over three years (3 cp)
- Talk / presentation at international congress (2 cp)
- Practical courses (80 hours) (10 cp)
- Participation in summer schools / interdisciplinary seminars (e. g. soft skills) / congress (20h) (2 cp)

Intermediate exam after 18 months

PhD thesis and final exam after 3 years

cp: credit points

Structure of the PhD-Program "Regenerative Sciences"

Year 1	Year 2	Year 3
• **Seminars + Lectures in basic sciences** Thursday (4.15 - 5.45 pm) • **Tutorials** Thursday (3.00- 4.00 pm)	• **Seminars + Lectures in basic sciences** Thursday (4.15 - 5.45 pm) • **Tutorials** Thursday (3.00 - 4.00 pm)	**Focus on experimental work**

- **3-year PhD project work**
- **Three presentations in department within three years (regular attendance)**
- **3 Presentations of manuscripts at the department's Journal Club within three years (regular participation, i. e. 10 times per year)**
- **Public annual presentation/project report (i. e. retreat)**
- **Talk / presentation at international congress**
- **Project-orientated seminars / courses; including practicals and summer schools (80 h)**
- **Participation in interdisciplinary seminars (e. g. soft skills / congresses) (40h)**

Intermediate exam after 18 months

PhD thesis and final exam after 3 years

You may replace up to 30 hours of the Thursday seminars and tutorials by the additional offers

"Meet the Investigator" or "Method based seminar"

see page 49

Structure of the PhD-Program "Epidemiology"

Year 1	Year 2	Year 3
• research project • accompanying program	• research project • accompanying program	• research project
	Intermediate evaluation after 18 months	Thesis defense, final exam after 3 years

- three year research project
- three project presentations over the three year time period
- active participation in Journal Clubs, i. e. presentation of manuscripts or workshop outcomes
- active participation in scientific conferences, i. e. poster or oral presentation
- annual PhD-Retreats
- soft skill courses
- program modules (lectures, field work, and courses)

→ total accompanying program of a minimum of 300 hrs

Structure of the PhD-Program BIOMEDAS ("Biomedical Data Science")

Year 1	Year 2	Year 3

Three-year research project

Program modules
Attendance in at least five lecture series
Active participation in at least one methodological course

Accompanying program
Active participation in Journal Clubs, i.e. three presentations of manuscripts
Three project presentations of own work in department's seminar
One public presentation of own research work
Talk/presentation at international congress
Active participation in annual retreats, summer schools
Active participation in transferable skill courses

Intermediate exam after 18 month

Thesis and final exam after three years

!!Obligatory!!

Good Scientific Practice

For all HBRS PhD and StrucMed students

Introduction, Overview, Basics, Data Management, Ethics

Lecturers: Dr. Beate Schwinzer, Dr. Stephan Halle and Dr. Olga Halle

Monday, 19 October 2020

5.00 pm First Seminar: Good Scientific Practice
- 6.30 pm Introduction and Data Management; Beate Schwinzer
Lecture Hall D, building J2

Wednesday, 21 October 2020

3.15 pm Second Seminar: Good Scientific Practice
- 4.45 pm Ethics and Statistics; Dr. Stephan and Dr. Olga Halle
Lecture Hall A, building J2

Friday, 23 October 2020

9.00 pm Third Seminar: Good Scientific Practice
- 10.30 am Scientific Misconduct and Plagiarism; Beate Schwinzer
Lecture Hall D, building J2

MD / PhD "Molecular Medicine"

1st Semester

Note: The curriculum of the first year is more orientated towards basics and methods in the different disciplines.

***MD / PhD "Molecular Medicine"*: There are some alternative in-depth seminars / tutorials on Mondays for medical students and students from life sciences until Christmas (see pages 17 / 18) and the respectives tutorials for the seminars.**

Episode I – The hematopoetic wonderland (Focus Immunology I) Online	Online Seminar	Monday, 12.10.2020	4.30 - 6.00 pm	Christine Falk
Innate immunity (Focus Immunology II) Online	Online Seminar	Monday, 19.10.2020	9.00 - 10.30 am	Annett Ziegler
HBRS Opening: Monday, 26 October 2020, 5.00 pm (building J2, lecture hall A)				
B cells and antibody responses (Focus Immunology III) Lecture hall B	Seminar	Monday, 02.11.2020	4.30 - 6.00 pm	Siegfried Weiß
T cells and T cell response (Focus Immunology IV) Lecture hall B	Seminar	Monday, 09.11.2020	4.30 - 6.00 pm	Inga Sandrock
Cytotoxic T cell response (Focus Immunology V) Lecture hall B	Seminar	Monday, 16.11.2020	4.30 - 6.00 pm	Berislav Bosnjak

Now you have the choice between either Oncology *or * Microbiology:

In HBRS Seminar room (Oncology):

Gene expression analysis in cancer research (Focus Oncology I)	Seminar	Monday, 23.11.2020	4.30 - 6.00 pm	Adrian Schwarzer
Genetic modification with lentiviral vector technologies (Focus Oncology II)	Seminar	Monday, 30.11.2020	4.30 - 6.00 pm	Tobias Mätzig
Design and application of shRNA-based methods in biomedical research (Focus Oncology III)	Seminar	Monday, 07.12.2020	4.30 6.00 pm	Marc-Jens Kleppa

Disease modelling and drug discovery with the CRISPR-Cas9 system (Focus Oncology IV)	Seminar	Monday, 14.12.2020	4.30 - 6.00 pm	Dorit Schneider
Induced pluripotent stem cell resources for the treatment of congenital diseases (Focus Oncology V)	Seminar	Monday, 04.01.2021	4.30 - 6.00 pm	Nico Lachmann
Mouse models (Focus Oncology VI)	Seminar	Monday, 11.01.2021	4.30 - 6.00 pm	Arnold Kloos

In lecture hall B (Microbiology):

Intro and Paradigms in Infection Biology: Toxoplasma (Focus Microbiology I)	Seminar	Monday, 23.11.2020	4.30 - 6.00 pm	Dirk Schlüter
Paradigms of Infection Biology: Salmonella (Focus Microbiology II)	Seminar	30.11.2020	4.30 - 6.00 pm	Günter Graßl
Paradigms of Infection Biology: Chlamydia and Listeria (Focus Microbiology III)	Seminar	Monday, 07.12.2020	4.30 - 6.00 pm	Andreas Klos
Paradigms of Infection Biology: Streptococci and Staphylococci (Focus Microbiology IV)	Seminar	Monday, 14.12.2020	4.30 - 6.00 pm	Peter Valentin-Weigand
Paradigms in Infection Biology: Malaria (Focus Microbiology V)	Seminar	Monday, 04.01.2021	4.30 - 6.00 pm	Nishanth Gopala Krishna
Paradigms of Infection Biology: (Focus Microbiology VI) Role of the commensal bacteria for human health	Seminar	Monday, 11.01.2021	4.30 - 6.00 pm	Marius Vital

Location seminar: Lecture hall B, building J2 **Location tutorial: HBRS seminar room 1140, building J4, level 01 (2nd floor)**				
Taxonomy of Viruses and Viral Diseases (Focus Virology I)	Seminar	Monday, 18.01.2021	4.30 - 6.00 pm	Anke Kraft
	Tutorial	Monday, 25.01.2021	3.15 - 4.15 pm	Anke Kraft
Transcription + Replication of DNA viruses (not Herpesviridae) (Focus Virology II)	Seminar	Monday, 25.01.2021	4.30 - 6.00 pm	Jens Bohne
	Tutorial	Monday, 01.02.2021	3.15 - 4.15 pm	Jens Bohne
Virus assembly, maturation and egress (not Flaviviridae / Herpesviridae) (Focus Virology III)	Seminar	Monday, 01.02.2021	4.30 - 6.00 pm	Gisa Gerold
	Tutorial	Monday, 08.02.2021	3.15 - 4.15 pm	Gisa Gerold
Transcription + Replication of RNA viruses (not Flaviviridae) (Focus Virology IV)	Seminar	Monday, 08.02.2021	4.30 - 6.00 pm	Thomas Pietschmann
	Tutorial	Monday, 15.02.2021	3.15 - 4.15 pm	Thomas Pietschmann
Viral Pathogenesis and Host Defense (not Flavi / Herpes) (Focus Virology V)	Seminar	Monday, 15.02.2021	4.30 - 6.00 pm	Abel Viejo-Borbolla
	Tutorial	Monday, 22.02.2021	3.15 - 4.15 pm	Abel Viejo-Borbolla
Oncogenic Viruses (Focus Virology VI)	Seminar	Monday, 22.02.2021	4.30 - 6.00 pm	Kai Kropp
	Tutorial	Monday, 01.03.2021	3.15 - 4.15 pm	Kai Kropp

*For MD / PhD "Molecular Medicine" medical students only: Some more basics in life sciences

As there are not many medical students this year, we will arrange an individual program for you!
Or you visit the tutorials for life scientists.
Mondays, 3.15 - 4.15 pm

** For PhD students from life sciences only: Some basics in medicine / techniques

For MD / PhD "Molecular Medicine" only: **General introduction, lectures, expectations etc.: answering of all last questions, election of class speaker**	Seminar	Monday, 12.10.2020	3.45 - 4.15 pm	Susanne Kruse
Super resolution light microscopy	Seminar	Monday, 19.10.2020	3.15 - 4.15 pm	Rudolf Bauerfeind
No seminar because of opening ceremony		Monday, 26.10.2020		
No seminar because of animal Course		Monday, 02.11.2020		
Electron Microscopy	Seminar	Monday, 09.11.2020	3.15 - 4.15 pm	Stephanie Groos
Gene Technology and Biosafety	Seminar	Monday, 16.11.2020	3.15 - 4.15 pm	Ruth Knorr
Hannover Unified Biobank	Seminar	Monday, 23.11.2020	3.15 - 4.15 pm	Thomas Illig
The Potential of iPSC derived macrophages in human Airway disease - Chances and Challenges in a translational Research Setting	Seminar	Monday, 30.11.2020	3.15 - 4.15 pm	Christine Happle

FACS analysis	Seminar	Monday, 07.12.2020	3.15 - 4.15 pm	Roland Jacobs
Clinical Immunology: Pathogenesis of an autoimmune disease (Lupus erythematosus)	Seminar	Monday, 14.12.2020	3.15 - 4.15 pm	Torsten Witte
Chip cytometry	Seminar	Monday, 04.01.2021	3.15 - 4.15 pm	Christian Hennig
Cell sorting	Seminar	Monday, 11.01.2021	3.15 - 4.15 pm	Matthias Ballmaier
Immunotherapy and cancer vaccines	Seminar	Monday, 18.01.2021	3.15 - 4.15 pm	Tetyana Yevsa
Location: Hannover Biomedical Research School, HBRS seminar room 1140, building J4, level 01 (2nd floor)				

MD / PhD Molecular Medicine

2nd Semester

***MD / PhD MM*: Please attend all of the seminars and tutorials listed below.**

4.) General Cell Biology				
The cell cycle and its implications in diseases (Focus Cell Biology I)	Seminar lecture hall B	Monday, 12.04.2021	4.30 - 6.00 pm	Hansjörg Hauser
	No Tutorial	12.04.2021		
	Tutorial HBRS seminar room	Monday, 19.04.2021	3.15 - 4.15 pm	Hansjörg Hauser
Intracellular trafficking	Seminar lecture hall B	Monday, 19.04.2021	4.30 - 6.00 pm	Theresia Stradal
	Tutorial HBRS seminar room	Monday, 26.04.2021	3.15 - 4.15 pm	Theresia Stradal
The structure of the cell's interior	Seminar lecture hall B	Monday, 26.04.2021	4.30 - 6.00 pm	Theresia Stradal
	Tutorial	Monday, 03.05.2021	3.15 - 4.15 pm	Theresia Stradal
(Now for MD / PhD MM only) All seminars and tutorials in HBRS seminar room				
5.) Biochemistry and Genetics; methods				
Next generation sequencing	**Seminar / tutorial**	Monday, 03.05.2021	4.30 - 6.00 pm	Robert Geffers (HZI)
	No tutorial	Monday, 10.05.2021		
Transcriptomics	**Seminar**	Monday, 10.05.2021	4.30 - 6.00 pm	Oliver Dittrich-Breiholz
(seminar / tutorial in building J3, level 01, room 2020)	**Tutorial**	17.05.2021	3.15 - 4.15 pm	Oliver Dittrich-Breiholz

Strategies to analyse gene function in vivo	Seminar	Monday, 17.05.2021	4.30 - 6.00 pm	Achim Gossler
	Tutorial	31.05.2021	3.15 - 4.15 pm	Achim Gossler
No seminars - public holiday on 24 May				
Physical Methods in Biochemistry: Characterization of Protein - Protein Interactions	Seminar	Monday, 31.05.2021	4.30 - 6.00 pm	Ute Curth
(building J6, level S0, (seminar room 75, room no. 4140)	**Tutorial**	Monday, 07.06.2021	3.15 - 4.15	Ute Curth
Molecular mechanisms of heart failure (building J6, level S0, (seminar room 75, room no. 4140)	**Seminar / Tutorial**	Monday, 07.06.2021	4.30 - 7.00 pm	Arash Haghikia
	No tutorial	Monday, 14.06.2021		
Proteomics	Seminar	Monday, 14.06.2021	4.30 - 6.00 pm	Andreas Pich
Metabolomics	Tutorial	Monday, 21.06.2021	3.15 - 4.15 pm	Andreas Pich
Sick Sinus Syndrome in HCN1-deficient Mice	Seminar	Monday, 21.06.2021	4.30 - 6.00 pm	Christian Wahl -Schott
	Tutorial	Monday, 28.06.2021	3.15 - 4.15 pm	Christian Wahl -Schott
Stem cells	Seminar	Monday, 28.06.2021	4.30 - 6.00 pm	Axel Schambach
	Tutorial	Monday, 05.07.2021	3.15 - 4.15 pm	Axel Schambach
Techniques of miRNAs and lncRNAs	**Seminar / Tutorial**	Monday, 05.07.2021	4.30 - 6.30 pm	Jan Fiedler
Location: Hannover Biomedical Research School, HBRS seminar room 1140, building J4, level 01 (2nd floor)				

MD / PhD program "Molecular Medicine"

3rd Semester

Note: The curriculum of the second year is more orientated towards research and applied aspects in the different disciplines. Every student has the choice between two major foci each semester. You may vary in the choice of modules between the two foci. Please, choose the ones most appropriate for you and your project!

1. Focus: Immunology

Location: Hannover Biomedical Research School, building J4, level 01 (2nd floor), seminar room 1031

1. Immune cells and organs				
Regulation and function of NK cells	Seminar	Monday, 12.10.2020	4.30 - 6.00 pm	Roland Jacobs
	Tutorial	Monday, 19.10.2020	3.30 - 4.15 pm	Roland Jacobs
Inborn errors of immunit-cellular and molecular mechanisms of immunodeficiency and immune dysregulation	Seminar	Monday, 19.10.2020	4.30 - 6.00 pm	Georgios Sogkas
	Tutorial	Monday, 02.11.2020	3.30 - 4.15 pm	Georgios Sogkas
Opening Ceremony of HBRS, Monday, 26 October 2020, 5.00 pm				
Regulation of inflammation in the kidney	Seminar	Monday, 02.11.2020	4.30 - 6.00 pm	Sybille von Vietinghoff
	Tutorial	Monday, 09.11.2020	3.30 - 4.15 pm	Sybille von Vietinghoff

2. Autoimmunity				
Transplantation, Tolerance and Tregs	Seminar	Monday, 09.11.2020	4.30 - 6.00 pm	Tobias Riet
	Tutorial	Monday, 23.11.2020	3.30 - 4.15 pm	Tobias Riet
T and B cell differentiation	**Seminar / Tutorial**	Monday, 16.11.2020	3.00 - 6.00 pm	Fritz Melchers (Basel)

Major histocompatibility complex in tolerogenic cell therapies	Seminar	Monday, 23.11.2020	4.30 - 6.00 pm	Constanza Ferreira de Figueiredo
	Tutorial	Monday, 30.11.2020	3.30 - 4.15 pm	Constanza Ferreira de Figueiredo
3. Allergy and Asthma, Immunological diseases				
Neuroimmune interactions in asthma bronchiale	Seminar	Monday, 30.11.2020	4.30 - 6.00 pm	Armin Braun (Fraunhofer Institute)
	Tutorial	Monday, 07.12.2020	3.30 - 4.15 pm	Armin Braun (Fraunhofer Institute)
Immunodermatology	Seminar	Monday, 07.12.2020	4.30 - 6.00 pm	Lennart Rösner
	Tutorial	Monday, 14.12.2020	3.30 - 4.15 pm	Lennart Rösner
Studying allergic airway inflammation: of mice and man	Seminar	Monday, 14.12.2020	4.30 - 6.00 pm	Olga Halle
	Tutorial	Monday, 04.01.2021	3.30 - 4.15 pm	Adan Jirmo
Adjuvants	Seminar	Monday, 04.01.2021	4.30 - 6.00 pm	Ulrich Kalinke / Annett Ziegler
	Tutorial	Monday, 11.01.2021	3.30 - 4.15 pm	Ulrich Kalinke / Annett Ziegler
4. Signalling and therapy				
TBA	Seminar	Monday, 11.01.2021	4.30 - 6.00 pm	Britta Eiz-Vesper
	Tutorial	Monday, 18.01.2021	3.30 - 4.15 pm	Britta Eiz-Vesper
Inhibitory receptor-ligand interactions as targets for transplantation tolerance	Seminar	Monday, 18.01.2021	4.30 - 6.00 pm	Reinhard Schwinzer
	Tutorial	Monday, 25.01.2021	3.30 - 4.15 pm	Reinhard Schwinzer
The complement system and its regulation	Seminar	Monday, 25.01.2021	4.30 - 6.00 pm	Andreas Klos
	Tutorial	Monday, 01.02.2021	3.30 - 4.15 pm	Andreas Klos

Viral vectors for gene transfer in vitro and vivo	Seminar	Monday, 01.02.2021	4.30 - 6.00 pm	Renata Stripecke
	Tutorial	Monday, 08.02.2021	3.30 - 4.15 pm	Renata Stripecke
Tumor immunity and oncogenic signalling	Seminar	Monday, 08.02.2021	4.30 - 6.00 pm	Christine Falk
	Tutorial	Monday, 15.02.2021	3.30 - 3.15 pm	Christine Falk
HLA-mediated adverse drug reactions	Seminar	Monday, 15.02.2021	4.30 - 6.00 pm	Bade-Döding
	Tutorial	Monday, 22.02.2021	3.30 - 3.15 pm	Bade-Döding
Location: Hannover Biomedical Research School, building J4, level 01 (2nd floor), seminar room 1031				

2. Focus: Genetics and Cell Biology

Location: Hannover Biomedical Research School, building J4, level S0 (ground floor), seminar room S 1400 (right to the main entrance)

1. Techniques and diagnostics / therapy, genetics				
RNA Biology in Eukaryotes	Seminar	Monday, 12.10.2020	4.30 - 6.00 pm	Halyna Shcherbata
	Tutorial	Monday, 19.10.2020	3.30 - 4.15 pm	Halyna Shcherbata
Molecular mechanisms of vascular aging in health and disease	Seminar	Monday, 19.10.2020	4.30 - 6.00 pm	Yulia Kiyan
	Tutorial	Monday, 02.11.2020	3.30 - 4.15 pm	Yulia Kiyan
Opening Ceremony, Monday, 26 October 2020, 5.00 pm, lecture hall R				
Embryonic and somatic cloning in mammals	Seminar	Monday, 02.11.2020	4.30 - 6.30 pm	Heiner Niemann
	Tutorial	Monday, 09.11.2020	3.30 - 4.15 pm	Heiner Niemann
Molecular mechanisms of heart failure	Seminar	Monday, 09.11.2020	4.30 - 6.00 pm	Melanie Ricke-Hoch
	Tutorial	Monday, 16.11.2020	3.30 - 4.15 pm	Melanie Ricke-Hoch

2. Signalling				
Fibulin 6 affects TGF signalling in context of cardia remodelling	Seminar	Monday, 16.11.2020	4.30 - 6.00 pm	Christine Herzog
	Tutorial	Monday, 23.11.2020	3.30 - 4.15 pm	Christine Herzog
Functions of sodium channel Nav1.3 in neutrophil extravasation	Seminar	Monday, 23.11.2020	4.30 - 6.00 pm	Frank Echtermeyer
	Tutorial	Monday, 30.11.2020	3.30 - 4.15 pm	Frank Echtermeyer
Interactions between signalling, metabolic pathways and miRNAs in HCC	Seminar	Monday, 30.11.2020	4.30 - 6.00 pm	Asha Balakrishnan
	Tutorial	Monday, 07.12.2020	3.30 - 4.15 pm	Asha Balakrishnan
Small GTPases as targets of bacterial toxins	Seminar	Monday, 07.12.2020	4.30 - 6.00 pm	Harald Genth
	Tutorial	Monday, 14.12.2020	3.30 - 4.15 pm	Harald Genth
3. Cell Biology and disease				
Glycosylation and diseases	Seminar	Monday, 14.12.2020	4.30 - 6.00 pm	Hans Bakker
	Tutorial	Monday, 04.01.2021	3.30 - 4.15 pm	Hans Bakker
Molecular mechanisms in cardiorenal syndrome	Seminar	Monday, 11.01.2021	**3.00 - 4.30 pm**	Maren Leifheit-Nestler
	Tutorial	Monday, 18.01.2021	3.30 - 4.15 pm	Maren Leifheit-Nestler
Stem cells in renal injury	**Seminar / Tutorial**	Monday, 11.01.2021	4.30 - 6.30 pm	Roland Schmitt
Membrane domains	Seminar	Monday, 25.01.2021	4.30 - 6.00 pm	Robert Lindner
	Tutorial	Monday, 01.02.2021	3.30 - 4.15 pm	Robert Lindner

Micro RNAs from disease mechanisms to therapeutic approaches	Seminar	Monday, 01.02.2021	4.30 - 6.00 pm	Thomas Thum
	Tutorial	Monday, 08.02.2021	3.30 - 4.15 pm	Jan Fiedler
Epigenetics and Cancer	Seminar	Monday, 08.02.2021	4.30 - 6.00 pm	Anke Bergmann
	Tutorial	Monday, 15.02.2021	3.30 - 4.15 pm	Anke Bergmann
Liver fibrogenesis - basic mechanisms and clinical implications	Seminar	Monday, 15.02.2021	4.30 - 6.00 pm	Ingmar Mederacke
	Tutorial	Monday, 22.02.2021	3.30 - 4.15 pm	Ingmar Mederacke
How molecular motors work	**Seminar / Tutorial**	Monday, 22.02.2021	4.30 - 6.30 pm	Dietmar Manstein
Location: Hannover Biomedical Research School, building J4, level S0 (ground floor), seminar room S 1400 (right to the main entrance)				

MD / PhD program "Molecular Medicine"

4th Semester

3. Focus: Infection and Immunity

Location: Hannover Biomedical Research School, building J4, level S0 (ground floor), seminar room S 1400 (right to the main entrance)

1. Innate Immunity; Infection and disease				
Evolutionary aspects of the immune system	Seminar	Monday, 12.04.2021	4.30 - 6.00 pm	Siegfried Weiß
	Tutorial	Monday, 19.04.2021	3.30 - 4.15 pm	Siegfried Weiß
Virus replication, antivirals and resistance	Seminar	Monday, 19.04.2021	4.30 - 6.00 pm	Thomas Pietschmann
	Tutorial	Monday, 26.04.2021	3.30 - 4.15 pm	Thomas Pietschmann
Immune response in HIV	Seminar	Monday, 26.04.2021	4.30 - 6.00 pm	Georg Behrens
	Tutorial	Monday, 03.05.2021	3.30 - 4.15 pm	Georg Behrens
Neutrophils and their regulation by alpha1-antitrypsin	Seminar	Monday, 03.05.2021	4.30 - 6.00 pm	Sabina Janciauskiene
	Tutorial	Monday, 10.05.2021	3.30 - 4.15 pm	Sabina Janciauskiene
Molecular and cellular mechanisms of inflammatory immune responses	Seminar	Monday, 10.05.2021	4.30 - 6.00 pm	Kyeong-Hee Lee
	Tutorial	Monday, 17.05.2021	3.30 - 4.15 pm	Kyeong-Hee Lee
Role of CD8 T cells in acute and chronic infections	Seminar	Monday, 17.05.2021	4.30 - 6.00 pm	Thomas Wirth
	Tutorial	Monday, 31.05.2021	3.30 - 4.15 pm	Thomas Wirth
No seminars on 24 May 2021 due to public holiday				

2. Genetics and disease, infection and immune system, vaccinology				
Genetic engineering of cells and mice for development of disease models	Seminar	Monday, 31.05.2021	4.30 - 6.00 pm	Dagmar Wirth (HZI)
	Tutorial	Monday, 07.06.2021	3.30 - 4.15 pm	Dagmar Wirth (HZI)
Immune sensors	Seminar /	Monday, 07.06.2021	4.30 - 6.00 pm	Roman Fedorov
	Tutorial	Monday, 14.06.2021	3.30 - 4.15 pm	Roman Fedorov
Basic concepts in vaccinology	Seminar	Monday, 14.06.2021	4.30 - 6.00 pm	Carlos Guzman (HZI)
	Tutorial	Monday, 21.06.2021	3.30 - 4.15 pm	Carlos Guzman (HZI)
Innate lymphoid cells and their role in viral infection and vaccine design	Seminar	Monday, 21.06.2021	4.30 - 6.00 pm	Peggy Riese (HZI)
	Tutorial	Monday, 28.06.2021	3.30 - 4.15 pm	Peggy Riese (HZI)
Host-pathogen interactions	Seminar	Monday, 28.06.2021	4.30 - 6.00 pm	Eva Medina (HZI)
	Tutorial	Monday, 05.07.2021	3.30 - 4.15 pm	Eva Medina (HZI)
Location: Hannover Biomedical Research School, building J4, level S0 (ground floor), seminar room S 1400 (right to the main entrance)				

4. Focus: Differentiation and Oncology

Location: Hannover Biomedical Research School, building J4, level 01 (2nd floor), seminar room 1031

1. Development and cancer				
Liquid biopsies and biomarkers	Seminar	Monday, 12.04.2021	4.30 - 6.00 pm	Anja Thorenz
	Tutorial	Monday, 19.04.2021	3.30 - 4.15 pm	Anja Thorenz
Liver organogenesis and hepatic stem cell	Seminar	Monday, 19.04.2021	4.30 - 6.00 pm	Michael Ott
	Tutorial	Monday, 26.04.2021	3.30 - 4.15 pm	Michael Ott
Epigenetics in cancer	Seminar	Monday, 26.04.2021	4.30 - 6.00 pm	Ulrich Lehmann-Mühlenhoff
	Tutorial	Monday, 03.05.2021	3.30 - 4.15 pm	Ulrich Lehmann-Mühlenhoff
2. Stem cells and cancer				
Onco-Immunology: Translational research at the interface between immunology and oncology	Seminar	Monday, 03.05.2021	4.30 - 6.00 pm	Friedrich Feuerhake
	Tutorial	Monday, 10.05.2021	3.30 - 4.15 pm	Friedrich Feuerhake
TBA	Seminar	Monday, 10.05.2021	4.30 - 6.00 pm	Courtney Lai
	Tutorial	Monday, 17.05.2021	3.30 - 4.15 pm	Courtney Lai
Adoptive T cell therapies in hematopoietic stem cell transplantation	Seminar	Monday, 17.05.2021	4.30 - 6.00 pm	Martin Sauer
	Tutorial	Monday, 31.05.2021	3.30 - 4.15 pm	Martin Sauer

No seminars on 24 May 2021, public holiday				
PH-regulation in cancer cell motility	Seminar	Monday, 31.05.2021	4.30 - 6.00 pm	Christian Stock
	Tutorial	Monday, 07.06.2021	3.30 - 4.15 pm	Christian Stock
3. Signalling (and cancer)				
Oncogenes and myeloproliferation	Seminar	Monday, 07.06.2021	4.30 - 6.00 pm	Matthias Eder
	Tutorial	Monday, 14.06.2021	3.30 - 4.15 pm	Matthias Eder
T-box genes in development and disease	Seminar	Monday, 14.06.2021	4.30 - 6.00 pm	Andreas Kispert
	Tutorial	Monday, 21.06.2021	3.30 - 4.15 pm	Andreas Kispert
The key role of mRNA export machinery in cell differentiation and cancer formation	Seminar	Monday, 21.06.2021	4.30 - 6.00 pm	Doan Duy Hai Tran
	Tutorial	Monday, 28.06.2021	3.15 - 4.15 pm	Doan Duy Hai Tran
Molecular basis of leukemogenesis	Seminar	Monday, 28.06.2021	4.30 - 6.00 pm	Adrian Schwarzer
	Tutorial	Monday, 05.07.2021	3.15 - 4.15 pm	Adrian Schwarzer
Location: Hannover Biomedical Research School, building J4, level 01 (2nd floor), seminar room 1031				

PhD programs "Infection Biology / DEWIN"

1st Semester

Tutorials: Mondays, 15:15-16:15 hrs
Location: Room 1140, Building J4, level1

Seminars: Mondays, 16:30-18:00 hrs
Location: Lecture Hall B, Building J2

DATE	TYPE	FOCUS	LECTURER	SUBJECT
12.10.2020	Online Seminar	Immunology I	Falk	Episode I - The hematopoetic wonderland
28.10.2020	Online Seminar	Immunology II	Ziegler	Innate Immunity
26.10.2020	HBRS Opening: 17:00 - 19:00 hrs (Building J2, Lecture Hall A)			
02.11.2020	Seminar	Immunology III	Weiß	B cells and antibody responses
09.11.2020	Seminar	Immunology IV	Sandrock	T cells and T cell response
16.11.2020	Seminar	Immunology V	Bosnjak	Cytotoxic T cell response
23.11.2020	Seminar	Microbiology I	Schlüter	Intro and Paradigms in Infection Biology: Toxoplasma
30.11.2020	Seminar	Microbiology II	Graßl	Paradigms in Infection Biology: Salmonella
07.12.2020	Seminar	Microbiology III	Klos	Paradigms in Infection Biology: Chlamydia and Listeria

DATE	TYPE	FOCUS	LECTURER	SUBJECT
14.12.2020	Seminar	Microbiology IV	Valentin-Weigand	Paradigms in Infection Biology: Streptococci and Staphylococci
04.01.2021	Seminar	Microbiology V	Gopala Krishna	Paradigms in Infection Biology: Malaria
11.01.2021	Seminar	Microbiology VI	Vital	Role of the commensal bacteria for human health
18.01.2021	Seminar	Virology I	Kraft	Taxonomy of Viruses and Viral Diseases
25.01.2021	Seminar	Virology II	Bohne	DNA Virus Transcription + Replication (not Herpesviridae)
01.02.2021	Seminar	Virology III	Gerold	Virus assembly, maturation and egress (not Flavi/Herpesviridae)
08.02.2021	Seminar	Virology IV	Pietschmann	RNA Virus Transcription + Replication (not Flaviviridae)
15.02.2021	Seminar	Virology V	Viejo-Borbolla	Viral Pathogenesis and Host Defenses (not Flavi/Herpesviridae)
22.02.2021	Seminar	Virology VI	Kropp	Oncogenic Viruses

PhD Programs "Infection Biology / DEWIN"

2nd Semester

Tutorials: Mondays, 15:15-16:15 hrs
Location: Room 1140, Building J4, level1

Seminars: Mondays, 16:30-18:00 hrs
Location: Lecture Hall B, Building J2

DATE	TYPE	FOCUS	LECTURER	SUBJECT
12.04.2021	Seminar	Cell Biology I	Hauser	The cell cycle and its implication in disease
19.04.2021	Seminar	Cell Biology II	Stradal	Intracellular trafficking
26.04.2021	Seminar	Cell Biology III	Stradal	The structure of the cell's interior

Times & Location: Mondays, 16:30-18:00 hrs, MHH, TPFZ/I-11, Seminar Room S0-1420

DATE	FOCUS	SUPERVISOR	STUDENT	SUBJECT
03.05.2021	Project Presentation			
	Project Presentation			
10.05.2021	Project Presentation			
	Project Presentation			
17.05.2021	Project Presentation			
	Project Presentation			
25.05.2021 **Tuesday!**	Project Presentation			
	Project Presentation			

DATE	FOCUS	SUPERVISOR	STUDENT	SUBJECT
31.05.2021	Project Presentation			
	Project Presentation			
07.06.2021	Project Presentation			
	Project Presentation			
14.06.2021	Project Presentation			
	Project Presentation			
21.06.2021	Project Presentation			
	Project Presentation			
28.06.2021	Project Presentation			
	Project Presentation			
05.07.2021	Project Presentation			
	Project Presentation			
12.07.2021	Project Presentation			
	Project Presentation			

PhD Programs "Infection Biology / DEWIN"

3rd Semester

Times & Location: Mondays, 16:30-18:00 hrs, MHH, TPFZ/I-11, Seminar Room S0-1420

DATE	FOCUS	SUPERVISOR	STUDENT	SUBJECT
12.10.2020	Topic	Viejo-Borbolla	Shyam Jandhyala	Viral genes driving oncogenesis by KSHV
	Original Paper		Wang	Cohen et al., 2020, Proc Natl Acad Sci USA, Abortive herpes simplex virus infection of nonneuronal cells results in
19.10.2020	Topic	Weiß	Aringo	B cell responses during infection
	Original Paper		Steppich	Kreer et al., 2020, Cell, Longitudinal Isolation of Potent Near-Germline SARS-CoV-2-Neutralizing Antibodies from
26.10.2020	HBRS Opening: 17:00 - 19:00 hrs (Building J2, Lecture Hall A)			
02.11.2020	Topic	Messerle	Azadegan	Targets of directly acting antivirals against HIV
	Original Paper		Frericks	Wuerth et al., 2020, mBio, eIF2B as a Target for Viral Evasion of PKR-Mediated Translation Inhibition
09.11.2020	Topic	Tümmler	Bouherauoua	Bacterial Biofilms
	Original Paper		Spaic	Sankaran et al., 2019, NPJ Biofilms Microbiomes, Single microcolony
16.11.2020	Topic	Viemann	Tapken	Intestinal immunity to pathogens
	Original Paper		Palacios Pedrero	Jarret et al., 2020, Cell, Enteric Nervous System-Derived IL-18 Orchestrates Mucosal Barrier Immunity
23.11.2020	Topic	Stein	Winkler	Cellular proteins serving as entry receptors for flaviviruses
	Original Paper		Matthaei	Ramanathan et al., 2020, mBio, A Sensitive Yellow Fever Virus Entry
30.11.2020	Topic	Witte	Willers	Anti-viral therapies
	Original Paper		Krajewski	Williamson et al., 2020, Nature, Clinical benefit of remdesivir in rhesus macaques infected with SARS-CoV-2

DATE	FOCUS	SUPERVISOR	STUDENT	SUBJECT
07.12.2020	Topic	Falk	Siemes	Different Vaccine Strategies considered against CoVID-19
	Original Paper		Winkler	Gussow et al., 2020, Proc Natl Acad Sci USA, Genomic determinants of pathogenicity
14.12.2020	Topic	Pietschmann; (evtl. Chris Lauber)	Carriquí Madroñal	Cellular restriction factors active against HIV
	Original Paper		Azadegan	Naipauer et al., 2020, PLoS Pathog, High-throughput sequencing analysis of
04.01.2021	Topic	Förster	Palacios Pedrero	Differentiation and function of T-helper cells during infection
	Original Paper		Aringo	DiToro et al., 2018, Science, Differential IL-2 expression defines developmental
11.01.2021	Topic	Winstel	Mastella Botelho	Bacterial virulence factors
	Original Paper		Chopra	Boguslawski et al., 2020, Sci. Adv., Exploiting species specificity to
18.01.2021	Topic	Bernhardt	Khanal	The inflammasome and its modulation by bacterial and viral infections
	Original Paper		Willers	Chen et al., 2019, Frontiers in Microbiology, Severe Acute Respiratory
25.01.2021	Topic	Gerold	Frericks	The role of type I interferon signaling in RNA virus-host interactions
	Original Paper		Siemes	Le-Trilling et al., 2020, Cell Rep, The Human Cytomegalovirus pUL145 -
01.02.2021	Topic	Kalinke	Steppich	Innate immune responses against infections: PAMPs, TLR, NOD
	Original Paper		Tapken	
08.02.2021	Topic	Sodeik (evtl. Kai Kropp)	Wang	Molecular mechanisms of HSV-1 latency and reactivation
	Original Paper		Shyam Jandhyala	Gramolelli et al., 2020, Cancer Res., Oncogenic Herpesvirus Engages
15.02.2021	Topic	Lochner	Chopra	Negative regulation of immune responses
	Original Paper		Tantawy	Al-Nabhani et al., 2019, Immunity, A Weaning Reaction to Microbiota is
22.02.2021	Topic	Halle	Krajewski	The role of NK cells in fighting infections
	Original Paper		Khanal	Prager et al., 2019, J. Exp. Med., NK cells switch from granzyme B to death receptor–mediated cytotoxicity during

PhD Programs "Infection Biology / DEWIN"

4th Semester

Times & Location: Mondays, 16:30-18:00 hrs, MHH, TPFZ/I-11, Seminar Room S0-1420

DATE	FOCUS	SUPERVISOR	STUDENT	SUBJECT
12.04.2021	Topic	Graßl	Spaic	Immune escape mechanisms of bacteria, Antimicrobial Resistance
	Original Paper		Mastella Botelho	Kawai et al., 2018, Cell, Lysozyme Counteracts β-Lactam Antibiotics by Promoting the Emergence of L-Form Bacteria
19.04.2021	Topic	Sheldon	Matthaei	Approaches to identify the interactome of viral proteins
	Original Paper		Carriquí Madroñal	Su et al., 2020, Proc Natl Acad Sci USA, DNA-induced 2'3'-cGAMP enhances haplotype-specific human STING cleavage by dengue protease.
26.04.2021	Topic	Gopala	Tantawy	Bacterial Pathogenesis
	Original Paper		Bouherauoua	Alix et al., 2020, Cell Host & Microbe, The Tumour Suppressor TMEM127 is a Nedd4-Family E3 Ligase
03.05.2021	Project Presentation	Kalinke	Aringo	Comparative analysis of vaccine- and pathogen-induced antibody responses
	Project Presentation	Kalinke	Krajewski	Impact of HCMV infection on antigen presentation by primary human antigen presenting cells
10.05.2021	Project Presentation	Pietschmann	Matthaei	Interaction between hepatitis C virus and lipoproteins and its role for infection and viral persistence
	Project Presentation	Pietschmann	Winkler	Mechanisms and Determinants of Hepatitis C Virus Tropism
17.05.2021	Project Presentation	Messerle	Siemes	Effects of NKG2D ligand-expressing cytomegaloviruses on CMV-specific T cells
	Project Presentation	Viejo-Borbolla	Wang	The role of epigenetic modifications in varicella zoster virus latency, reactivation and pathogenesis
25.05.2021 **Tuesday!**	Project Presentation	Halle	Takpen	Optimizing immune cell-based protection against cytomegalovirus (CMV) infections in preclinical models
	Project Presentation	Viemann	Willers	Impact of microbiota on the development of the immune system in preterm neonates and their susceptibility towards respiratory and septic diseases

DATE	FOCUS	SUPERVISOR	STUDENT	SUBJECT
31.05.2021	Project Presentation	Schulz	Azadegan	Identifying novel druggable targets in the herpesviral life cycle
	Project Presentation	Schulz	Shyam Jandhyala	Regulation of the latent Kaposi Sarcoma Herpesvirus Genome
07.06.2021	Project Presentation	Häußler	Bouheraoua	Investigation of the bi-directional interaction of *Pseudomonas aeruginosa* and the human host microenvironment in development of persistent infection in the lower respiratory tract of humans
	Project Presentation	Häußler	Mastella Botelho	Unravelling molecular mechanisms of resistance in the opportunistic pathogen *Pseudomonas aeruginosa*
14.06.2021	Project Presentation	Cornberg	Steppich	Comprehensive characterization of T cell subsets in patients with chronic hepatitis B who stop long-term antiviral therapy with Nucelos(t)ide analogues
	Project Presentation	Wedemeyer / Ott / Sharma	Khanal	Identification and functional evaluation of microRNAs during hepatitis delta virus infection
21.06.2021	Project Presentation	Schlüter	Chopra	Regulation of myeloid cell immune responses by SOCS2 in infectious diseases
	Project Presentation	Winstel	Tantawy	Unravelling a new virulence strategy by *Staphylococcus aureus*
28.06.2021	SFB900 / RESIST Symposium Project Presentation			
12.07.2021	Project Presentation	Gerold	Carriquí Madroñal	The impact of human genetic variants on hepatitis C virus cell entry
	Project Presentation	Sheldon	Frericks	Viral determinants of hepatitis C virus resistance to interferon and their relevance for broad resistance to HCV specific antivirals

Retreats:
June 28th / 29th, 2021 for all Classes

Intermediate Exam for the Class of 2019:
March 23rd, 2021

PhD Final Exams:
January 29th, 2021
July 9th, 2021

PhD Program "Regenerative Sciences"

Times:
Tutorials: **Thursdays, 3.00 – 4.00 pm**
Seminars: **Thursdays, 4.15 – 5.45 pm**

Locations:
Semester 1 & 2 MHH, building J04, level 01, HBRS seminar room 1140
Semester 3 & 4 MHH, building J11, Hans-Borst-Zentrum (HBZ), level S0, seminar room 6040

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

LUH*:
Prof. Dr. Peter Behrens (Seminar & tutorial: 15.04.2021, 2nd semester)
Leibniz Universität Hannover (LUH)
Institute of Inorganic Chemistry
Callinstrasse 9, 30167 Hannover

Feodor-Lynen Str. 21*:
Dr. Sarah Strauß (Seminar & tutorial: 03.06.2021, 4th semester)
Ambystoma Mexicanum Bioregeneration Center & Spider Silk Laboratory
Feodor-Lynen Str. 21, 30625 Hannover
Building M05 level S0 seminar room 0110

Dr. Stephan Klöß (Seminar & tutorial: 01.07.2021, 4th semester)
ATMP-GMP-DU
Building 05, level 4
Feodor-Lynen-Straße 21, 30625 Hannover
Seminar: Building 05, level 3
Tutorial: Building 05, level 1

Please note: No seminars and tutorials on Thursday, May 13th, 2021 (Public holiday: Ascension Day "Christi Himmelfahrt").

1st semester				
Introductory lecture - Welcoming speech - The curriculum of RegSci & HBRS - Q & A - Principles of regenerative sciences and the REBIRTH approach	seminar	08.10.2020	4.15 – 5.15 pm	Ulrich Martin
Principles of growth factor signaling 1 - Paracrine and juxtacrine signaling - Signalling pathways involved in the regulation of growth	seminar	15.10.2020	4.15 – 5.45 pm	Rainer Niedenthal
	tutorial	22.10.2020	3.00 – 4.00 pm	
Principles of growth factor signaling 2 - Cytokines, hormones, and their receptors	seminar	22.10.2020	4.15 – 5.45 pm	Michael Morgan
	tutorial	29.10.2020	3.00 – 4.00 pm	
Basic mechanisms of inflammation 1 - Innate and adaptive immunity and differentiation	seminar	29.10.2020	4.15 – 5.45 pm	Siegfried Weiß
	tutorial	05.11.2020	3.00 – 4.00 pm	
Principles of developmental biology and organogenesis 1 - Commitment, differentiation, apoptosis, patterning - Morphogenetic gradients and cell-cell communication - Genetic and epigenetic mechanisms	seminar	05.11.2020	4.15 – 5.45 pm	Andreas Kispert
	tutorial	12.11.2020	3.00 – 4.00 pm	
Principles of developmental biology and organogenesis 2 - Model systems in developmental Biology - Embryogenesis and fetal development	seminar	12.11.2020	4.15 – 5.45 pm	Achim Gossler
	tutorial	19.11.2020	3.00 – 4.00 pm	
Principles of stem cell biology 1 - Embryonic derivation of stem cells - Culture methods	seminar & tutorial	26.11.2020	3.00 – 4.30 pm	Thomas Müller
			4.45 – 5.45 pm	
Principles of stem cell biology 2 - Tumor stem cells and mechanisms of transformation - Principles of cell cycle regulation	seminar	03.12.2020	4.15 – 5.45 pm	Amar Deep Sharma
	tutorial	10.12.2020	3.00 – 4.00 pm	
Principles of chromosomal instability	seminar	10.12.2020	4.15 – 5.45 pm	Gudrun Göhring
	tutorial	17.12.2020	3.00 – 4.00 pm	
Principles of cell engineering 3 - Cell expansion Bioreactors	seminar	07.01.2021	4.15 – 5.45 pm	Robert Zweigerdt
	tutorial	14.01.2021	3.00 – 4.00 pm	

Cellular senescence, tumor suppression and organismal aging	seminar	14.01.2021	4.15 – 5.45 pm	Anette Melk
	tutorial	21.01.2021	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	21.01.2021	4.15 – 5.45 pm	Axel Schambach
	tutorial	28.01.2021	3.00 – 4.00 pm	
Basic mechanisms of inflammation 2 - Infection & cancer	seminar & tutorial	04.02.2021	3.00 – 4.30 pm	Ulrich Lehmann-Mühlenhoff
			4.45 – 5.45 pm	
Synthetic biology and options for regeneration	seminar	11.02.2021	4.15 – 5.45 pm	Dagmar Wirth
	tutorial	18.02.2021	3.00 – 4.00 pm	
Principles of cell engineering 1 - MicroRNAs (miRNA) and downstream targets - Technical approaches - Use of miRNA target identification software - Design of miRNA - Luciferase-gene reporter assays (tutorial)	seminar	18.02.2021	4.15 – 5.45 pm	Thomas Thum
	tutorial	25.02.2021	3.00 – 4.00 pm	Jan Fiedler

PhD Program "Regenerative Sciences"

2nd semester				
Principles of materials sciences for regenerative medicine 1♦ - Nanoparticles in medicine (seminar) - Nanomanufacturing (tutorial)	seminar & tutorial	08.04.2021	3.00 – 4.30 pm **NIFE***	Annette Hoffmeister
			4.45 – 5.45 pm **NIFE***	
Principles of materials sciences for regenerative medicine 2♦ Introduction to biomaterials - Ceramic materials (seminar) - Chemistry (tutorial)	seminar & tutorial	15.04.2021	3.00 - 4.30 pm **LUH, Callinstr. 9***	Peter Behrens
			4.45 – 5.45 pm **LUH, Callinstr. 9***	
Principles of materials sciences for regenerative medicine 3♦ - Polymeric and metallic materials (seminar) - Cell-biomaterial interactions (seminar) - Scaffold technologies (tutorial)	seminar	22.04.2021	4.15 – 5.45 pm **NIFE***	Birgit Glasmacher
	tutorial	29.04.2021	3.00 – 4.00 pm **NIFE***	Oleksandr Gryshkov
Principles of growth factor engineering - Engineering growth factors and their receptors for regenerative medicine	seminar & tutorial	06.05.2021	3.00 - 4.30 pm	Michael Morgan
			4.45 – 5.45 pm	
Laser technology in medicine 1 - Imaging - Basics of microscopy - Contrast mechanisms - Modern approaches in imaging - Superresolution microscopy	seminar & tutorial	20.05.2021	3.00 – 4.30 pm **NIFE***	Alexander Heisterkamp
			4.45 – 5.45 pm **NIFE***	
Laser technology in medicine 2 - Laser manipulation/machining - Surface treatment, structuring, polymerization - Laser-tissue interaction - Laser manipulation of cells	seminar & tutorial	27.05.2021	3.00 – 4.30 pm **NIFE***	Boris Chichkov
			4.45 – 5.45 pm **NIFE***	
Animal models of human disease 1 - Murine models of human disease	seminar & tutorial	03.06.2021	3.00 – 4.30 pm	Achim Gossler
			4.45 – 5.45 pm	
Principles of organ transplantation 1 - Heart, lung, and vessels	seminar & tutorial	10.06.2021	3.00 – 4.30 pm	Jawad Salman
			4.45 – 5.45 pm	
Cardiovascular tissue engineering: Principles	seminar	17.06.2021	4.15 – 5.45 pm	Andres Hilfiker
	tutorial	24.06.2021	3.00 – 4.00 pm	
Animal models of human disease 2 - Transgenic pigs - Xenotransplantation - Donor animal engineering	seminar	24.06.2021	4.15 – 5.45 pm	Heiner Niemann
	tutorial	01.07.2021	3.00 – 4.00 pm	

Animal models of human disease 3 - Primate models - Humanized mouse models	seminar	01.07.2021	4.15 – 5.45 pm	Thomas Moritz
	tutorial	08.07.2021	3.00 – 4.00 pm	
Principles of organ transplantation 2 - Liver, pancreas, and ß-cells	seminar	08.07.2021	4.15 – 5.45 pm	Michael Ott
	tutorial	15.07.2021	3.00 – 4.00 pm	
Stem cell based organ regeneration - Heart and ß-cells - Clinical translation	seminar	15.07.2021	4.15 – 5.45 pm	Robert Zweigerdt
	tutorial	22.07.2021	3.00 – 4.00 pm	

♦Literature for „Principles of materials sciences for regenerative medicine", part 1, 2, and 3:
Biomaterials Science (Third Edition), BD Ratner, AS Hoffman, FJ Schoen, JE Lemons (eds.) Elsevier, Amsterdam 2013; available online, MHH library

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

LUH, Callinstr. 9*:

Prof. Dr. Peter Behrens (Seminar & tutorial: 15.04.2021)
Leibniz Universität Hannover (LUH)
Institute of Inorganic Chemistry
Callinstrasse 9, 30167 Hannover

PhD Program "Regenerative Sciences"

3rd semester				
Regenerative approaches: Blood and immunity 1 - Thymus and T-cell development - B-cell development - Flow cytometry	seminar	15.10.2020	4.15 – 5.45 pm	Siegfried Weiß
	tutorial	22.10.2020	3.00 – 4.00 pm	Christine Falk
Regenerative approaches: Blood and immunity 2 - Embryonic stem cell derived hematopoiesis	seminar & tutorial	05.11.2020	3.00 – 4.30 pm	Nico Lachmann
			4.45 – 5.45 pm	
Regenerative approaches: Blood and immunity 3 - Principles of hematopoietic stem cell transplantation and lymphocyte infusions HLA system and HLA compatibility (tutorial)	seminar	12.11.2020	4.15 – 5.45 pm	Matthias Eder
	tutorial	19.11.2020	3.00 – 4.00 pm	Constanca Figueiredo
Regenerative approaches: Liver 1 - Physiology and pathophysiological changes of the liver - Liver cell therapy, basics in translation	seminar	19.11.2020	4.15 – 5.45 pm	Michael Ott
	tutorial	26.11.2020	3.00 – 4.00 pm	
Regenerative approaches: Liver 2 - Liver regeneration and stem cells Stem cell-derived hepatocytes	seminar	26.11.2020	4.15 – 5.45 pm	Tobias Cantz
	tutorial	03.12.2020	3.00 – 4.00 pm	Tobias Cantz / Reto Eggenschwiler
Regenerative approaches: Blood and immunity 4 - Genetic disorders of hematopoiesis, Leukemia, and leukemogenic stem cells	seminar	03.12.2020	4.15 – 5.45 pm	Axel Schambach
	tutorial	10.12.2020	3.00 – 4.00 pm	
Non-coding RNAs in cardiovascular disease - Regeneration and therapeutic approaches	seminar	10.12.2020	4.15 – 5.45 pm	Christian Bär
	tutorial	17.12.2020	3.00 – 4.00 pm	Jan Fiedler
Regenerative approaches: Liver 3 - Liver tissue engineering - Artificial liver / extracorporal devices	seminar	17.12.2020	4.15 – 5.45 pm	Tobias Cantz
	tutorial	07.01.2021	3.00 – 4.00 pm	Tobias Cantz / Reto Eggenschwiler
AAV capsid engineering for in vivo gene therapy	seminar	07.01.2021	4.15 – 5.45 pm	Hildegard Büning
	tutorial	14.01.2021	3.00 – 4.00 pm	
Immunotoxicity & immunomonitoring	seminar	21.01.2021	4.15 – 5.45 pm	Christine Falk
	tutorial	28.01.2021	3.00 – 4.00 pm	

Genotoxicity & monitoring	seminar & tutorial	04.02.2021	3.00 – 4.30 pm 4.45 – 5.45 pm	Michael Rothe
Animal experiments - Introduction to animal experiments - Presentation of the animal house	seminar & tutorial	11.02.2021	3.00 – 4.30 pm 4.45 – 5.45 pm	André Bleich
Measuring through the microscope - Quantitative structural assessment of organs, tissues and cells - Pitfalls of microscopic morphometry and basic concepts of design-based stereology (seminar) - Applications of stereology to the heart and the lung (tutorial)	seminar & tutorial	18.02.2021	3.00 – 4.30 pm 4.45 – 5.45 pm	Christian Mühlfeld
Molecular Imaging of Regenerative Medicine - Molecular Imaging (seminar) - Tour of the Department of Nuclear Medicine (tutorial)	seminar tutorial	25.02.2021 04.03.2021	4.15 – 5.45 pm 3.00 – 4.00 pm	James Thackeray
Cell sorting - Method based seminar - Visit to MHH sorter lab → instrumentation (tutorial)	seminar tutorial	04.03.2021 11.03.2021	4.15 – 5.45 pm 3.00 – 4.00 pm	Matthias Ballmaier
Regenerative approaches: Blood and immunity 5 - Antigen presenting cells	seminar tutorial	11.03.2021 18.03.2021	4.15 – 5.45 pm 3.00 – 4.00 pm	Renata Stripecke
Design of clinical trials & regulation	seminar	18.03.2021	4.15 – 5.45 pm	Heiko von der Leyen

II

PhD Program "Regenerative Sciences"

4th semester				
Regenerative approaches: Heart and vessels 1 - Basics in Cardiology - Protein therapeutics for cardiovascular repair (tutorial)	seminar	**TUESDAY 13.4.2021**	4.15 – 5.45 pm	Kai Wollert
	tutorial	15.04.2021	3.00 – 4.00 pm	Marc Reboll
Regenerative Approaches: Heart and vessels 2 - Pathogensis and regeneration of the heart in response to cancer und anti-cancer treatment	seminar	15.04.2021	4.15 – 5.45 pm	Denise Hilfiker-Kleiner
	tutorial	22.04.2021	3.00 – 4.00 pm	
Regenerative approaches: Heart and vessels 3 - Angiogenesis and arteriogenesis in development and disease	seminar	22.04.2021	4.15 – 5.45 pm	Florian Limbourg
	tutorial	29.04.2021	3.00 – 4.00 pm	
Regenerative approaches: Heart and vessels 4 - Cardiac differentiation of pluripotent stem cells & myocardial TE	seminar	29.04.2021	4.15 – 5.45 pm	Ina Gruh
	tutorial	06.05.2021	3.00 – 4.00 pm	
Regenerative approaches: Lung 1	seminar	06.05.2021	4.15 – 5.45 pm	Ruth Olmer
	tutorial	20.05.2021	3.00 – 4.00 pm	
Regenerative approaches: Lung 2	seminar	20.05.2021	4.15 – 5.45 pm	
	tutorial	27.05.2021	3.00 – 4.00 pm	
The Axolotl – an Amphibian Model Organism of Regeneration	seminar & tutorial	03.06.2021	3.00 – 4.30 pm **Feodor-Lynen-Str. 21***	Sarah Strauß
			4.45. – 5.45 pm **Feodor-Lynen-Str. 21***	
Possibilities and limits of adult mesenchymal stem cells within the context of Tissue Engineering	seminar	27.05.2021	4.15 – 5.45 pm	Cornelia Blume
	tutorial	10.06.2021	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	10.06.2021	4.15 – 5.45 pm	Susanne Petri
	tutorial	17.06.2021	3.00 – 4.00 pm	

Patent protection of academic inventions	seminar	17.06.2021	4.15 – 5.45 pm	Torben Söker, Ascenion GmbH
	tutorial	24.06.2021	3.00 – 4.00 pm	
Good Manufacturing Practice (GMP), Advanced Therapy Medicinal Products (ATMP)	seminar & tutorial	01.07.2021	3.00 – 4.30 pm **Feodor-Lynen-Str. 21***	Stephan Klöß
			4.45. – 5.45 pm **Feodor-Lynen-Str. 21***	
Quality Management - QM	seminar & tutorial	08.07.2021	3.00 – 4.30 pm	Inga Bernemann
			4.45 – 5.45 pm	

Other Locations*:

Feodor-Lynen-Str. 21*:

Dr. Sarah Strauß (Seminar & tutorial: 03.06.2021**)**
Ambystoma Mexicanum Bioregeneration Center & Spider Silk Laboratory
Feodor-Lynen Str. 21, 30625 Hannover
Building M05 level S0 seminar room 0110

Dr. Stephan Klöß (Seminar & tutorial: 01.07.2021**)**
ATMP-GMP-DU
Building 05, level 4
Feodor-Lynen-Straße 21, 30625 Hannover
Seminar: Building 05, level 3
Tutorial: Building 05, level 1

Additional offers:
Limited number of participants. **Registration required!**

Meet The Expert

From bedside to the lab-side: friends and foes of industrial high throughput qPCR molecular diagnostics	Thomas Müller, Molecular Biology, Synlab Mecial Care Unit Weiden	HBZ	FRIDAY, 27.11.2020	10.30 - 12.00 am

Method-based Seminars

Advances in cryopreservation of native tissues and tissue-engineered constructs	Oleksandr Gryshkov, IMP, LUH	NIFE*	29.04.2021	4.15 – 5.45 pm
Telomeres & Telomerase: from measurement to manipulation of longevity	Christian Bär, IMTTS, MHH	HBZ	WEDNESDAY, 27.01.2021	4.00 – 5.30 pm
Laser based methods for imaging and manipulation of cells and tissue	Stefan Kalies, IQO, LUH	NIFE*	May 2021 tbd	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

PhD Program "Auditory Sciences: Physics and Engineering, Physiology and Therapy of Hearing"

For further information and registration, please contact (if not noted otherwise):
baumhoff.christine@mh-hannover.de for courses in Hannover
mark.pottek@uni-oldenburg.de for courses in Oldenburg

Obligatory courses:

red: obligatory courses for all students; black: electives for UOL and LUH, obligatory for MHH

Title	Instructor(s)	Credit	Time and place
1.1 Clinic, Diagnostic and Therapy of Peripheral and Central Hearing Disorders	Prof. Thomas Lenarz	25 hours 3 CP	MHH building K6, node B, 6th floor, seminar room S66 On request
1.2 Audiology and Physics of Hearing	Prof. Hannes Maier	15 hours 11,5 CP	MHH NIFE, M20-01-1140 Date t.b.d.
1.3 Sensory Neuroscience	Prof. Andrej Kral	25 hours 3 CP	MHH NIFE, M20-01-1140 On request
1.4 Imaging Methods in Medicine	Prof.'in Lilli Geworski	25 hours 3 CP	MHH Building K7, floor S0, seminar room 1321 Next date: spring 2021
1.5 Psychophysical Methods in Hearing Research	Prof. Andreas Büchner	15 hours 1,5 CP	MHH Seminar room "DHZ", Hannover Date t.b.d.
1.6 Audio signal processing	Prof. Waldo Nogueira	15 hours 1,5 CP	MHH Hannover Date t.b.d.
1.7 Introduction to Biomaterials, Laser Spectroscopy and Microelectronics	Prof. Peter Behrens, Prof. Andreas Heisterkamp, Prof. Holger Blume	25 hours 3 CP	LUH Date t.b.d.
1.8 Fundamentals in Auditory Physiology	Prof.'in Christine Köppl, Prof. Georg Klump	30 hours 3 CP	UOL Block course during SuSe (next date: June 2021)
1.9 Summer School and Internal Retreat	N.N.	20 hours 2 CP	July 2021 Place: Pescheks Seminar-/ Tagungshotel, Visselhövede

Elective courses at MHH:

Title	Instructor(s)	Credit	Time and place
2.1 Nanotechnology in Medicine	Prof. Theo Doll	12 hours 1 CP	MHH, NIFE On request
2.2 Sound Coding Strategies and Signal Processing Methods for Cochlear Implants and Hearing Aids	Prof. Waldo Nogueira	15 hours 1.5 CP	MHH On request
2.3 Neural Signal Processing	Prof. Waldo Nogueira	15 hours 1.5 CP	MHH On request
2.4 Biomedical Technology	PD Dr. Omid Majdani	10 hours 1 CP	MHH On request
2.5 Medical Image Processing for Medical Applications	PD Dr. Omid Majdani, Thomas Rau	12 hours 1-1.5 CP	MHH On request
2.6 Modulation of Basal Ganglia Activity in Movement Disorders by Functional Neurosurgery	Prof. Joachim Krauss	1.5 hours	MHH On request
2.7 Animal Models for Psychiatric Disorders	Prof.'in Kerstin Schwabe	1.5 hours	MHH On request
2.8 Auditory Plasticity	Prof. Andrej Kral	25 hours 3 CP	MHH, NIFE On request
2.9 Scientific Writing	Prof. Andrej Kral	30 hours 3 CP	MHH, NIFE On request
2.10 Statistical Approaches in Auditory Sciences	Prof. Andrej Kral, Dr. Wiebke Konerding	10 hours 1 CP	MHH NIFE M20-01-1140 On request
2.11 Lab Meeting Otolaryngology	N.N.	1 hour / meeting	MHH NIFE, M20-S0-2520, Wed 5–6 pm
2.12 Journal Clubs	Prof. Andrej Kral Prof. Waldo Nogueira	1 hour/ meeting	MHH
2.13 Hearing(4all) Research Seminar	N.N.	1 hour / meeting	MHH Wed every 2nd month: 5–6 pm Place: t.b.a.; Contact: baumhoff.christine@mh-hannover.de

2.14 Colloquium Medical Physics	Prof.'in Lilli Geworski	1 hour / meeting	MHH, building K7, floor S0, seminar room 1321 Every second Tue 3–4 pm Registration required!
2.15 Lunch seminar Radiology	Prof.'in Lilli Geworski	1 hour / meeting	MHH Radiology Wed 12–1 pm Registration required!
2.16 Colloquium Radiology	Prof.'in Lilli Geworski	1 hour / meeting	MHH Radiology Tue 8:15–9:00 am Registration required!
2.17 Audio Signal Processing for Cochlear Implants and Hearing Aids in Python	Prof. Waldo Nogueira	15 hours 2 CP	MHH, NIFE On request

Elective courses at LUH:

Title	Instructor(s)	Credit	Time and place
2.18 Basics of Digital Systems	Prof. Holger Blume	12 hours 1 CP	LUH / IMS Seminar room 335 Appelstr. 4, 3rd floor On request 10 am – 1 pm, 2–5 pm (daily)
2.19 Application-Specific Instruction-Set Processors for Hearing Aid Systems	Jun.-Prof. Guillermo Payá Vayá	12 hours 1 CP	LUH / IMS Seminar room 335 Appelstr. 4, 3rd floor On request 10 am – 1 pm, 2–5 pm (daily)
2.20 Principles of Signal Processing in MATLAB	Jun.-Prof. Guillermo Payá Vayá	12 hours 1 CP	LUH / IMS Seminar room 335 Appelstr. 4, 3rd floor On request 10 am – 1 pm, 2–5 pm (daily)

Elective courses at UOL:

Title	Instructor(s)	Credit	Time and place
2.21 Aktuelle Probleme der Akustik, Signal-verarbeitung und Medizinischen Physik	Prof. Simon Doclo, Prof. Volker Hohmann, Prof. Birger Kollmeier, Prof. Steven van de Par et al.	25 hours 3 CP	UOL Tue 2–4 pm
2.22 Oberseminar Signal- und Sprachverarbeitung	Prof. Simon Doclo	25 hours 3 CP	UOL Mon 10 am – 12 pm
2.23 Oberseminar Medizinische Physik	Prof. Birger Kollmeier	25 hours 3 CP	UOL Tue 10 am – 12 pm
2.24 Psychophysik und Audiologie	Prof. Birger Kollmeier, Prof. Steven van de Par, Dr. Stephan Ewert	50 hours 6 CP	UOL WiSe: Tue 8–10 am & Fri 8–10 am
2.25 Advanced Topics of Speech and Audio Processing	Prof. Simon Doclo	25 hours 3 CP	UOL WiSe: Mon 2–4 pm & Thu 10 am – 12 pm
2.26 Clinical Neuropsychology	Prof. Stefan Debener	25 hours 3 CP	UOL WiSe: Tue 8–10 am
2.27 Einführung in die Sprachverarbeitung	Prof. Bernd Meyer	25 hours 3 CP	UOL SuSe: Wed 2–4 pm
2.28 Artificial Intelligence, Biological Intelligence and Learning	Prof. Jörg Lücke, Dr. Jörn Anemüller	25 hours 3 CP	UOL SuSe: Thu 10 am –12 pm
2.29 Digital Signal Processing	Prof. Simon Doclo	50 hours 6 CP	UOL SuSe: Mon 4–6 pm & Wed 12–2 pm
2.30 Neurophysik (Neurokognition)	Prof. Volker Hohmann, Dr. Stefan Uppenkamp	25 hours 3 CP	UOL SuSe: Tue 4–6 pm
2.31 Akustik	Prof. Steven van de Par, Dr. Stephan Ewert, Prof. Birger Kollmeier	50 hours 6 CP	UOL SuSe: Tue 4–6 pm & Fri 8–10 am

Combined electives:

2.34 Combined Hot Topic Seminar (Web Conference)	Dr. Christine Baumhoff, Dr. Mark Pottek	1 h / seminar	MHH/UOL/LUH Dates t.b.a.

PhD Program "Epidemiology"

Module*	Type	Dates 2020/2021**	Duration/TUs***	Organizer/Lecturers
Short Course on Effective Writing of Epidemiologic Research	Lectures and exercises	Autumn 2020	2 days (10 TU)	Gérard Krause Jördis Ott Stephan Glöckner Support: Stéphane Ghozzi
Online Training "git version control – working with colleagues in data science"	Lectures and exercises	Autumn 2020	1 day (8 TU)	Stephan Glöckner Neha Warikoo
(Generalized) Linear Models	Lectures and exercises	Autumn 2020	3 days (24 TU)	Patrizio Vanella
Evaluation of Data Quality	Lectures and exercises	Winter 2020/2021	3 days (24 TU)	Stephan Glöckner
Textmining with R	Lectures and exercises	Winter 2020/2021	1 day (8 TU)	Stephan Glöckner Neha Warikoo
From Lab to Tables	Lectures and exercises	Spring 2021	5 days (36 TU)	Monika Strengert Berit Lange Gérard Krause (and others)
Statistical Causality	Lectures and exercises	Spring 2021	3 days (24 TU)	Patrizio Vanella
Systematic Reviews and Meta Analysis	Lectures and exercises	Spring 2021	2 days (16 TU)	Berit Lange Barbora Kessel
Surveillance and Outbreak Investigations	Lectures, exercises, practical application	Summer 2021	One week module (36 TU)	Gérard Krause Berit Lange Juliane Dörrbecker (and others)
Data Visualisation using R	Lectures and exercises	Summer 2021	2 days (16 TU)	Frank Klawonn
Survival Analysis	Lecture and exercices	Autumn 2021	2 days (16 TU)	Berit Lange Patrizio Vanella
Multivariate Methods	Lectures and exercises	Autumn 2021	3 days (24 TU)	Patrizio Vanella
Journal Club	Presentations by students	Monthly	Regular attention and one own presentation required (1 TU)	PhD Students
R Coding Club	Presentations by students and postdocs	Monthly	Regular attention and one own presentation required (1 TU)	PhD Students

* Teaching modules in the PhD Programme "Epidemiology" are usually organized as compact courses.
** Additional modules or courses may take place, depending on capacity and need.
*** TU=Teaching Unit (à 45 min)

Students enrolled in the PhD Programme "Epidemiology" and conducting their research work at the HZI are offered to attend courses and symposia organized by the HZI Graduate School.
Students of the PhD Programme "Epidemiology" are encouraged to attend courses at institutes of the MHH and of the HBRS at the MHH. Teaching units are accredited after consulting with the coordinating team and in line with the requirements of the programme.

The annual PhD retreat of the Programme "Epidemiology" is taking place annually in Braunschweig and is scheduled for Summer 2021.
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Biomedical Data Science

Curriculum Winter and Summer Semester 2020/2021

The BIOMEDAS curriculum builds upon the fields of:

- Computer Science: discipline of formalisms and scalable algorithmic processes;
- Data Science: discipline for discovering intrinsic data properties, value, and actionable insights;
- Open Science: field for enabling access to research outcomes; and
- Biomedicine: area that combines natural sciences, especially the biological and physiological sciences, to clinical medicine

and thus, offers a multidisciplinary curriculum to train data scientists with the required skills to address the challenges of transforming biomedical data into actionable knowledge that will support the discovery and interpretation of insights in biomedicine.
Depicted program modules below develop the required skills using mathematical and computational models to draw reliable conclusions from biomedical data. The accompanying program provides efficient further qualification.

Information given as of Sept 22, 2020.
The actual curriculum can be viewed here at any time:

In case of questions, please contact the BIOMEDAS office: biomedas@translationsallianz.de

Program modules

The program modules group into four clusters (Biomedical Science, Computational Method Development, Machine Learning and Data Mining, Interdisciplinary) and consists of lecture series and related methodological courses. For the winter and summer semester 2020/2021 the following modules are planned:

Title	Lecturer/Organizer	Duration/Credit	Time/Place
Introduction to Biomedical Science	Various/BIOMEDAS	WS: 2 series with 7 x 1.5h, SS: 1 series with 7 x 1.5h	tba/web-based
Introduction to Computational Method Development	Various/BIOMEDAS	WS: 1 series with 7 x 1.5h, SS: 1 series with 7 x 1.5h	tba/web-based
Introduction to Machine Learning and Data Mining	Various/BIOMEDAS	WS: 1 series with 7 x 1.5h, SS: 1 series with 7 x 1.5h	tba/web-based
Interdisciplinary	Various/BIOMEDAS	tba	tba/web-based

Accompanying program

Journal Club and Progress Seminar

Title	Lecturer/Organizer	Duration/Credit	Time/Place
BIOMEDAS Journal Club	BIOMEDAS students	45 min/bi-weekly	tba/web-based
BIOMEDAS Progress Seminar	BIOMEDAS students	45 min/bi-weekly	tba/web-based

Annual Retreat

The annual PhD retreat of the Program BIOMEDAS is taking place annually. More information to follow.

Soft Skill Courses

Please refer to the courses offered via the HBRS (page 57).

Alternative Courses

Students enrolled in BIOMEDAS are encouraged to attend courses with relevant content from other graduate programs or university lectures of partner institutions. Hours of lessons can be accredited after consulting with the thesis committee and in line with the requirements of the program.

Specific seminars and practicals

(see special announcements provided by the HBRS office, program offices and the respective departments)

Organised by the HBRS Office:

Presentation of projects / retreat (weekend, 2 days; for MD / PhD MM: 04th/5th March 2021)

Gene Technology Security (September 2020, in English)

Translation workshop (Drug development, Patenting, Clinical Studies etc.: TBA)

Career Day (March 26th, 2021)

GMP / GLP workshop (January 2021, Gerdelmann, Pägelow and Papamichael, ITEM)

Scientific communication / writing, "tips and tricks" (January 15th, 2021, Kruse)

Animal Experiments (2 days theory: November 2nd and 3rd, 2020; exam December 7th)

2-day practical courses: December 14th/15th, 2020 and February 7th/8th, 2021, Bleich / Dorsch)

Conflict Management (Schröder, December 8th, 2020)

Conflict Management (TBA, G. Kümmele, Berlin) and

Stress Management (TBA, 2021, G. Kümmele)

Time Management (February 17th, 2021, Golin)

Team Work and Leadership (March 17th, 2021, Golin)

Intercultural communication (weekend, June 24th-26th, 2021; A. and S. Petersen, Aachen; together with MSc / PhD programs in Göttingen)

Seminars on career perspectives (continuously)

Bioinformatics: TBA (Chouvarine, DeLuca)

Further courses: Assessment Center, Career Coaching, Project Management, Team Leadership, Presentation workshops (German and English), Weekend Workshop German Culture etc. will be announced in course of the year.

Seminars offered by Helmholtz Centre for Infection Research Braunschweig, TWINCORE, Fraunhofer Institute or TiHo: see announcements

Lectures (see special announcements and websites)

Interdisciplinary

- Seminars of the SFBs
- Seminars of Clusters of Excellence"
- Immunological Colloquium
- Gastroenterology Colloquium
- Microbiological Colloquium, Virological Colloquium

In the departments (a must!!)

- Lab-Seminars
- Journal-Clubs (these should be in English!)

Internal practical courses

The supervisors will provide you with special practical trainings if needed. You might also ask your co-supervisors or fellow PhD students for help.

Program offices and HBRS will offer a number of short practical courses (see announcements).

German Classes

Fridays: 4.00 - 6.00 pm (beginners, Ms Gudrun Dettmar), seminar room 1031 (J4, level 01);
Tuesdays: 4.00 - 6.00 pm (advanced, Ms Gudrun Dettmar); seminar room 1031 (J4, level 01)

English conversation and language skills

Mondays: 6.15 pm - 7.30 pm (Ms Lydia Lange), HBRS seminar room 1140 (J4, level 01)

Optional

Note: You are welcome to visit most of the seminars / courses organised for the German Biology and Biochemistry students, as well as medical students. You are also welcome to visit seminars / courses offered by all programs of HBRS [including the Graduate School at the University of Veterinary Medicine Hannover (TiHo)].

http://www.mhh.de/hbrs
http://www.helmholtz-hzi.de

Rules and Requirements for Postgraduate (PhD) Studies and Examinations in structured doctoral programs of Hannover Biomedical Research School (HBRS), Hannover Medical School

On December 15th, 2000 the Senate of the Hannover Medical School approved the following **Rules and Requirements for Postgraduate (PhD) Studies and Examinations in structured doctoral programs of Hannover Biomedical Research School (HBRS)** [alternatively Dr.rer.nat.]. *(Modifications on June 4th 2002, February 11th 2004, April 21st 2005, March 14th 2007, April 15th 2009, November 9th 2011, November 14th 2012, June 18th 2014, May 11th, 2016, February 1st, 2017, October 17th, 2018 and January 15th, 2020)*

§ 1
Objective of PhD Studies

Research studies at the Hannover Medical School (MHH) for the purpose of obtaining a PhD or Dr.rer.nat. degree (hereinafter referred to as PhD studies) shall facilitate postgraduate training with a focus on specific research projects with a view to enabling the candidate to do in-depth scientific work on his or her own and to provide him or her with additional professional qualifications for future assignments in research or related areas of work. PhD studies shall foster the development of outstandingly gifted up-and-coming academics. The standard time allowed for completing PhD studies shall be three years. Once these PhD studies have been successfully completed, and the PhD examination has been passed, the MHH will award the degree of a Doctor of Philosophy (PhD) to medical students (including dentists), veterinarians, pharmacists, engineers, life scientists, and graduates with biomedical or health science related focus or Dr. rer. nat. to natural and life scientists and pharmacists (not to medical students).

§ 2
Requirements for Access and Admission

(1) Anybody having successfully completed university studies in medicine, veterinary medicine, engineering, pharmacy, natural sciences or biomedical/ health science focus (normally Master, Diploma or Staatsexamen/MBBS) shall have access to PhD studies.

(2) Applicants are required to render evidence of above-average results obtained at university. The applicant's past career must reveal his or her particular qualification for and dedication to scientific work. Decision on whether or not a candidate qualifies for access to PhD studies is up to the PhD Program Committee (§ 4).

§ 3
Admission to PhD Studies

(1) The number of applicants that can be admitted to PhD studies is limited; the number depends on the respective program. The respective PhD Program Committee shall select the applicants to be admitted (§ 4). As a rule, the President of the MHH will give notice of the date of commencement of PhD studies once a year.

(2) Details of the as a rule three-step selection process (written application, written test in home countries or selection by program committee, interview) are regulated in the respective program 'rules of admission'.
(3) Application papers shall be submitted to the chairperson of the PhD Program Committee. Details of current application procedures are described on the website of HBRS.

(4) On the basis of the results of the selection process, the PhD Program Committee shall decide on admission to PhD studies.

(5) At MHH, candidates are enrolled as PhD students for the whole duration of their PhD work. Matriculation is done at the beginning of studies (usually winter semester).

§ 4
PhD Program Committee

(1) The respective PhD Program Committee shall be responsible for the conduct of PhD studies according to the Rules and Requirements for postgraduate studies and examinations to obtain a PhD (Dr.rer.nat.) degree. In the PhD program Infection Biology/ DEWIN the steering committee of the Centre for Infection Biology (ZIB) is acting as PhD program committee.

(2) As a rule, the PhD Program Committee shall be composed of four professors (or competent habilitated/senior scientists), a university scientist with a doctoral degree, and student representatives of every study year who have a joint vote. Students suggest on person from every batch to act as "class-speaker". Members of the PhD Program Committee shall be appointed by the scientists of a respective program for a period of four years, or two years in case of student members. Re-election shall be possible. The respective PhD Program Committee shall be affirmed by the Research Committee of MHH. The PhD Program Committee is then constituted by the Dean of HBRS and shall elect a professor from among its ranks as chairman. The steering committee of ZIB is elected by its members. The steering committee then appoints a speaker among their ranks.

(3) The PhD Program Committee will meet regularly.

(4) The PhD Program Committee will evaluate proposed projects (open projects) according to quality (with external referees if necessary), financial support, guarantee of independence for PhD students.

(5) The PhD Program Committee shall appoint a team of co-supervisors (thesis advisory board) for each PhD student. Team members shall be habilitated or equally qualified. The team of co-supervisors shall be composed of the student's personal supervisor at the MHH or partner institutes, and two further scientists qualified as university teachers whose professional activity shall be closely related to the subject of the project. Members of the thesis advisory board usually come from different departments/institutes. In case of several PhD students doing research in the same line, the respective co-supervisors' teams can be composed of the same individuals.

§ 5
Contents of Studies

(1) The contents to be learned shall be conveyed to the students through their experimental or equivalent theoretical research work and through project-related as well as inter-disciplinary research-oriented courses and seminars. For that purpose, the PhD Program Committee shall prepare and submit, after consultation with the university institutions or partner institutes involved in these studies, a curriculum indicating compulsory and recommended courses or seminars for each discipline.
The courses and seminars shall be held by the teachers and professors of the MHH as well as partner institutes, including visiting professors. Teaching shall be in English. Lectures and seminars of different programs are mutually acknowledged. PhD students may also register for suitable courses or seminars offered by other scientific schools (Leibniz University, University of Veterinary Medicine, etc.). Students are encouraged to do active teaching themselves, e.g. by giving lectures at seminars or postgraduate research training programs [Doktorandenkolleg]. PhD students independently maintain a study book, in which all training activities and presentations are documented. Each student's individual progress at PhD courses and seminars shall be monitored by the respective teachers (by signatures in study books).

(2) PhD students shall design, after consultation concert with their co-supervisors, their respective individual schedules pursuant to the curriculum established by the PhD Program Committee. Such individual schedule shall require approval by the respective co-supervisors' team. The student must complete a minimum of 300 hours at courses and seminars during his or her PhD studies; as a rule, at least 80% thereof must be taken at project-related courses and seminars and up to 20% may be spent on interdisciplinary learning (e.g. experimental techniques and bio-informatics, molecular biology, bio-statistics, scientific communication etc.).

During the first year of PhD studies, courses for physicians, dentists and veterinarians are intended to provide participants with a chance to consolidate their knowledge of the fundamental principles of natural sciences and courses for natural scientists are intended to consolidate their knowledge in medical aspects.

(3) PhD students could apply for a leave if justified (e.g. in case of pregnancy), but for no more than 12 months. Short time stays abroad are very much appreciated and will be supported. If students take seminars and courses abroad, they could be acknowledged for the respective PhD program.

§ 6
Supervision

(1) PhD students shall supervised by the members of their respective thesis advisory board (§ 4) appointed by the PhD Program Committee. The responsibilities of the team shall be:

a) To act as co-supervisors and to give individual expert advice to PhD students all through their PhD studies.

b) Within the scope of their research project, students have to work with appropriate methods on a clearly defined subject so that, with some realistic prospect of success, scientific knowledge can be expected to be incremented and the results of such research should be published in international peer-review journals. The co-supervisors shall make sure, and satisfy the PhD Program Committee to that effect, that students are not entrusted with any tasks unrelated to their PhD studies.

c) To evaluate PhD students' progress during their studies by receiving their reports (annually) and conducting exams; and to assess their written final examination papers. The thesis advisory board meeting is conducted at least once a year. It is documented by a written protocol.

d) Within a time of probation of 6 months from start of the PhD project, PhD students have to prove themselves and are evaluated mainly by the main supervisors. Within this time peroid, student status can be changed easily on both sides in agreement with the team of co-supervisors and PhD Program Committee. Upon request, the PhD Program Committee can decide about the termination of collaboration with the student.
The termination of collaboration after the time of probation requires first a moderated discussion by a member of the PhD Program Committee between the student and the respective thesis advisory board. A student member of the PhD Program Committee is allowed to join as well. Afterwards, the PhD Program Committee announces their recommendations.

(2) The supervisors shall be responsible for the financing of the respective research project and shall make efforts, during the standard period of PhD studies (three years), to raise the money needed for the PhD students they are in charge of. Any scholarships available at the MHH shall be awarded or distributed to the individual PhD programs by resolution of the HBRS Committee of MHH.
(3) (Co-)supervisors should assist PhD students in planning their further professional career.

(4) The responsibilities of (co-)supervisors for PhD students shall end upon the date when the latter pass their PhD examination (§ 10), which is normally three years but no later than five years after commencement of PhD studies. The duration of PhD could only be extended in exceptional cases for a maximum of one year. Reasons could be: a) intermittent medical training (specialization) by medical students during their PhD studies, b) prolonged parental leave or c) serious illness.

§ 7
Scientific Colloquia (retreats)

(1) PhD students shall be invited annually by the PhD Program Committee to attend a public colloquium (retreat), giving them an opportunity to give an oral or poster presentation on the current status of their research (§5). The contents of such presentation, constituting an interim/project report, shall be submitted in writing by the PhD student to the PhD Program Committee.

(2) The PhD Program Committee shall decide whether or not this progress report constitutes a sufficient step towards the successful completion of the student's research. If the Committee's comment is negative, such result shall be communicated in writing to the student and his or her co-supervisors' team, indicating the reasons.

(3) Pursuant to a period of one month, the student shall submit a modified work plan for the next year of his research, giving due consideration to the recommendations made.

§ 8
Intermediate Examination

(1) The oral intermediate examination shall be held no later than 18 months after commencement of PhD studies. By way of exception, which must be well-founded, the intermediate examination can be taken at a later date. If a student wishes such exception, he shall apply in writing to the PhD Program Committee adding a comment prepared by his co-supervisors' team.

(2) The dates for intermediate examinations shall be determined by the PhD Program Committee. The intermediate examination shall be held by an expert in the special field and an additional member of the HBRS faculty (chairman). These two examiners are elected by the PhD Program committee. The exam shall cover topics from the student's research project and from the courses and seminars the student has registered for. The examination usually is held in English.

(3) The following grades are given: excellent / very good / good / sufficient/ failed

(4) If the student fails the intermediate examination he shall be allowed to retake it once, pursuant to a period of at least three and no more than six months as the examiners may decide. If the student fails again, he or she shall be deemed to have finally and absolutely failed. Following such final and absolute failure the student shall be taken off the register.

(5) The "chairman" shall report the result of the intermediate examination to the PhD Program Committee. The result of the exam will account for 20% of the final grade (PhD or Dr.rer.nat.).

§ 9
Requirements for Signing up for PhD Examination

(1) After completion of PhD studies, which is normally at the end of the third year, the PhD examination shall be held. The PhD student shall submit the following documents when signing up for the PhD examination:

1. Certificate of regular attendance at and completion of courses and seminars according to the curriculum, i.e. a total of at least 300 hours, and of three colloquia pursuant to § 7;

2. Certificate of attendance of a course on "good scientific practise",

3. Certificate of intermediate examination;

4. A scientific thesis (dissertation) prepared as a Monograph in English or German by the PhD student on the research project the student worked on during his or her PhD studies, with introduction, materials and methods, results, discussion and summary. The thesis shall constitute an essential original scientific contribution to the discipline the student's research project pertains to;

5. Alternatively (instead of a Monograph), usually two first author publications in internationally peer reviewed science journals (published or accepted) as a cumulative thesis. Shared first authorships are allowed. The PhD student's personal contribution to such publications shall be clearly identified as well as the contribution of the other authors. In that context, "accepted" shall be deemed equivalent to "published". As for this publication requirement, exceptions are possible with reasons to be given by the supervisor.
   The publications must be in one scientific context, and shall be supplemented by a newly composed, detailed description under a joint title in English or German of the research subject, including an overall summary and a discussion of results. Hereby, current literature shall be considered.

6. A written agreement to a potential screening of the thesis with plagiarism detection software (appendix 1).

(2) The final version of the dissertation should be submitted in six printed copies as well as a digital version (appendix 2).

(3) Before evaluation by the internal/external examiners, the dissertation can be checked for the agreement with the MHH guidelines on ”good scientific practice“. This includes the screening of primary data as well as screening for plagiarism. In case of suspicion of scientific fraud, the dissertation is passed on to an ombudsman, who can initiate proceedings according to the guidelines on „good scientific practice“. During the ombudsman proceedings, the PhD process is paused.

(4) The registration for the PhD examination (the submission of the PhD thesis) can be withheld after the PhD student had announced this to the PhD committee in written form. The PhD program committee informs the office of president.

(5) To assess the thesis, the PhD Program Committee shall procure at least two independent expert opinions. Usually there is one external expert’s opinion, as well as one internal expert’s opinion. Experts are experienced researchers with a habilitation (or equivalent qualification). The external expert shall not be a member of MHH or HBRS faculty. The internal expert is not a member of the thesis advisory board. To be on the save side, one expert shall be nominated as substitute in case of unforeseen drop outs. For the Dr. rer. nat., at least one of the experts (internal or external) has to have a natural scientist qualification. In addition, the co-supervisors’ team shall prepare an expert report on the dissertation, and such report together with the external and internal expert’s opinion shall serve to make the final assessment. The following grades can be given in the reports:
excellent / very good / good / sufficient / failed
or
ausgezeichnet / summa cum laude,
sehr gut / magna cum laude,
gut / cum laude,
genügend / rite,
nicht bestanden / non sufficit

All three reports are considered equally for the final assessment, together 60% for the final mark.

(6) If one of the expert reports detects any shortcomings in the dissertation, the PhD Program Committee can be requested to have such shortcomings eliminated or remedied as a precondition for acceptance of the thesis. The chairperson can allow a reasonable period for the PhD candidate to remedy the shortcomings and recommend that he or she submit the thesis anew. In that respect, the chairperson of the PhD Program Committee can extend this period once only. The experts or the thesis advisory board shall assess the thesis again once the shortcomings have been remedied.

(7) If, based on such second experts’ vote, the PhD Program Committee declines to accept the thesis, the candidate shall be deemed to have failed the PhD examination finally and absolutely. In that case, the PhD student shall be taken off the register.

§ 10
PhD Examination

(1) The PhD examination consists of a public presentation (usually 15-20 min, in English) held by the PhD student at the Hannover Medical School on the subject of his research, a subsequent public disputation of the project of at least 30 minutes of duration to assess the knowledge acquired by the student on the subject of his specific area of research as well as on interdisciplinary subjects. The interview also serves to assess whether the candidate has acquired, and is able to apply, any knowledge and skills relating to the scientific environment of the subject of his research.

(2) The examination is taken by an examination board: the external and internal examiner as well as a member of the PhD Program Committee (with PhD degree) who acts as chairman.

(3) The final grade results from: the intermediate exam (20%), the written reports of dissertation by thesis advisory board/ the two experts’ opinions (60%), the oral examination (20%). In justified exceptional cases, the examination committee may deviate from the latter rule.

(4) The oral examination shall be taken on record in abridged form and shall indicate:

A short summary of the examination content
the grade earned for the intermediate examination
the grade earned for the thesis (three independent written reports),
the grade earned for the oral examination,
the overall grade average earned for the PhD examination.

It shall be signed by the chairman of the board of examiners.

(5) The following grades can be awarded:

Excellent/ very good/ good / sufficient / failed

Equivalent to
ausgezeichnet / summa cum laude,
sehr gut / magna cum laude,
gut / cum laude,
genügend / rite,
Nicht bestanden / non sufficit.

The overall grade „excellent – summa cum laude“ is usually awarded only if at least one first-author manuscript is accepted for publication. Shared first-authorships are considered equally.

(6) If the candidate fails the final examination, he or she shall be allowed to retake it once with the same board of examiners, pursuant to a period of at least three and no more than six months as the thesis advisory board may decide. Should the student then fail again, he or she shall be deemed to have finally and absolutely failed the PhD examination. Following such final and absolute failure the student shall be taken off the register.

(7) The result of the PhD examination shall be communicated to the PhD Program Committee and the President’s office (in case of failure with reasons and instructions about a person's available legal remedies) as well as to all German universities.

§ 11
Publication

(1) PhD students are obliged to publish their dissertation.

(2) Once the student has passed the PhD examination, he or she has to distribute within one year six copies of the dissertation (plus one electronic version). Formatting has to be done according to the rules of MHH library. The publication in form of a monograph is allowed if it is clearly indicated that the dissertation has been published by MHH.

(3) If the deadline of one year is missed all rights acquired by the PhD exam are extinct.

(4) The PhD student together with the supervisor can apply at the ‘Forschungsdekanat’ for a so called ‘Hold of the dissertation for publication’ in order to protect intellectual property or patent issues. This application form needs to be handed in at the library together with the copies of the dissertation. In case of discordance of student and supervisor, the president of MHH or a designated person will decide on granting a ’Hold’. All information concerning the hold needs to be protected from unwanted distribution by a written agreement on confidentiality, for example in an application process. The PhD office can certify that the obligatory copies of the dissertation had been handed in and that the electronic version matches the printed version.

(5) In consequence, there is a delay in making the dissertation publicly available. The “Hold” can be applied for one year. It can be extended twice for another year upon request.

(6) At the end of the „Hold“, the library is automatically publishing the dissertation if there is no further application for extension.

§ 12
Award of the Academic Degree of a Doctor of Philosophy (PhD)

(1) After successful PhD examination and distribution of six final printed copies and an electronic version, as well as a declaration that all documentation, electronic data, lab books and materials had been handed over in the respective department/institute, he or she shall be awarded the academic degree of a Doctor of Philosophy (PhD) or a Dr. rer. nat. degree by the MHH.

(2) A document as shown in Appendix 3 and 4 shall be issued to him or her in evidence of such award. The award shall authorize the candidate to use the academic title of a PhD or Dr. rer. nat..

§ 13
Abrogation, invalidity and revocation of the doctorate

(1) The examination board suspends the PhD examination procedure, if an investigative or criminal procedure concerning the doctorate is pending against the PhD student.

(2) If the doctoral candidate is found to be guilty of a serious breach of good scientific practice or deception regarding the doctoral achievements or that there are no essential requirements for admission to the doctorate, the Senate declares upon suggestion of the president, the immediate termination of the procedure and the invalidation of the PhD work performed so far. In this case, it is not permitted to conduct a PhD again at the MHH.

(3) If, after completion of the PhD, it turns out that the doctoral candidate committed a deception, threat or bribery during a doctoral thesis, the Senate can subsequently withdraw the doctoral degree after hearing the doctoral candidate. This applies in particular to deceptions about the circumstances mentioned in paragraph 2. If the doctoral degree is withdrawn, the president revokes the doctoral certificate and title. Paragraph 2 sentence 2 and paragraph 48 of the Administrative Procedure Act apply accordingly. Withdrawal affects the time of completion of the doctorate.

(4) The doctoral degree - including an honorary doctorate - can be withdrawn by the Senate, if the doctoral candidate has been legally sentenced to at least one year in prison for an intentional crime or if he or she has been legally sentenced for an intentional crime in its preparation and perpetration of the doctoral degree. Paragraph 48 of the Administrative Procedure Act applies accordingly.

§ 14
Coming into Effect

The Rules and Requirements for Postgraduate Studies and Examinations in structured doctoral programs of Hannover Biomedical Research School (HBRS) to obtain a PhD degree (or Dr. rer. nat.), as approved by the senate of MHH, are hereby published within the Hannover Medical School and are coming into effect.

Hannover,

The President
Professor Dr. Michael P. Manns

Appendix 1 Declaration

Declaration

Herewith, I confirm that I have written the present PhD thesis myself and independently, in compliance with "the policy of Hannover Medical School on the safeguarding of good scientific practice and procedural rules for dealing with scientific misconduct" and that I have not submitted it at any other university worldwide.
Herewith, I agree that MHH can check my thesis by plagiarism detection software as well as randomly check the primary data. I am aware that in case of suspicion, ombudsman proceedings according to § 9 of MHH 'Guidelines of Hannover Medical School to guarantee good scientific practice and dealing with scientific fraud' will be initiated. During such proceedings, the PhD process is paused.

Hannover, (Month Year)

Appendix 2. Front pages of thesis (example)

Title

Logo of PhD Program

A thesis submitted for the degree of
Doctor of Philosophy (PhD) [or Doctor of Natural Sciences (Dr.rer.nat.)]
in the subject of XXX
by
First name Last name, Degree (e.g. Master)
Month Year

Hannover Medical School
International PhD program "XXX"
in Hannover Biomedical Research School (HBRS)
Department of XXX

2nd page

Acknowledged by the PhD committee and head of Hannover Medical School

President: Prof. Dr. Michael P. Manns
Supervisor:
Cosupervisors:
External expert:
Internal expert:
Day of final exam/public defense:

Example of PhD certificate (According to § 11)

Appendix 3

(MHH Logo)
Die Medizinische Hochschule Hannover unter der Präsidentschaft der Professorin/des Professors
Name Vorname verleiht
Frau/Herrn .Name Vorname
geboren am TT. Monat JJJJ in Stadt, Land
den Grad einer/s
Doktorin/Doktors der Naturwissenschaften (Dr. rer. nat.)
bzw. Doctor of Philosophy (PhD)
nachdem sie/er im Rahmen der Hannover Biomedical Research School unter Teilnahme am PhD Programm
XXXX durch ihre/seine Dissertation
TITEL
angefertigt in der Abteilung, Institut, Einrichtung,
sowie der öffentlichen Disputation der Arbeit ihre/seine Befähigung zu vertiefter selbstständiger wissenschaftlicher
Arbeit nachgewiesen und dabei das Gesamturteil
Summa Cum Laude (exzellent)/Magna Cum Laude (sehr gut)/Cum Laude (gut)/Rite (genügend)
erhalten hat.
Hannover, den TT. Monat JJJJ
(Siegel)

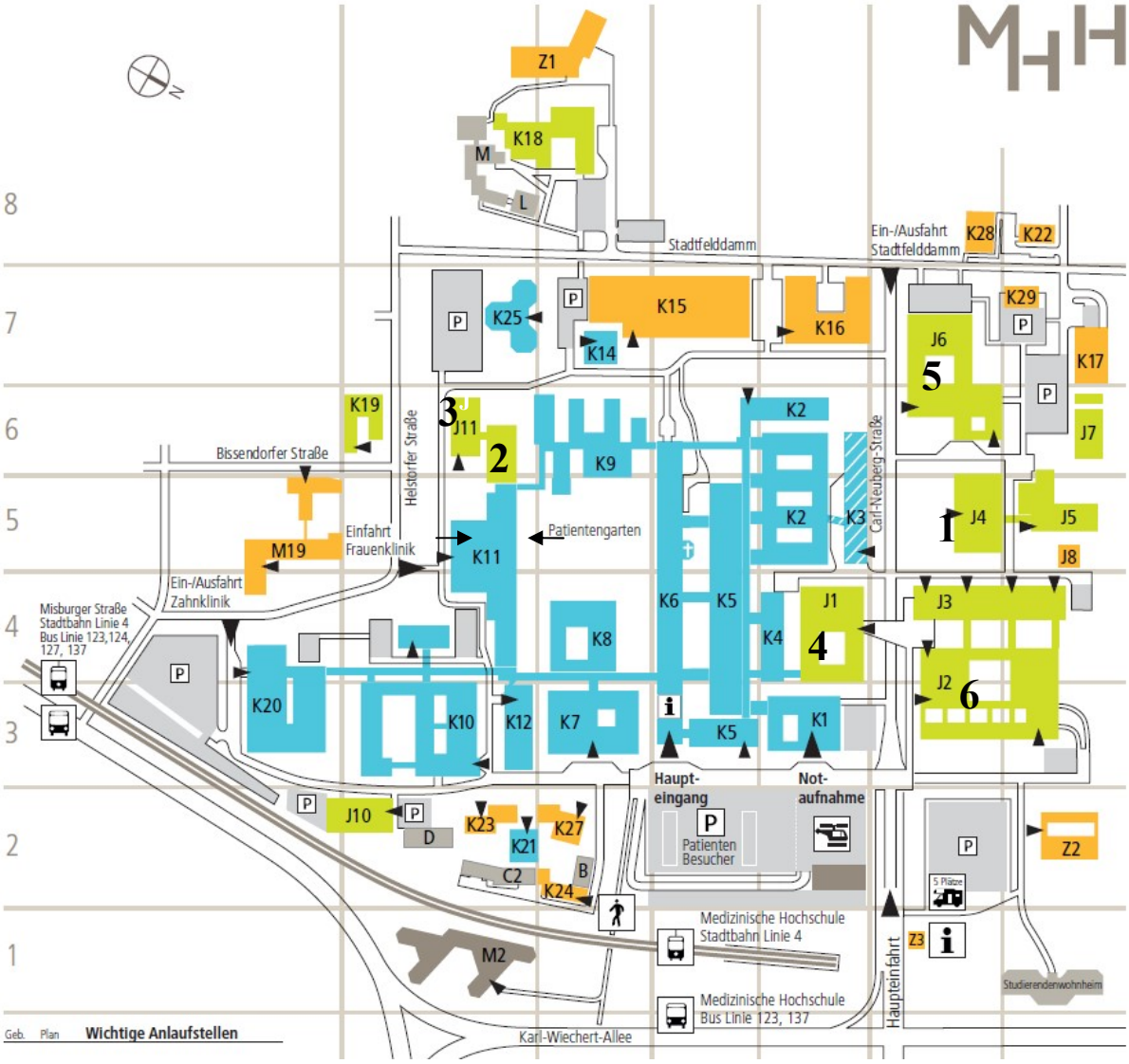
Unterschrift	Unterschrift
Programmsprecher/in	Präsident/in der Medizinischen Hochschule Hannover

Appendix 4

(MHH Logo)
Hannover Medical School under its President Professor Firstname Lastname confers upon
Firstname Lastname
Born on DD Month YYYY in town, country
the degree of
Doctor rerum naturalium (Dr. rer. nat.) / Doctor of Philosophy (PhD)
having participated in the PhD Program xxx within Hannover Biomedical Research School and having demonstrated the ability to undertake advanced independent research in his/her thesis
TITEL,
completed at the Institute of xx, Hannover Medical School, and a public defense of this thesis, which has been awarded the overall grade of
excellent (summa cum laude) / very good (magna cum laude) / good (cum laude) / sufficient (rite)

Hannover, DD Month YYYY

Signature	Signature
Chairman/woman PhD Program	President



TWINCORE ITEM

1: Building J4 (Forschungswerkstätten)
MD/PhD/ HBRS Office; HBRS seminar room 1140; level 1
Seminar room 1031, level 01,
Seminar room S 1400 (ground floor),

2: TPFZ Research building
(for entrance see arrows)
PhD Infection Biology Office and DEWIN, level 2
Seminar room 1420, ground floor

3: HBZ Building (Hans Borst Zentrum, J11)
PhD Regenerative Science Office, level 2
Seminar room, ground floor

4: Main lecture hall building (F-N), Library, registrar's office

5: Lecture halls Q, R

6: Lecture halls A - E