



REN^{PRO} : Regensburg Erlangen Nephrology PROgram

REN^{PRO} is a tailored training program focusing on renal research. The REN^{PRO} modules focus on kidney-specific content that broaden and deepen students' qualification.

Target group for the program: compulsory for PhD students within projects of the SFB, open for interested PhD students, master students, MD fellowship students, PhDs and physician-scientists

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Modules	must be attended at least	CPs (accepted by RIGel)
• Basic nephrology course	once	1.2
• Advanced nephrology training course	4 times	0.3 each
• Nephrology methods course	4 times	0.3 / 0.6 each
• Summer schools	2 times	2 each
• Congress of the DGfN	once	2

Basic nephrology course

Time and place: 4 days at the Universität Regensburg

- Lectures and seminars on renal physiology, renal anatomy, basic knowledge of renal disease and relevant experimental techniques are given by principal investigators of the CRC and their experienced coworkers
- Recommended for the first year of the PhD work

Day 1	Microscopic and macroscopic anatomy of the kidney	Lectures and practical histology course, electron microscopy
Day 2 and Day 3	Renal physiology and pathophysiology, Regulation of kidney function and blood pressure	Lectures and student practical course in renal physiology as in curriculum for medical students
Day 4	Introduction to some of most important experimental methods available	<ul style="list-style-type: none"> • Determination of GFR and blood pressure in mice • Electrophysiology and Ca²⁺ imaging techniques • In vivo imaging with multiphoton microscopy • Isolated perfused kidney

Advanced nephrology training courses

Time and place: 1 day at the Universität Regensburg, Universitätsklinikum Regensburg or at the FAU / Universitätsklinikum Erlangen, respectively

- Three courses per year, covering one of the 7 modules listed below, respectively
- PhD students must attend 4 courses during the PhD period

1.	Cystic kidney diseases: basic aspects Cystic kidney diseases: translational and clinics
2.	Immunology: general Immunology: kidney and kidney fibrosis
3.	Tubulointerstitial kidney diseases Renal transplantation: Immunology and clinics
4.	Diabetic nephropathy Glomerulonephritis
5.	Acute kidney injury Cardio-renal syndrome
6.	The complement system: role in kidney damage Nephropathology: Methods and selected examples
7.	(Epi-)genetics Genome-wide association studies

Nephrology methods courses

Time and place: 1 day at the Universität Regensburg, Universitätsklinikum Regensburg or at the FAU / Universitätsklinikum Erlangen, respectively

- Three courses per year, covering one to two of the methods listed below, respectively. The selection of topics will be based on the students' needs and interests, which will be determined by survey
- Thorough presentation of the theoretical background, and presentation of the methods in practice
- PhD students must attend 4 nephrology method courses during the PhD period

1	Epithelial transport
2	Determination of Ca ²⁺ and pH (renal and cardiac cells)
3	Electrophysiology
4	Structural biology
5	RNA scope technology
6	Rat renal transplantation

7	Isolated perfused mouse kidney
8	Fluorescence-activated cell sorting
9	Metabolomics
10	Proteomics
11	In vivo microscopy
12	Electron microscopy

Summer school

- Duration 2 days
- PhD students must attend a summer school twice during the PhD period, access will also be granted to external bachelor, master, MD and PhD students, as they may become the next generation PhD students or postdocs once enthused by the research topic
- The program of the CRC summer schools will be divided in morning sessions held by the principal investigators and by invited speakers on topics relevant for the CRC. In the afternoon sessions, the students will present their project progress
- The participating students will select the two best student presentations for presentation at the next International Symposium of the CRC or at the Annual Meeting of the DGfN (CRC sessions in basic science slot)
- Two to three (inter-)national experts, invited by the students, will attend the summer school to give a lecture and to comment on the students' research
- Informal evening meetings

Special training courses

Each student of the REN^{PRO} will have free access to certified courses on animal handling and experimentation (FELASA), good-scientific practice and gene technology (Sachkunde als Projektleiter), which are regularly offered at both universities (<https://www.uni-regensburg.de/forschung/zentrale-tierlaboratorien/termine/index.html>; https://www.fau.de/universitaet/leitung-und-gremien/gremien-und-beauftragte/beauftragte/sachgebiet-tierschutzangelegenheiten/#collapse_13).

Annual meeting of the Deutsche Gesellschaft für Nephrologie (DGfN)

All participants in the REN^{PRO} are encouraged to attend the DGfN congress (<https://www.dgfn.eu/>) at least once with travel funds provided by the CRC. In addition to scientific exchange, the participation will also serve networking at the national level. Of course, the students are free to attend additional national or international scientific congresses.

Mentoring program

In accordance with the interdisciplinary nature of the research projects, the structure of the planned CRC and the requirements of the respective doctoral degree regulations, the doctoral student supervision will be taken over by a mentoring committee. The committee consists of the supervisor and two additional mentors, preferentially one basic scientist and one clinician scientist. If possible, the mentoring committee should consist of members of both universities. The commission members meet with the PhD student at least once per year for an intense scientific exchange.

Seminars, internal lab meetings and journal clubs

The principal investigators ensure that at least biweekly discussions of research results and literature will be held at the respective site.

Laboratory exchange visit

If a student wants to learn a new technology, this will be possible within the framework of a laboratory exchange visit in the partnering laboratory (funded by the CRC).