

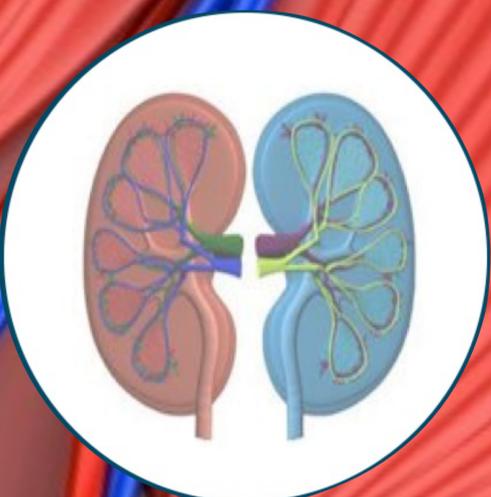
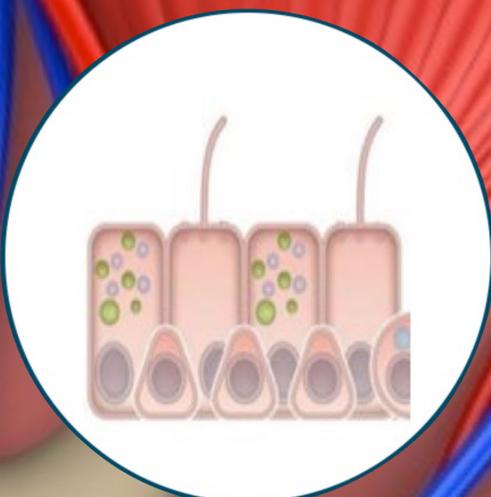
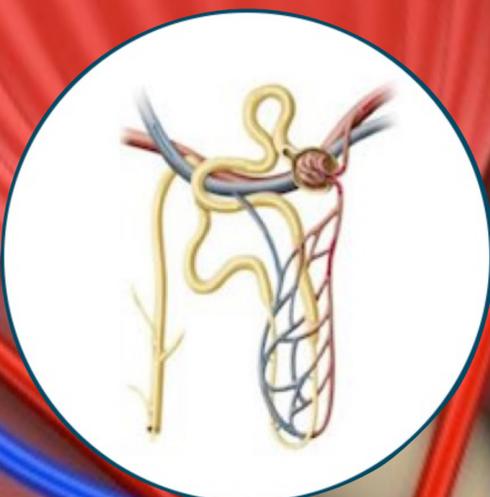
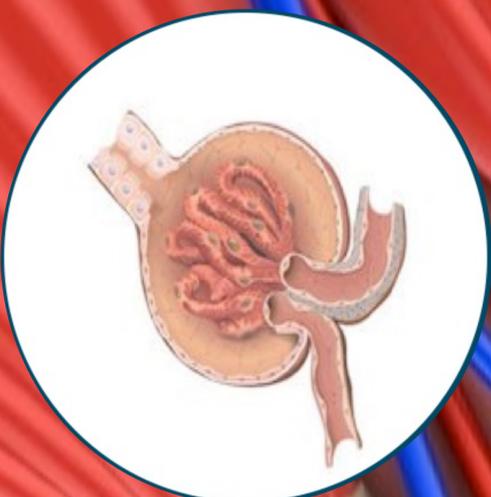
THE INS AND OUTS OF KIDNEYS: FROM PHYSIOMICS TO TRANSPLANTATION

JULY 1-5 2019 |

NIJMEGEN | THE NETHERLANDS | RU.NL/RADBOUDSUMMERSCHOOL/

SUBSCRIBE AT: 

RADBOUD SUMMER SCHOOL



LEARN ABOUT:



GLOMERULAR DISEASES



TUBULOPATHIES



CILIOPATHIES



TRANSPLANTATION

ORGANIZERS

- Jozanneke Huck 
- René Bindels 
- Joost Hoenderop 

CONTENT

- Lectures 
- Demonstrations 
- Hands-on 
- Interactive sessions 
- Workshops 
- Social programme 





Radboud Summer School

The ins and outs of Kidneys: from Physiomics to Transplantation

Preliminary course programme

1 – 5 July 2019





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Course overview

Course description

This intensive one-week course is directed at (inter)national (graduate) students (master, PhD, early postdoc level) who wish to develop their knowledge and skills on state-of-the-art developments in the field of renal research. You will learn how insights from renal research transformed the treatment of various kidney diseases - from little hope of survival to the latest transplantation techniques.

In the 1960s, people with kidney failure had little hope of survival. Dialysis was considered an extraordinary treatment and restricted to very few. Transplantation was still experimental. The rise in incidence of patients with chronic kidney disease worldwide, most probably reflecting the global epidemic of type 2 diabetes and the ageing of the populations in developed countries, is seen as a major health burden. Over the last decades, the technical level of research is much higher and the field of renal research uses exciting state-of-the-art methods to uncover new mechanisms in renal physiology and pathophysiology. For example, the identification of the genes and mutations involved in a variety of human kidney diseases has participated in the growth of knowledge and the appearance of new fields of renal research, podocyte biology, ciliopathies, and cystic diseases, as well as the role of the kidney in blood pressure regulation. New insights in renal research has also led to a new approach to treating kidney diseases and the renal complications of diabetes. Advances in surgical techniques and immunosuppression have made kidney transplantation a more cost-effective alternative to dialysis.

At the RadboudUMC, a close collaboration between renal researchers and nephrologists provides (bio)medical students interested in nephrology and renal physiology additional opportunities for research training. This summer school course on the ins and outs of kidneys: from physiomics to transplantation will be organized around renal research in general and the actual research in Nijmegen in particular, examining all aspects of kidney function. Topics include: water homeostasis, salt homeostasis and secretion, acid/base homeostasis, glomerular function, dialysis and transplantation, acute kidney failure, chronic kidney disease, diabetic nephropathy, polycystic kidney failure and a number of syndromes related to renal channelopathies. During the course you will take part in interactive lectures about each topic, combined with practicals on modern molecular techniques. You will be provided with hands-on demonstration at research labs and will be able to visit a modern renal dialysis unit at the hospital. After completing this course, you should have gained a basic understanding of renal research, be able to understand the molecular techniques behind renal research and apply the principles of renal mechanisms to the understanding and treatment of kidney diseases.

Learning Outcomes

After this course you are able to:

- understand renal physiology in depth,
- understand molecular techniques employed in renal research and interpret experimental results,
- interpret the latest insights in nephrology, hypertension, dialysis and transplantation,
- explain the mechanisms behind kidney disorders, hypertension and channelopathies.



Level of participant

- Master
- PhD
- Postdoc

For whom is the course designed

This course is designed for master students (in medicine, biomedical sciences, biology or related disciplines) and for aspiring and early stage PhD students as well as post-docs who are currently working or are planning to start working in the field of renal research.

Admission Requirements

Participants should have a background in medicine, biomedical sciences, biology or related disciplines. We expect basic knowledge of renal physiology and basic skills in interpreting and running experiments in the field of renal research.

Admission Documents

None

Date

1 – 5 July 2019

Course fee

€ 500

The course fee includes the registration fee, course materials, access to library and IT facilities, coffee/tea, lunch, and a number of social activities.

Discounts

€ 450 early bird discount - deadline 1 March 2019 (10%)

€ 425 partner + RU discount (15%)

€ 375 early bird + partner discount (25%)

Application Deadline

1 May 2019

How to apply

To apply for this course, please visit our website and press the apply now button.

[> More information on how to apply](#)



Course Leader

Dr. Jozanneke Kooij
Lecturer
Physiology Department
Radboud UMC



Jozanneke Kooij has a PhD in medicine from the VU University Medical Centre. She has a strong background in biological sciences and has used many techniques working as a neuroscientist in several laboratories and medical centres in Oxford, Heidelberg and Berlin. Kooij teaches kidney physiology at the Radboud university medical centre.

Key lecturers



Prof. Dr. René Bindels
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Prof. Dr. Joost Hoenderop
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Dr. Jan van den Brand
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Dr. Henry Dijkman
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Prof. Dr. Luuk Hilbrands
Dept. of Nephrology
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Prof. Dr. Ronald Roepman
Dept. of Genetics
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Dr. Ing. Bart Smeets
Dept. of Pathology
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Dr. Jitske Jansen
Dept. of Pathology
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Certificate

You will be awarded a certificate of attendance for actively participating and successfully completing all assignments. The certificate will state the amount of ECTS credits earned.

ECTS credits

Student workload at Dutch universities is expressed in ECTS credits. ECTS stands for European Credit Transfer and Accumulation System, a system widely used throughout the European Union. In the Netherlands, each ECTS credit represents 28 hours of work. We would like to point out that recognition of credits is at the discretion of your home institution. For this course you will be able to obtain 2 credits.

Study Load

Examples:

- | | |
|--------------------------------|------------|
| • Pre-course assignments | 0 hours |
| • Lectures | 18,5 hours |
| • Group work during the course | 10 hours |
| • Assignment(s) | 4,5 hours |
| • Practical work and tours | 7,5 hours |
| • Presentation(s) | 4,5 hours |
| • Other activities | 11 hours |

Total **56 hours**



Course organisation

“This course makes use of a wide variety of instruction media: lectures, group work using course literature, the Bright Space website and background literature, and last but not least, assignment and tours. Different people have different preferences and abilities, and by offering many forms for transferring knowledge we hope to address as many students as possible. An active participation is required and ensures the best results. Students work in small groups; in this way, they can help each other and learn from each other’s strengths.”

Brightspace

During Radboud Summer School, you will have access to our online learning environment Brightspace. One month before the summer course starts you will receive more information about Brightspace and how to access it. In your online course you will find the schedule and course related documents and or reading materials.

Literature

Recommended reading:

- Human Physiology, Boron & Boulpaep, 3rd edition, 2016
- The Kidney, Seldin & Giebisch, 5th edition, 2012
- The Kidney, Brenner & Rector, 10th edition, 2016

Assignments

The Challenge: A case will be presented related to: Glomerular diseases, Tubular disorders, Ciliopathies or Renal replacement therapies. Work as a team in groups of 5-6 participants to study one challenging medical case and give a detailed presentation on the last day of the course.

Group assignment Glomerular Diseases: Interpretation and evaluation electron microscopic images of patients with different glomerular diseases.

Group assignment Ciliopathies: Interpretation and evaluation of clinical and NGS sequencing data of patients with different renal ciliopathies (Case review, whole exome sequencing data filtering, short internet search and concise presentation of results to the other groups).

Assignments Biomarkers study: analyze and interpret a clinical epidemiological study to evaluate the predictive performance of a possible diagnostic or prognostic biomarker in kidney disease.

Assessment

During the course, group assignments will be carried out. There will be no separate exam. Students will not receive a grade, the course is assessed on a pass/fail basis.



Overall Schedule Radboud Summer School

	Sunday	Monday	Tuesday	Wednesday	Thursday	Friday	
08.30-09.00		Welcome Coffee/Tea	Coffee/Tea	Coffee/Tea	Coffee/Tea	Coffee/Tea	
09.00-09.30							
09.30-10.00		Opening Ceremony					
10.00-10.30							
10.30-11.00			Coffee/Tea	Coffee/Tea	Coffee/Tea	Coffee/Tea	
11.00-11.30							
11.30-12.00							
12.00-12.30		Lunch	Lunch	Lunch	Lunch	Lunch	
12.30-13.00							
13.00-13.30							Hand in bikes
13.30-14.00							
14.00-14.30							
14.30-15.00	Registration of participants & handing out keys accommodation to participants						
15.00-15.30		Coffee/Tea	Coffee/Tea	Coffee/Tea	Coffee/Tea	Coffee/Tea	
15.30-16.00							
16.00-16.30						Certificate Ceremony & Farewell Reception	
16.30-17.00							
17.00-17.30							
17.30-18.00							
18.00-18.30					Hand in bikes		
18.30-19.00	Bike distribution participants		Social Event	Social Event			
19.00-19.30							
19.30-20.00							
20.00-20.30	Social Event	Social Event					
20.30-21.00	Welcome reception						
21.00-21.30							

time slot for course activities
time slot for social events

We will provide you with coffee and tea three times a day and arrange lunch for you. The time slot allocated for lunch is 12.00-14.00, usually lunchtime lasts somewhere between 1–1½ hours.

Radboud Summer School is more than an academic event, it also provides you with a unique opportunity to meet other international students and to broaden your horizon. Our participants come from all over the world and all have a different cultural and academic background. More than 650 participants from 80 different countries joined the summer school in 2018. The summer school organization has carefully selected various social activities to bring you in contact with each other and to introduce you to the beautiful city of Nijmegen.

Below you will find some useful links to the Radboud Summer School website:

- [Social Events](#)
- [Accommodation](#)



Preliminary day-to-day programme

Monday

Time Table:

08.45-09.00	Welcome (Aula)
09.00-11.00	Opening Event
11.00-11.30	Ins and Outs – J. Hoenderop <i>Lecture: Welcome to course</i>
11.30-12.00	Ins and Outs – J. Hoenderop <i>Lecture: Introduction</i>
12.00-13.00	<i>Lunch (RIMLS)</i>
13.00-14.30	Visit Anatomical Museum
14.30-15.00	Challenge outline – R. Bindels
15.00-17.00	Challenge preparation (4 rooms/4 groups/4 topics/4 challenges) <i>Coffee & Tea</i>

Tuesday

Time Table:

08.30-09.30	Glomerular diseases – B. Smeets <i>Lecture: Clinical presentation and pathology</i>
09.30-10.30	Glomerular diseases – H. Dijkman <i>Lecture: From diseased kidney to diagnosis</i>
10.30-11.00	<i>Coffee & Tea</i>
11.00-12.30	Glomerular diseases – B. Smeets PR: Interpretation and evaluation of (electron-) microscopic images of patients
12.30-13.30	<i>Lunch (RIMLS)</i>
13.30-14.30	Glomerular diseases – B. Smeets <i>Lecture: Glomerular disease research</i>
14.30-15.30	Prepare challenge and <i>Coffee & Tea</i>
15.30-16.15	Tubular disorders – R. Bindels <i>Lecture: Guided tour along the nephron</i>
16.15-17.00	Tubular disorders – J. Hoenderop <i>Lecture: Tubulopathies</i>

Wednesday

Time Table:

08.30-10.30	Tubular disorders – Physiology – hands-on rotation
10.30-11.00	<i>Coffee & Tea</i>
11.00-12.30	Prepare challenge
12.30-13.30	<i>Lunch (RIMLS)</i>
13.30-14.30	Ciliopathies – R. Roepman <i>Lecture: Introduction to the clinical spectrum of ciliopathies and State-of-the-art research approaches to study ciliopathies</i>
14.30-15.00	Walk to study center
15.00-15.30	<i>Coffee & Tea</i>
15.30-16.30	Ciliopathies – R. Roepman <i>Lecture: Introduction to ciliopathy genetics and Next generation sequencing techniques</i>
16.30-17.30	Ciliopathies – R. Roepman <i>Group assignment: Interpretation and evaluation of clinical and NGS sequencing data of patients with different renal ciliopathies</i>



Thursday

Time Table:

08.30-10.00	Ciliopathies – R. Roepman Presentation of results group assignment to the other groups
10.00-11.00	Prepare challenge & <i>Coffee & Tea</i>
11.00-12.00	Replacements – L. Hilbrands <i>Lecture:</i> Renal replacement therapy: state of the art and current challenges
12.00-13.00	<i>Lunch (RIMLS)</i>
13.00-14.00	Replacements – L. Hilbrands <i>Case:</i> Renal transplant
14.00-15.00	Replacements – J. Jansen <i>Lecture:</i> Renal replacement therapies; stem cells meet biomaterials
15.00-15.30	<i>Coffee & Tea</i>
15.30-16.30	Replacements – L. Hilbrands <i>Tour 1:</i> Radboud Dialysis center
16.30-17.30	Replacements – J. Jansen <i>Tour 2:</i> A view in the lab
18.00-21.30	Walking to dinner (Restaurant Beau) Group photo moment for all participants “Ins and Outs of Kidneys”

Friday

Time Table:

08.30-09.00	Tutorial Biomarkers – J. van den Brand <i>Assignment 1:</i> What is a biomarker?
09.00-09.30	Tutorial Biomarkers – J. van den Brand <i>Assignment 2:</i> Epidemiologic study design
09.30-10.00	Tutorial Biomarkers – J. van den Brand <i>Lecture:</i> Predictive performance measures
10.00-10.30	Tutorial Biomarkers – J. van den Brand <i>Assignment 3:</i> Creating a multivariate prediction
10.30-11.00	<i>Coffee & Tea</i>
11.00-11.30	Tutorial Biomarkers – J. van den Brand <i>Assignment 3:</i> Creating a multivariate prediction
11.30-12.00	Tutorial Biomarkers – J. van den Brand <i>Assignment 4:</i> A manual on prediction modeling
12.00-13.00	<i>Lunch (RIMLS)/Hand in bikes</i>
13.00-15.00	Challenge Presentations
15.30-16.00	Coffee/Tea Break
16.00-18.00	Farewell Ceremony and drinks afterwards



Radboud Summer School



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