



NephroTools
Research Training Network



UNIVERSITY OF
LIVERPOOL

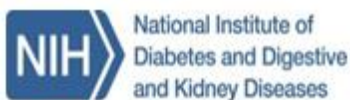
The Kidney: Development, Disease and Regeneration

8-10th September 2015

Central Teaching Hub
University of Liverpool

8th September: GUDMAP Workshop
9th-10th September: Main Conference

Programme





Tuesday 8th September 2015

Lecture Theatre C

Session 1: GUDMAP WORKSHOP

12.00 – 12.30 Registration: Tea and Coffee served in Atrium/G-Flex, Central Teaching Hub

13.00 -15.15 **Session 1: A series of tutorials informing delegates about ‘GUDMAP’ and ‘CellFinder’ and explaining how these exciting tools can be best applied to kidney research projects**

15.15-15.45 Afternoon tea break in Atrium/G-Flex

15.45-17.00 **Session 2: A hands-on work session where delegates will have the opportunity to use GUDMAP to address particular questions (e.g. dissecting a specific gene’s network in different types of renal cells during different stages of development)**

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We are delighted to announce the presence of the following instructors:

From the GUDMAP Consortium:

1. Professor Andy McMahon, Professor and Director, Eli and Edythe Broad Center for Regenerative Medicine and Stem Cell (Keck School of Medicine, University of Southern California, USA

Introduction to GUDMAP mouse strains.

2. Professor Richard Baldock, Head of Biomedical Systems Analysis, University of Edinburgh, UK

3. Professor Bruce Aronow, Director of the Bioinformatics Core, Cincinnati Children's Hospital Medical Centre, USA

Using the GUDMAP database and connected tools to identify genes, networks and cell types critical for kidney development.

4. Professor Jamie Davies, Professor of Experimental Anatomy, University of Edinburgh, UK

5. Dr Frances Wong, Member of the GUDMAP Editorial Office, Roslin Institute, UK

From the CellFinder Project:

6. Professor Andreas Kurtz,

Joint Acting Head, Brandenburg Center for Regenerative Therapies, Charité - Universitätsmedizin, Berlin, Germany





Wednesday 9th September 2015

Lecture Theatre C

Session 2: Kidney development

08.30 - 09.00 Registration for main conference

Chairs: Paul Winyard (University College, London) and Jamie Davies (University of Edinburgh)

09.00-09.10 **Trish Murray** (University of Liverpool, UK)

Introduction

09.10-10.00 **PLENARY: Andy McMahon** (University of Southern California, USA)

Development and repair of the nephron.

10.00-10.35 **Seppo Vainio** (Biocenter Oulu/InfoTech Oulu, Finland)

Emergence & Determinism in Kidney Cell Fates & Memory.

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10.35-11.10 **Adrian Woolf** (University of Manchester, UK)

Functional differentiation of urinary tract neurons.

11.10 - 11.40 Coffee break in Atrium/G-Flex

11.40-12.15 **Peter Hohenstein** (The Roslin Institute, UK)

Wt1 and beta-catenin in kidney development and disease.

12.15-12.50 **Jamie Davies** (University of Edinburgh, UK)

Processes of Patterning in Kidney Development.

12.50 - 14.00 Lunch/poster view in Atrium/G-Flex





Session 3: In vitro culture systems: directing stem cell differentiation and monitoring physiological properties

Chairs: Trish Murray and Dan Antoine

- 14.00-14.35 **Paul Jennings** (Medizinische Universität Innsbruck, Austria)
In vitro models for nephrotoxicity prediction.
- 14.35-14.55 **Ioannis Bantounas** (University of Manchester, UK)
TBC
- 14.55-15.10 **Valentina Magno** (Leibniz-Institut für Polymerforschung Dresden e. V., Germany)
TBC
- 15.10-15.25 **Heather Weber** (Leibniz-Institut für Polymerforschung Dresden e. V., Germany)
starPEG-heparin Hydrogels to Promote Renal Tubulogenesis.
- 15.25-15.40 **Elli Papadimitriou** (University of Turin)
CD133 surface molecule and CD133 positive extracellular vesicles (EVs) in kidney damage.
- 15.40 - 16.10 Coffee break
- 16.10-16.40 **Krasi Vasilev** (Mawson Institute, University of South Australia, Australia)
Functional coatings for medical devices, therapies and diagnostic.
- 16.40-16.55 **Isabel Hopp** (Biomer Technology Ltd and University of Liverpool, UK)
Novel polyacrylates to support the differentiation of kidney-derived stem/progenitor cells.
- 16.55-17.10 **Agnès Tort Piella** (University of Liverpool, UK)
Differentiation of Urine Progenitor-like Cells Towards a Proximal Tubule State.
- 17.10-17.25 **Johannes Grillari** (Evercyte GmbH, Austria)
Kidney cells as model system and production host.
- 17.25-17.40 **Gareth Bolitho** (Stratech Scientific Ltd, UK)
Shear Induced Cells for Better In Vitro Models.
- 17.40-18.00 **Speaker** (selected from abstracts)
TBC

18.00 – 21.00 “Cheeses of the UK & Wines of the World”: Poster/Tasting Session: G-flex





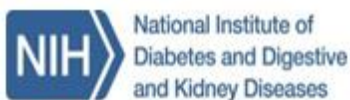
Thursday 10th September

Lecture Theatre C

Session 4: Medical devices and imaging strategies for monitoring kidney anatomy and function

08.30 - 09.00 Registration
Chairs: Norbert Gretz and Bettina Wilm

- 09.00-09.35 **John Bertram** (Monash University, Victoria, Australia)
Novel imaging and quantitation methods for studying glomeruli and podocytes.
- 09.35-10.10 **Norbert Gretz** (Institut für Medizintechnologie der Universität Heidelberg, Germany)
Brenner's hypothesis revisited: new tools and devices for the analysis of hyperfiltration.
- 10.10-10.30 **Speaker selected from abstracts**
TBC
- 10.30 - 11.00 Coffee break
- 11.00-11.20 **Speaker selected from abstracts**
TBC
- 11.20-11.55 **Rüdiger Rudolf** (Mannheim University of Applied Sciences, Germany)
Challenges in Renal 3D Microscopy.
- 11.55-12.10 **Marie Held** (University of Liverpool, UK)
Towards ex vivo live stem cell tracking in kidney organoids with light sheet-based fluorescence microscopy.
- 12.10-12.20 **Malcolm Wilkinson** (Kirkstall Ltd, UK)
Quasi-Vivo®: A new paradigm for modelling the kidney in vivo.
- 12.20 - 13.20 Lunch/poster view in G-flex





Session 5: Evaluating the efficacy of stem cell therapies in kidney disease models

Chairs: Benedetta Bussolati and Richard Poulsom

- 13.20-13.55 **Niels Câmara** (Universidade de São Paulo, Brazil)
Immunomodulation of inflammatory response by MSC-derived microvesicles: relevance in acute kidney injury?
- 13.55-14.30 **Marc Clancy** (University of Glasgow, UK)
Preventing damage, Promoting Repair: Stem cell therapy in kidney transplantation.
- 14.30-15.15 **Speakers selected from abstracts**
TBC
- 15.15 - 15.45 Coffee break
- 15.45-16.20 **Benedetta Bussolati** (Università degli Studi di Torino, Italy)
Strategies for the therapeutic use of human adult renal progenitor cells for kidney regeneration.
- 16.20-16.55 **Benjamin Dekel** (Sheba Medical Center, & Tel Aviv University, Israel)
Generating optimal human kidney stem/progenitor cells.
- 16.55-17.30 **Giuseppe Orlando** (Wake Forest University, USA)
Human biomaterials as a platform for kidney bioengineering and regeneration.
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- 17.30 Concluding remarks: Trish Murray





Conference Organising Committee

National Institute of Diabetes and Digestive and Kidney Diseases, NIH

Dr Deborah Hoshizaki

University of Liverpool

Dr P A Murray

Dr D Antoine

Dr B Wilm

Dr A Plagge

Mrs K Goodheart

NephroTools Training Network

Nephrotools is an FP7 Initial Training Network Comprising the Following Partners

Trish Murray (Liverpool, UK),

Benedetta Bussolati (Turin, Italy),

Carsten Werner (Dresden, Germany),

Paul Winyard (UCL, UK),

Simon Dixon (Biomer Technology Ltd, UK),

Rosalinde Masereeuw (Nijmegen, Netherlands),

Elena Levtchenko (Leuven, Belgium),

Norbert Gretz (Heidelberg, Germany),

Benjamin Dekel (Sheba Medical Center, Israel),

Don Wellings (SpheriTech Ltd, UK)

Associate partners

Ralph Heinrich (Freudenberg Forschungsdienste, Germany),

Leopoldo Della Ciana & Rossana Perciaccante (Cyanagen, Italy),

Andreas Kurtz (Charité Universitätsmedizin Berlin, Germany)

