

Wednesday 17th November 2021, 09:00-10.00

Pathology Grand Rounds: (CPD Accredited)

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Sponsored by the Jean Shanks Foundation and the
Pathological Society

Virtual Presentation (Joining Details below)

“Applying single-cell technologies in nephropathology”

Professor Menna Clatworthy



Professor Menna Clatworthy

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Menna Clatworthy read Medicine at Cardiff, completed her professional training in nephrology at Cambridge, and undertook a PhD at the University of Cambridge investigating IgG effector function in autoimmunity and infection. She was awarded the British Renal Association Raine Award and the Academy of Medical Sciences/Medical Research Society Young Investigator Award for this work. She subsequently completed a Wellcome Trust Intermediate Fellowship at Cambridge and the National Institutes of Health, Bethesda, USA. She is currently the Professor of Translational Immunology at the University of Cambridge Department of Medicine. She also works clinically as an Honorary Consultant Nephrologist and holds an Associate Faculty position in Cellular Genetics at the Wellcome Sanger Institute. Her research is focused on understanding the regulation of antibody generation and effector function, novel methods of targeting humoral immunity in transplantation and autoimmunity and the role of tissue-environment in shaping resident immune cell activation and function, particularly in the kidney. She also an active participant in the Human Cell Atlas Project (<https://www.humancellatlas.org>), utilizing single cell technologies to better understand the cellular landscape of the human kidney.

ABSTRACT:

Accurate characterisation of cellular phenotype, transcriptome, spatial organisation within organs, and intercellular signalling networks, is crucial to deliver a better understanding of the cellular mechanisms underpinning physiology, and the perturbations that lead to disease. Light microscopy, combined with immunostaining and electron microscopy, represent the traditional approaches to diagnostic and prognostic categorisation of pathologies in nephrology and transplantation. More recently, attempts have been made to refine diagnostic categories by applying molecular phenotyping using bulk transcriptional analysis of biopsies. However, the data generated lacks the resolution to assign cellular identity to transcripts and the ability to interrogate cellular signalling networks. The rapid expansion of single-cell technologies overcomes these limitations and will transform our understanding of human biology. The Human Cell Atlas project is an international consortium that aims to use technologies such as single cell RNA sequencing to generate a comprehensive compendium of cell types and states in all human organs, across life-span and disease states. I will discuss these technologies, progress to date in generating version 1 of the Human Kidney Cell Atlas and consider its potential for future translation to clinical practice in nephrology and transplantation.

Joining Details for all Participants (Path Soc Members and Non-Members):

https://us06web.zoom.us/webinar/register/WN_xMW8_RZbRS-Jfmslrr4Kkw

Will also available on You Tube: <https://youtu.be/lkdEyTxTQac>

Recording: This lecture will be recorded subject to permission of the speaker.