

ISSRPPM – June 10th–June 21st 2024 - Schedule

Week 1: June 10th to June 15th 2024													
	Monday 10		Tuesday 11		Wednesday 12		Thursday 13		Friday 14		Saturday 15		
7:30-8:00 am	Breakfast		Breakfast	Kidney biopsy - procurement @ bed side - small group	Breakfast	Kidney biopsy - procurement @ bed side - small group	Breakfast	Kidney biopsy - procurement @ bed side - Small group	Breakfast	Kidney biopsy - procurement @ bed side - small group	Breakfast		
8:00-8:30 am	Registration												
8:30-9:00 am	Welcome & orientation		Diagnostic kidney biopsy - Pathology protocol		Independent review of cases		Independent review of cases		Independent review of cases		Storage and inherited metabolic diseases		
9:00-9:30 am	Clinical indication & research kidney biopsy		Algorithmic approach to glomerular diseases			Independent review of cases		Annotation and labeling practice		Independent review of cases	Lupus nephritis		
9:30-10:00 am	Standardization of preanalytics & tissue procurement		Descriptor scoring versus interpretative diagnoses		Histotools		Image analysis / Feature extraction / Classification		Implementation of image analysis in clinical practice		Other autoimmune diseases		
10:00-10:30 am	Systemic reporting of medical kidney diseases		Podocytopathies										Review of cases with instructors
10:30-11:00 am			Collagenopathies		Batch effect		Q/A						
11:00-11:30 am	Coffee break		Coffee break		Coffee break		Coffee break		Coffee break		Coffee break		
11:30-12:00 pm	Introduction to Digital Pathology		Obesity-related glomerulopathies		Deep learning Introduction + Concepts (including foundation models)		Hands-on: Using QuPath to build KM curves from IHC images (cell segmentation, feature extraction, + km building)		IC-MPGN and Post-Peri Infectious disease		Bring your own difficult case		
12:00-12:30 pm	Introduction to Image Analysis		Mitochondriopathies		Annotation best practices				Bring your own difficult case				
12:30-1:00 pm	Introduction to Omics		Genetic of Podocytopathies						Annotation and labeling practice	Annotation and labeling practice		Annotation and labeling practice	Annotation and labeling practice
12:30-1:00 pm	Independent review of cases												
1:00-1:30 pm	Lunch		Lunch		Lunch		Lunch		Lunch		Lunch		
1:30-2:00 pm													
2:00-2:30 pm	Kidney Structure & Molecular Anatomy		Independent review of cases		Hands-on feature extraction using ImageJ		Classification of Vasculopathies		Diseases of complement dysregulation (TMA - HUS - C3 glomerulopathy and C3 glomerulonephritis)				
2:30-3:00 pm	Ontologies		Motivation for computational pathology				Classification of Vasculitis		Crescentic GN			Thrombotic microangiopathies	
3:00-3:30 pm	Ontologies practice	Tissue procurement/ processing practice - Lab	Overview of Statistical methods applied to kidney diseases 1 - Basic stat				Membranous nephropathy		Ultrastructural pathology			Monoclonal disease of renal significance	
3:30-4:00 pm			Overview of Statistical methods applied to kidney diseases 1 - ML		Organized deposits & special technologies (Amyloidosis - Fibrillary and immunotactoid)								
4:00-4:30 pm	Coffee break		Coffee break		Coffee break		Coffee break		Coffee break				
4:30-5:00 pm	Tissue procurement/ processing practice - Lab	Ontologies practice	ML Introduction + general ML concepts (metrics, KM curves, cross-validation, etc.)		IgA NP and Vasculitis		Review of cases with instructors		Independent review of cases				
5:00-5:30 pm			Stat Q/A	Image analysis Q/A	Presentation of difficult/rare cases				Presentation of difficult/rare cases				
5:30-6:00 pm	Q/A		Presentation of difficult/rare cases		Early dismissal - Social dinner						Presentation of difficult/rare cases		

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	Week 2: June 17th to June 21st 2024											
	Monday 17		Tuesday 18		Wednesday 19			Thursday 20			Friday 21	
7:30-8:00 am					Breakfast							
8:00-8:30 am	Breakfast		Breakfast		Integrated pathology - Case presentation (IgA NP phenotypes/endophenotypes)			Breakfast			Breakfast	
8:30-9:00 am												
9:00-9:30 am	Algorithmic approach to tubulointerstitial diseases		Challenges in ML in pathology (secure AI, sustainable AI)		Overview - From Genes to transcripts: Technologies and Analytical approaches in kidney tissue and biofluids							
9:30-10:00 am	Tubulointerstitial disease - Part 1		Standardization		Overview - From Proteins to metabolites to pathway mapping: Technologies and Analytical approaches in kidney tissue and biofluids			1. Nephroseq			1. Nephroseq	
10:00-10:30 am	Tubulointerstitial disease - Part 2		Digital Pathology regulation + scalability		Overview - Bringing it all together: Multiscalar data integration for molecular disease definition			2. KPMP tool suite: Explorer, Spatial Viewer			2. KPMP tool suite: Explorer, Spatial Viewer	
10:30-11:00 am	Cystic diseases of the kidney		Usability - Quality - Safety		Q/A - Discussion			3. Kidney CellxGene KPMP, HCA and beyond			3. Kidney CellxGene KPMP, HCA and beyond	
11:00-11:30 am	Coffee break		Coffee break		Coffee break			4. Working with consortium data sets: TranSMART and beyond			4. Working with consortium data sets: TranSMART and beyond	
11:30-12:00 pm	Review of cases with the instructor		Risk management and Education		Overview - How to find knowledge in data: Introduction and principles in data mining strategies and interfaces for the nephropathologist			5. Genetic data bases: From ClinVar to NephQLT			5. Genetic data bases: From ClinVar to NephQLT	
12:00-12:30 pm	Bring your own difficult case	Independent review of cases	Q/A		Overview - How to find knowledge in data: Introduction into specific search engines (Nephroseq, TranSMART, KPMP explorer, spatial viewer, CellxGene, HubMAP explorer)			1. Nephroseq			1. Nephroseq	
12:30-1:00 pm			Independent review of cases		Q/A - Discussion			2. KPMP tool suite: Explorer, Spatial Viewer			2. KPMP tool suite: Explorer, Spatial Viewer	
1:00-1:30 pm	Lunch		Lunch		Lunch			3. Kidney CellxGene KPMP, HCA and beyond			3. Kidney CellxGene KPMP, HCA and beyond	
1:30-2:00 pm								4. Working with consortium data sets: TranSMART and beyond			4. Working with consortium data sets: TranSMART and beyond	
2:00-2:30 pm	Ultrastructural pathology		Independent review of cases		The KPMP kidney atlas			5. Genetic data bases: From ClinVar to NephQLT			5. Genetic data bases: From ClinVar to NephQLT	
2:30-3:00 pm	CKD in diabetes							Lunch			Lunch	
3:00-3:30 pm	CKD of unknown etiology		Radiopathomics					Current Consortia - Overview			Kidney atlas - Exercise with instructor	
3:30-4:00 pm	Independent review of cases		Genetic of kidney diseases: guidelines for testing					Methodologies to visualize image data			Next generation nephropathology	
4:00-4:30 pm	Coffee break		Coffee break					Fusion training			Summary and Conclusions	
4:30-5:00 pm	Independent review of cases		Overview on clinical trials					Coffee break			Fusion usability study	
5:00-5:30 pm	The aging kidney		Overview - Molecules in their kidney home: Opportunities and challenges in spatial molecular analyses					Fusion usability study				
5:30-6:00 pm	Integrated pathology - Case presentation (CKD in diabetes phenotypes/endophenotypes)		Integrated pathology - Case presentation (AKI phenotypes/endophenotypes)		Early dismissal - Social dinner			Integrated pathology - Case presentation (FSGS/MCD phenotypes/endophenotypes)				

LEGEND		
INTRODUCTORY MODULE	Lecture	Practice
RENAL PATHOLOGY MODULE	Lecture	Practice
IMAGE ANALYSIS MODULE	Lecture	Practice
OMICS MODULE	Lecture	Practice
DATA INTEGRATION	Case presentation	