



SCHOOL FRAMEWORK

The CME-accredited International Summer School of Renal Pathology & Precision Medicine (ISSRPPM) will be held at the University of Bari in August and September 2026 with state-of-the-art facilities. This educational endeavor is dedicated to advancing knowledge and improving management of kidney disease. The school builds on previous experience gained through the International Summer School of Renal Pathology (ISSRP) since 2011 and aims to train the next generation of renal pathologists to practice integrated nephropathology.

The school will be organized in 4 modules:

- Precision Medicine – Basic Concepts from tissue procurement to data extraction and analysis
- Pathology of Native Kidney Diseases with clinico-pathologic and molecular correlation
- Digital Pathology and Image Analysis of Kidney Diseases
- Molecular Nephropathology & Data Integration

Each module will include:

- Formal educational lectures
 - Renal Pathology
 - Image analysis
 - Omics technologies
- Hands-on laboratory experience in small groups
 - Case review and case study in small groups with trainer
 - Image analysis
 - Relevant Omics technologies
- Data integration & phenotyping-endotyping – Case studies

CURRICULUM

RENAL PATHOLOGY OF NATIVE KIDNEY DISEASES

- Podocytopathies
- Mitochondriopathies
- Collagenopathies
- Immune-complex-mediated glomerulonephritis
- Complement-mediated glomerulonephritis
- Crescentic glomerulonephritis
- Vascular diseases
- Monoclonal diseases of renal significance & organized renal deposits
- Diabetic kidney disease
- Chronic kidney disease
- Tubulointerstitial diseases
- Renal storage diseases

COMPUTATIONAL IMAGE ANALYSIS

- Principles of digital pathology
- Histo-tools
- Annotation-segmentation best practices
- Machine Learning classifiers
- Pathomic feature extraction
- Digital biomarkers
- Visualization tools
- Image analysis in clinical practice

MOLECULAR NEPHROPATHOLOGY

- Genetics of kidney diseases
- Technologies and analytical approaches in kidney tissue and biofluids
- Spatial omics analysis
- Multiscale data integration
- Principles of data mining strategies and interfaces

- Specific search engines
- Data integration

WEEK 1: AUGUST 24th TO AUGUST 29th 2026

	MONDAY 24	TUESDAY 25	WEDNESDAY 26	THURSDAY 27	FRIDAY 28	SATURDAY 29					
07:30-08:30 am	Breakfast	Breakfast	Kidney biopsy Procurement @ bed side Group 1	Breakfast	Kidney biopsy Procurement @ bed side Group 2	Breakfast	Kidney biopsy Procurement @ bed side Group 3	Breakfast	Kidney biopsy Procurement @ bed side Group 4	Pathology of lupus nephritis and other autoimmune diseases	
08:30-09:00 am	Registration										Independent review of cases
09:00-09:30 am	Clinical indication & research kidney biopsy	Independent review of cases	Independent review of cases	Independent review of cases	Independent review of cases	Challenging case presentation					
09:30-09:45 am	Standardization of preanalytics & tissue procurement	Independent review of cases	Independent review of cases	Independent review of cases	Independent review of cases						
09:45-10:00 am	Diagnostic kidney biopsy protocol	Algorithmic approach to glomerular diseases	ML introductory + general concepts - Conventional versus foundation AI	Image analysis / Feature extraction / Classification / Trajectories	Implementation of digital pathology and image analysis in clinical practice	Ultrastructural pathology Interactive exercise					
10:00-10:15 am	Systemic reporting of medical kidney diseases						Pathology of podocytopathies	HistoTools	Electron microscopy lab		Hands on Image analysis lab
10:15-10:30 am	Systemic reporting of medical kidney diseases						Pathology of obesity-related glom. dis.				
10:30-10:45 am	Introduction to digital path. & image analysis	Pathology of mitochondriopathies									
10:45-11:00 am	Introduction to digital path. & image analysis	Pathology of mitochondriopathies									
11:00-11:30 am	Coffee break	Coffee break	Coffee break	Coffee break	Coffee break	Coffee break					
11:30-11:45 pm	Introduction to Omics	Pathology of collagenopathies	Batch effect	Hands-on Image analysis Lab	Hands on Image analysis lab	Electron microscopy lab					
11:45-12:00 pm		Descriptor scoring	Annotation best practices								
12:00-12:15 pm		Genetic: podocytopathies, collagenopathy, mitochondriopathies									
12:15-12:30 pm	Ontologies	Anti nephrin podocytopathy - Diagnostic testing & theraputic approaches	Hands-on Image analysis lab		Immunofluorescence and Ultrastructural pathology - Interactive exercise	Bring your difficult cases - Discussion with instructor	Independent review of cases				
12:30-12:45 pm											
12:45-01:00 pm											
01:00-02:00 pm	Lunch	Lunch	Lunch	Lunch	Lunch	Lunch					
02:00-02:15 pm	Kidney Structure & Molecular Anatomy	Integrated case presentation	Vasculopathies & vasculitis	Membranous nephropathy (primary & secondary)	Pathology of infection-associated GN	Pathology of lupus nephritis and other autoimmune diseases					
02:15-02:30 pm		Statistical methods applied to kidney diseases	Pathology of crescentic GN		Storage & inherited metab. dis. (Fabry's, etc)		Pathology of compl. dysregulation (C3 GP)				
02:30-02:45 pm			Pathology of IgA NP & Vasculitis	Genetic: storage&inherited metab. dis.			Pathology of TMA (AHUS, etc)				
02:45-03:00 pm			Genetic and molecular of IgA NP		Challenging case presentation		Challenging case presentation				
03:00-03:15 pm		Case presentation - IgA endophenotypes	Image analysis - The big picture	Independent review of cases				Independent review of cases	Special technologies applied to diagnose glomerular diseases		
03:15-03:45 pm											
03:45-04:00 pm	Coffee break	Coffee break	Coffee break	Coffee break	Coffee break		Coffee break				
04:00-04:30 pm	Ontology lab	Digital Pathology Scalability and regulations	Optional - Independent review of cases	Optional - Independent review of cases	Pathology of MGRS & organized deposits		Pathology of lupus nephritis and other autoimmune diseases				
04:30-05:00 pm		Optional - Independent review of cases			Optional - Independent review of cases			Optional - Independent review of cases	Special technologies applied to diagnose kidney diseases		
05:00-07:00 pm					Optional - Independent review of cases						
			Social Dinner at Violla Romanazzi								

LEGEND

INTRODUCTORY MODULE Lecture Practice

RENAL PATHOLOGY MODULE Lecture Practice
IMAGE ANALYSIS MODULE Lecture Practice

OMICS MODULE Lecture Practice
DATA INTEGRATION Case Presentation

First name	Last name	Country	Gender
Maryam	Alexander	USA	F
Hether	Ascani	USA	F
Tarek	Ashkar	USA	M
Laura	Barisoni	USA	F
Peter	Boor	Germany	M
Amelie	Dendoven	Belgium	F
Sean	Eddy	USA	M
Felix	Eichinger	USA	M
Loreto	Gesualdo	Italy	M
Leah	Herlitz	USA	F
Stephen	Hewitts	USA	M
Jeffrey	Hodgin	USA	M
Tobias	Huber	Germany	M
Sanjay	Jain	USA	M
Andrew	Janowczyk	USA	M
Lindsey	Johnstone	USA	F
Mark	Keller	USA	M
Jasper	Kers	The Netherlands	M
Maxmilian	Koeller	Austria	M
Matthias	Kretzler	USA	M
Kyle	Lafata	USA	M
Adele	Mitrotti	Italia	F
Viji	Nair	USA	F
Opeyemi	Olabisi	USA	M
Carrie	Philips	USA	F
Paola	Pontrelli	Italy	F
Victor	Puelles	Germany	M
Peter	Robinson	Germany	M
Pier	Ronco	France	M
Avi	Rosenberg	USA	M
Michele	Rossini	Italy	M
Andrew	Rule	USA	M
Surya	Seshan	USA	F
Sanjay	Sethi	USA	M
John	Tomatzewski	USA	M
Benjamin	Wooden	USA	M
Jarcy	Zee	USA	F