

SUP NEWSLETTER

March 2024

Message from the President, John Brealey

I hope everyone had an enjoyable Xmas and New Year. The last twelve months have flown by, and I'm sure everyone has been busy juggling personal and work commitments. From my own perspective, 2023 saw the Electron Microscopy lab in which I work receive its highest recorded annual specimen accessions. Maybe this reflects a rebound in clinical admissions following COVID-19, but for whatever reason, it indicates to me that EM is just as relevant as ever in diagnostic pathology. Unsurprisingly, EM has been of great importance in the diagnostic work-up for many of the renal biopsies we received, but we've also found EM to be highly informative for several other tissue types. Using muscle biopsies as an example, we've noticed an increase in the proportion of cases in which EM is contributory in the diagnostic work-up. Perhaps this reflects our own professional development as microscopists in recognizing ultrastructural markers of disease, but I believe another factor is the ever-expanding range of molecular and genetic tests available to clinicians to 'tease out' one type of disease from another has created an environment where EM has a renewed sense of relevance by providing morphological correlates to these newly defined disease entities.

From an SUP point-of-view, there are several newsworthy items that I would like to mention below.

SUP Website

The last year has seen us transition to a new website 'front end'. I would like to thank Sara Pawlak, Eric Wartchow and our webmaster, Przemek Krawczyk, who have put a tremendous amount of work and countless hours into overseeing this project, the result of which is improved user friendliness and greater functionality for SUP members. The response so far from members has been rather muted however, with time, I believe we can make the website a useful resource and a discussion forum for matters pertaining to ultrastructural pathology. Another feature of the new website is its improved billing functionality that has allowed SUP to link products directly through the website. As an example, the various registration options available at the upcoming UltraPath XXI meeting in Sydney have been linked directly to Stripe billing products that enable direct transactions through the SUP website. Moreover, Eric is working on a range of QR codes we can use at UltraPath XXI to facilitate the processing of any late registration billing.

UltraPath XXI

UltraPath XXI in Sydney is fast approaching and I encourage all members to consider attending this wonderful conference, either in person or virtually via Zoom. The UltraPath XXI program includes a balanced mix of local and international speakers. The renal component is particularly strong featuring updates on various glomerular diseases in which electron microscopy can play an important diagnostic role. To name just a few, Dr Sanjeev Sethi will present his latest findings on the various antigens associated with membranous nephropathy, Dr Anthony Chang will provide an update on thrombotic microangiopathy, Dr Jonathan Zuckerman will present an update on C3 glomerulopathy, Dr Astrid Weins will present her ground-breaking research on podocytopathies, Dr Guillermo Herrera will present an update on monoclonal gammopathy of renal significance (MGRS), and Dr

Candice Roufousse will provide a progress report on the Banff Electron Microscopy Working Group for renal allograft pathology. Furthermore, numerous interesting case studies involving electron microscopy are to be presented by eminent renal pathologists. Beyond renal pathology, UltraPath XXI offers a wide variety of ultrastructural pathology topics including presentations on muscle & nerve, liver, heart, pulmonary, cilia, cornea, platelets, infectious diseases, pediatric diseases, and new technologies. A special session on tumour pathology will be held in honour of Dr Robert Erlandson who passed away recently. I'm sure his book, *Diagnostic Transmission Electron Microscopy of Tumors*, is regarded by many of our members as a 'must have' reference. Included within the full UltraPath XXI registration is a one-day EM Tutorial Day convened jointly by SUP and the Royal College of Pathologists of Australasia Quality Assurance Program (RCPAQAP). The EM Tutorial Day is designed for newcomers to electron microscopy and those who are looking to refresh their skills in ultrastructural pathology. In addition to the presentations on offer, morning tea, lunch, and afternoon tea are provided for in-person attendees and included in registration. The social aspect of UltraPath conferences has always been a strong point – and Sydney 2024 will be no different with welcome drinks, an evening of social lawn bowls, and a Gala Dinner at Taronga Zoo that includes a native fauna experience. The EM Tutorial Day and social events are included in the full registration package. I should also mention that SUP members receive a 10% discount on registration for UltraPath XXI. The conference occurs during school holidays, so please attend to your accommodation arrangements as soon as possible to avoid missing out. I hope to see you in Sydney!

United States & Canadian Academy of Pathology (USCAP)

USCAP 2024 will be held in Baltimore, Maryland March 23-28. SUP will host two events during the week both of which we plan to be accessible via Zoom link for those unable to attend in person (although the cost of providing this service may be prohibitively expensive). The first event is the SUP Executive Council Business Meeting on Saturday March 23, 2:00 - 3:30pm at the Hilton Baltimore Inner Harbor Hotel in the Mencken Room. The second event is the SUP Electron Microscopy Companion Meeting on Sunday March 24, 4:30-6:30pm at the Baltimore Convention Center in BCC Room 301. The target audience for the Companion Meeting includes general surgical pathologists and subspecialty pathologists, ultrastructural pathologists, pathologists in training, and pathologists wishing to learn about the current and future applications of diagnostic electron microscopy. Three sessions are planned for the Companion Meeting...

1. Platelet Electron Microscopy: Platelet Morphology, Storage Pool Disorders, and Sample Preparation for Thin Section and Whole Mount TEM.
Dong Chen, MD PhD; Chair-Division of Hematopathology; The Mayo Clinic, Rochester, Minnesota, USA
2. Ultrastructural Characteristics of Podocytopathies
Virginie Royal, MD; Professor of Pathology, Hopital Maisonneuve-Rosemont, Universite de Montreal, Montreal, Canada
3. Fibril-Forming Organelles (FFOs): The Machinery that Manufactures Amyloid Fibrils in Mesangial Cells in the Kidney, a Translational Journey

Guillermo Herrera, MD; Locke Eminent Scholar, Professor and Chair Department of Pathology, Whiddon College of Medicine, University of South Alabama, Mobile, Alabama, USA

Electron Microscopy in Pathology Course

The Electron Microscopy Center at the Amsterdam UMC was the location for an electron microscopy training course held recently over three days, Feb 27-29. The course was convened by a local Dutch committee including Dr Nicole van der Wel, the SUP Future Meetings Representative. The course was offered in hybrid format and presented by a group of distinguished speakers including Dr Eric Wartchow, the SUP President-Elect. Nicole reports the course was well attended with 15 in-person and 19 virtual delegates. The high level of interest in this meeting indicates a need for education at the introductory level of ultrastructural pathology. Nicole kindly provided a group photo (shown below).



John Brealey
President
Society for Ultrastructural Pathology
Email: president@ultrapath.org

And finally, please allow me to leave you with some 2023 publications by members of our SUP Executive Council and past presidents of the Society. Apologies to those whose publications I've missed!

Nucleocapsid Protein Accumulates in Renal Tubular Epithelium of a Post-COVID-19 Patient. Grootemaat AE, Wiersma N, van der Niet S, Schimmel IM, Florquin S, Reits EA, **Miller SE, van der Wel NN.**

Microbiol Spectr. 2023 Dec 12;11(6):e0302923. doi: 10.1128/spectrum.03029-23

Current Utilization of Electron Microscopy in the Pediatric Pathology Setting: A Survey by the SPP Practice Committee.

Warren M, Reed RC, Prasad V, Rajaram V, Roberts D, Kreiger PA, Darrisaw L, Besmer S, Church AJ, Keisling M, Craver RD, Cole BL, Robers J, Lopez-Terrada D.

Pediatr Dev Pathol. 2023 Jul-Aug;26(4):411-422. doi: 10.1177/10935266231170102

Pediatric Sertoli-Leydig Cell Tumors of the Ovary: An Integrated Study of Clinicopathological Features, Pan-Cancer-Targeted Next-Generation Sequencing and Chromosomal Microarray Analysis From a Single Institution.

Yang B, Chour W, Salazar CG, Zamiara P, Schmidt RJ, Raca G, Shillingford N, Zhou S, **Warren M**, Parham DM, Pawel B, Wang LL.

Am J Surg Pathol. 2023 Nov 10. doi: 10.1097/PAS.0000000000002149

Lysophosphatidic Acid Receptor 1 Antagonist (EPGN2154) Causes Regression of NASH in Preclinical NASH Models.

Bhattacharjee J, Beaton G, Ravula SB, Lee SJ, Bacon KB, Jenkinson CP, **Warren M**, Tucci FC, Kohli R.

Hepatology Commun. 2023 Nov 22;7(12):e0323

Intraoperative Lymph Node Assessment (Touch Preparation Only) for Metastatic Breast Carcinoma in Neoadjuvant and Non-Neoadjuvant Settings.

Ersoy E, Elsayad M, Pandiri M, Knee A, Cao QJ, **Crisi GM**.

Arch Pathol Lab Med. 2023 Feb 1;147(2):149-158

Extensive Palpable Purpura Preceding Renal Dysfunction in Immunoglobulin A Vasculitis Due to Coronavirus-19 Infection.

Ahlers CG, Wang B, **Howell DN**, Choksi V.

Am J Med. 2023 Jul;136(7):655-658. doi: 10.1016/j.amjmed.2023.03.028

Renal Biopsy in Systemic Infections: Expect the Unexpected.

Wang B, Grand A, Schub M, Singh H, Ortiz Melo DI, **Howell DN**.

Ultrastruct Pathol. 2023 Jan 2;47(1):22-29. doi: 10.1080/01913123.2022.2164099

A High-Pressure Situation.

Miller MJ, **Hicks MJ**, Foroozan R, Brodsky MC.

Surv Ophthalmol. 2023 Jul-Aug;68(4):815-820

Urinary CD163 is a Marker of Active Kidney Disease in Childhood-Onset Lupus Nephritis.

Inthavong H, Vanarsa K, Castillo J, **Hicks MJ**, Mohan C, Wenderfer SE.

Rheumatology (Oxford). 2023 Mar 1;62(3):1335-1342

Polygenic Genetic Variation Affecting Antibody Formation Underlies Hypertensive Renal Injury in the Stroke-Prone Spontaneously Hypertensive Rat.

Dhanda IS, Zhu Y, Joshi AS, **Hicks MJ**, Braun MC, Doris PA.

Am J Physiol Renal Physiol. 2023 Sep 1;325(3):F317-F327

Daratumumab in the Treatment of C3 Glomerulopathy with Monoclonal Gammopathy: A Case Report and Literature Review.

Esposito P, Picciotto D, Costigliolo F, Russo E, Macciò L, **Cenacchi G**, Cagnetta A, Cea M, Lemoli RM, Viazzi F.

Front Med (Lausanne). 2023 Sep 1;10:1266172

Correlations Between Cardiac Magnetic Resonance and Myocardial Histologic Findings in Fabry Disease.

Ditaranto R, Leone O, Lovato L, Niro F, **Cenacchi G**, Papa V, Baldovini C, Ferracin M, Salamon I, Kurdi H, Parisi V, Capelli I, Pession A, Liguori R, Potena L, Seri M, Martin Suarez S, Galiè N, Moon JC, Biagini E.

JACC Cardiovasc Imaging. 2023 Dec;16(12):1629-1632

Fabry Disease Nephropathy: Histological Changes with Nonclassical Mutations and Genetic Variants of Unknown Significance.

Santostefano M, Cappuccilli M, Gibertoni D, Fabbrizio B, Malvi D, Demetri M, Capelli I, Tringali E, Papa V, Biagini E, **Cenacchi G**, Galdi A, Donadio V, Liguori R, Zoli G, La Manna G, Pasquinelli G.

Am J Kidney Dis. 2023 Nov;82(5):581-596.e0

The Use of Adjuvant Chemotherapy is Not Associated with Recurrence or Cancer-Specific Death Following Curative Resection for Stage III Rectal Cancer: A Competing Risks Analysis.

Ng KS, **Chan C**, Rickard MJFX, Keshava A, Stewart P, Chapuis PH.

World J Surg Oncol. 2023 May 18;21(1):152

Splenic Flexure Cancer Survival: A 25-Year Experience and Implications for Complete Mesocolic Excision (CME) and Central Vascular Ligation (CVL).

Naidu K, Chapuis PH, Brown KGM, **Chan C**, Rickard MJFX, Ng KS.

ANZ J Surg. 2023 Jul-Aug;93(7-8):1861-1869

Immunohistochemical Markers as Predictors of Prognosis in Multifocal Prostate Cancer.

Segalés L, Juanpere N, Gallarín N, Lorenzo M, López D, Perera-Bel J, Rodríguez-Vida A, Fumadó L, Cecchini L, Bellmunt J, **Lloreta-Trull J**, Hernández-Llodrà S.

Virchows Arch. 2023 Nov 28. doi: 10.1007/s00428-023-03699-z

Patterns of Podocyte Infolding Glomerulopathy and Collapsing Glomerulopathy Seen in a Patient with Systemic Lupus Erythematosus: A Case Study.

Kim C, Tan RYP, Tan J, Otto S, Nolan J, **Brealey J**, Rao NN.

Pathology. 2023 Oct;55(6):886-890. doi: 10.1016/j.pathol.2023.02.005. Epub 2023 Apr 6.

The Diagnosis of Asbestosis in the 21st Century: A Clinicopathological Correlation of 102 Cases.

Carney JM, Sporn TA, **Rogli VL**, Pavlisko EN.

Ultrastruct Pathol. 2024 Jan 8:1-12. doi: 10.1080/01913123.2023.2299874.

Diagnostic Approach to Pulmonary B-Cell Lymphomas in Small Biopsies, with Practical

Recommendations to Avoid Misinterpretation.

Pina-Oviedo S, **Roggli VL**, Sporn TA, Li H, Glass C, DiBernardo LR, Pavlisko EN.
Diagnostics (Basel). 2023 Oct 26;13(21):3321. doi: 10.3390/diagnostics13213321.

The Overdiagnosis of Diffuse Mesothelioma: An Analysis of 311 Cases with
Recommendations for the Avoidance of Pitfalls.

Carney JM, **Roggli VL**, Glass CH, Piña-Oviedo S, Pavlisko EN.
Ann Diagn Pathol. 2023 Dec 21:152248. doi: 10.1016/j.anndiagpath.2023.152248.

Alveolar Mitochondrial Quality Control During Acute Respiratory Distress Syndrome.

Kraft BD, Pavlisko EN, **Roggli VL**, Piantadosi CA, Suliman HB.
Lab Invest. 2023 Sep;103(9):100197. doi: 10.1016/j.labinv.2023.100197.

Asbestos and Iron.

Ghio AJ, Stewart M, Sangani RG, Pavlisko EN, **Roggli VL**.
Int J Mol Sci. 2023 Aug 3;24(15):12390. doi: 10.3390/ijms241512390.

The Interplay Between the Immune System, Tumor Suppressor Genes, and Immune
Senescence in Mesothelioma Development and Response to Immunotherapy.

Nel AE, Pavlisko EN, **Roggli VL**.
J Thorac Oncol. 2023 Nov 23:S1556-0864(23)02373-0. doi: 10.1016/j.jtho.2023.11.0

Diagnostic Approach to Prevascular (Anterior) Mediastinal Lymphomas: When Thoracic
Pathology Meets Hematopathology.

Pina-Oviedo S, Pavlisko E, Glass C, DiBernardo L, Sporn T, **Roggli V**.
Mediastinum. 2023 Jun 30;7:35. doi: 10.21037/med-22-54.

Mesothelioma in the Pleura, Pericardium and Peritoneum: Recommendations from the
International Collaboration on Cancer Reporting (ICCR).

Klebe S, Judge M, Brcic L, Dacic S, Galateau-Salle F, Nicholson AG, **Roggli V**, Nowak AK,
Cooper WA.
Histopathology. 2023 Dec 4. doi: 10.1111/his.15106.

Mucus Increases Cell Iron Uptake to Impact the Release of Pro-Inflammatory Mediators
After Particle Exposure.

Ghio AJ, Soukup JM, Dailey LA, **Roggli VL**.
Sci Rep. 2023 Mar 9;13(1):3925. doi: 10.1038/s41598-023-30335-2.

Mechanisms and Shapes of Causal Exposure-Response Functions for Asbestos in
Mesotheliomas and Lung Cancers.

Cox LA, Bogen KT, Conolly R, Graham U, Moolgavkar S, Oberdörster G, **Roggli VL**, Turci F,
Mossman B.
Environ Res. 2023 Aug 1;230:115607. doi: 10.1016/j.envres.2023.115607.

Prolonged Fasting Induces Histological and Ultrastructural Changes in the Intestinal Mucosa
That May Reduce Absorption and Revert After Enteral Refeeding.

Nunes G, Guimarães M, Coelho H, Carregosa R, Oliveira C, Pereira SS, **Alves de Matos A**,

Fonseca J.

Nutrients. 2023 Dec 30;16(1):128. doi: 10.3390/nu16010128.

Dexamethasone Phosphate and Penetratin Co-eluting Contact Lenses: A Strategy to Enhance Ocular Drug Permeability.

Toffoletto N, Salema-Oom M, Nicoli S, Pescina S, González-Fernández FM, Pinto CA, Saraiva JA, **Alves de Matos AP**, Vivero-Lopez M, Huete-Toral F, Carracedo G, Saramago B, Serro AP. Int J Pharm. 2024 Jan 25;650:123685. doi: 10.1016/j.ijpharm.2023.123685.

Comparative Analysis of the Jaw Apparatus of Three Marine Annelids Using Scanning Electron Microscopy: Microstructure and Elemental Composition.

Gonçalves C, **Alves de Matos AP**, Costa PM.

J Anat. 2023 Nov;243(5):786-795. doi: 10.1111/joa.13910.