

“One of the best educational sessions I have ever attended”: A Showcase of CAP-ACP’s Virtual Education Series (VES)

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Britney A. Soll^{1,2*} DCPsych Candidate, BSc(HONS) Psychology, GMBPsS; Heather Dow² CAE, CPC(HC), CPhT, HPDE, HMCC³

¹New School of Psychotherapy and Counselling, London

²Middlesex University, London

³Canadian Association of Pathologists (CAP-ACP), Ontario

*Author for correspondence, (BS899@live.mdx.ac.uk)

- Britney Soll, 0000-0002-3029-2417, BS899@live.mdx.ac.uk
- Heather Dow, 0009-0004-7013-7966, hdow@eventsmgt.com

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Abstract**Title**

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Background:

The COVID-19 pandemic caused widespread disruptions to traditional pathology education across Canada. In response, the Canadian Association of Pathologists (CAP-ACP) launched the Virtual Education Series (VES) to provide accessible, high-quality continuing medical education. Following its initial success, the VES has evolved into a sustained national platform for professional learning.

Methods:

We classified 22 webinars delivered between January and April 2025 by subspecialty topic and summarized key presentations. Sessions were reviewed for thematic content, clinical relevance, and pedagogical impact.

Results:

The series featured leading Canadian and international experts across a range of subspecialties including gynecologic, gastrointestinal, dermatologic, pediatric, and neuropathology. Presentations addressed emerging diagnostic biomarkers, updates to international classification systems, and precision oncology practices. The series also included sessions on laboratory safety, environmental sustainability, and people-centred care, reflecting a commitment to holistic education. Participants consistently praised the sessions for their relevance, clarity, and ability to translate complex information into actionable insights.

Conclusion:

The VES reaffirms that learning is not only about content but context—about connecting science with values, uncertainty with growth, and professional knowledge with personal reflection. Its continued success affirms a shared conviction: that pathology is as much about people as it is about process, and that the future of the discipline will be shaped by how we learn, collaborate, and care.

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Reimagining Education in a Time of Crisis

The COVID-19 pandemic caused a sudden and widespread disruption in pathology education across Canada. As clinical laboratories were overwhelmed by COVID-related testing, routine diagnostics and in-person academic activities were suspended, leaving many trainees without access to key learning opportunities [1].

In response, the Canadian Association of Pathologists – Association canadienne des pathologistes (CAP-ACP) launched the Virtual Education Series (VES)— a national initiative offering concise, high-quality continuing education through live, one-hour webinars. Developed to be accessible without leaving the lab, the VES enabled pathologists and residents to maintain professional development during a time of unprecedented strain.

Since its inception, the VES has become a central component of CAP-ACP’s educational programming, with over **115 accredited sessions and more than 10,000 participants** to date. A mixed-methods analysis of post-webinar evaluation data [2] found that participants widely perceived the series as improving their clinical competence, offering accessible and relevant content, and fostering meaningful discussions—including around personal–professional issues in pathology. Drawing on 22 webinar sessions delivered between January and April 2025, the article showcases the VES as an innovative and impactful model for virtual medical education, highlighting its development, reach, and the value it continues to provide to the Canadian pathology community.

Leading Minds in Canadian Pathology

The strength of the VES lies not only its structure and accessibility, but in the exceptional thought leaders it brings to the virtual stage.

“Big thank you for your leadership and collegiality at all levels. As always—a comprehensive, practical and useful presentation—as if you can read our minds,” VES Participant in a post-session evaluation survey. [2]

Among the series’ most esteemed contributors are Dr. Iram Siddiqui, a national leader in diagnostic pathology and quality assurance; Dr. Marilyn Kinloch, a past-president of the CAP-ACP and expert in gynecologic pathology; and Dr. David Muñoz, a senior neuropathologist and longtime educator at the University of Toronto. Other notable speakers include Dr. Oyedele Adeyi, an internationally recognized liver pathologist; Dr. Arndt Vogel, a German-based authority in gastrointestinal oncology and translational research; Dr. Thomas Arnason, a gastrointestinal pathologist known for his academic work on novel biomarkers; and Dr. Ahmed Shah, a molecular pathologist advancing precision oncology at the BC Cancer Agency. These are some of the speakers who exemplify the calibre of intellectual leadership and collaborative spirit that have come to define the VES.

Breast & Gynecologic Pathology

In *Decoding Biomarker Testing in Ovarian Cancer*, Dr. Marilyn Kinloch provides a clear and practical overview of the evolving biomarker landscape in gynecologic oncology. Her session walks participants through the clinical utility of emerging molecular markers, emphasizing their role in diagnosis, treatment selection, and prognostic assessment. She highlights key pre-analytical, analytical, and post-analytical considerations for each biomarker and discusses strategies for

integrating companion diagnostics into routine clinical practice. Drawing from real-world case examples and institutional protocols, the presentation explores both opportunities and pitfalls in current testing modalities, fostering a deeper understanding of how pathologists can guide precision medicine.

Dr. Bojana Djordjevic's *Endometrial Carcinomas With Challenging Biomarker Patterns* tackles the complexity of interpreting molecular markers in endometrial carcinoma. She provides a nuanced discussion of how to integrate biomarker profiles with tumor mutation data to improve molecular classification and diagnostic certainty.

Dr. Madeline Fitzpatrick's *Usual Ovarian Carcinoma Histotypes* session provides a concise but highly informative review of the histologic subtypes of ovarian carcinoma, with a focus on diagnostic accuracy and subtype-specific behavior. She addresses both morphological and immunophenotypic features, helping attendees differentiate between overlapping entities and understand the prognostic and therapeutic relevance of each.

In a session led by Dr. Blake Gilks, participants were given a preview of the forthcoming 6th edition of the WHO Classification of Female Genital Tumours, expected to be finalized at an editorial board meeting in July 2025. The presentation outlined key updates anticipated in the new edition and explored how these changes may influence diagnostic reporting, clinical decision-making, and evolving standards of practice in gynecologic pathology.

Dr. Rachel Han's session provided a focused update on HER2 testing in breast carcinoma, highlighting findings from the DESTINY-Breast04 and DESTINY-Breast06 trials and their impact on HER2-low and -ultralow classification. She discussed the newly introduced HER2 0+ category in CAP reporting templates and outlined practical challenges in distinguishing low expression levels, with attention to diagnostic accuracy and therapeutic implications.

GI and Hepatobiliary Pathology

Dr. Arndt Vogel's session, *Genomic Profiling of Cholangiocarcinoma and the Role of Precision Medicine: Current and Future Perspectives*, provides a comprehensive overview of the evolving role of molecular diagnostics and targeted therapies in biliary tract cancers (BTC). Despite increasing incidence, BTC remains under-recognized and is often diagnosed at advanced stages due to non-specific clinical presentation and the lack of effective early detection strategies. Since 2020, the diagnostic and therapeutic landscape for BTC has expanded significantly, particularly with the emergence of immunotherapies and molecularly targeted agents. Vogel highlights that approximately 40% of BTC patients harbor actionable alterations—including IDH1/2, FGFR2, HER2, BRAF, and KRAS—reinforcing the clinical imperative to obtain adequate tissue or liquid biopsy samples early in the treatment pathway. He emphasizes the need for broad molecular profiling before or during first-line therapy, especially in the palliative setting, to inform precision treatment strategies and enable timely access to alternative or salvage therapies when standard options are exhausted.

In *Claudin-18 IHC: Implementing and Interpreting a New Biomarker*, Dr. Thomas Arnason presents a timely overview of Claudin-18 immunohistochemistry within the context of newly published Canadian guidelines for reflex biomarker testing in upper GI cancers. With Health Canada's 2025 approval of zolbetuximab for advanced gastric and gastroesophageal junction adenocarcinoma, pathology labs across Canada will soon face the need to validate, interpret, and report Claudin-18 as a companion diagnostic. Arnason walks participants through interpretive thresholds, validation strategies, and common pitfalls in staining and reporting. Drawing on diagnostic scenarios,

photomicrographs, and research data—including emerging findings in pancreatic cancer—he offers practical guidance for implementing this biomarker in routine pathology practice.

Dr. Oyedele Adeyi's session on Hepatocellular Neoplasms explores the diagnostic complexity of liver tumors, particularly in cases that fall outside classic patterns. While HCC is one of the most common cancers globally, Adeyi highlights challenging scenarios—such as hepatoid differentiation in non-HCC tumors and benign mimics of malignancy—that complicate diagnosis. He presents a structured approach to resolving these grey zones, underscoring the clinical and therapeutic importance of accurate classification within contemporary diagnostic frameworks.

Dermatopathology

Dr. Ryan DeCoste's *Melanoma Molecular Testing Session* explores the diagnostic value of identifying non-V600E BRAF variants in melanoma using next-generation sequencing. By highlighting real-world examples, his session illustrates how nuanced molecular findings can directly guide therapeutic decisions in advanced-stage disease and affirms the pathologist's role in precision oncology.

Pathologist-driven molecular reflex testing for melanoma in Canada was the focus of Dr. Ahmed Shah's session, which emphasized the urgent need for national standardization. Drawing on recent research and clinical guidelines, he discussed regional variations in testing practices, the clinical relevance of biomarkers like BRAF V600E, and the use of ancillary tests such as VE1 immunohistochemistry. The presentation highlighted newly proposed minimum criteria to improve access to targeted therapies for patients with high-risk or disseminated disease, based on findings recently published in the *Journal of Cutaneous Medicine and Surgery* [3].

Neuropathology

Dr. David Munoz's *Neuro Pathology Intraoperative Consults for Surgical Pathologist* offers a focused and practical guide to frozen section diagnosis in central nervous system lesions. Drawing on years of intraoperative consultation experience, Dr. Munoz outlines the critical interplay between surgical expectations and pathological capabilities. The session provides a detailed walkthrough of tissue handling techniques—touch preps, smears, and frozen sections—and highlights the features that pathologists need to recognize in brain, spine, and pituitary gland specimens. His guidance helps clarify not only what the neurosurgeon needs at the moment of decision, but also what the pathologist can reliably offer, making the session an essential learning opportunity for those navigating these high-stakes consultations.

Pediatric Pathology

Dr. Iram Siddiqui's *Biliary Atresia And Beyond: A Practical Approach To Pediatric Cholestatic Liver Disease* offers a comprehensive diagnostic strategy for medical liver biopsies in neonates and infants. Emphasizing pattern recognition, biochemical correlation, and judicious use of genetic testing, she equips attendees with tools to navigate one of pediatric pathology's most diagnostically difficult areas.

Her second presentation, *Pediatric Inflammatory Bowel Disease: A Practical Approach*, guides participants through a structured histopathologic evaluation of pediatric colonic biopsies. She explains how to distinguish IBD from its many mimics, while providing insights into common histologic patterns and clinical presentations that can complicate the diagnostic process.

Dr. Keeley Burnside's presentation, *Grossing Approach For Wilms Tumours*, explores the unique grossing challenges posed by nephroblastoma, one of the most common solid tumors in pediatric pathology. The session focuses on pediatric tumor biology and the value of correlating gross pathology with histology to enhance diagnostic accuracy in a complex clinical setting.

Dr. Rose Chami's session offered a practical and systematic approach to diagnosing Hirschsprung disease, with a focus on key histologic features, common pitfalls, and the use of rectal biopsies and pull-through resections. She emphasized the role of ancillary studies, including histochemical and immunohistochemical stains, in supporting accurate diagnosis and improving patient outcomes.

Dr. Isabel Gu's *The Importance Of Gross Placental Examination: Focused Sampling In The Detection Of Decidual Arteriopathy* emphasizes the diagnostic significance of the placenta, highlighting how gross examination and sampling can influence microscopic findings and final diagnosis. She introduces a novel approach to maternal vessel sampling and makes a strong case for the importance of gross-only findings in placental pathology.

In *Placental Pathology: What Not to Miss*, Dr. William (Tony) Parks distills years of consultative experience into a practical checklist for placental gross and microscopic assessment. He highlights subtle but clinically significant lesions that may otherwise be overlooked, tying histologic findings back to maternal-fetal outcomes and medico-legal implications.

The Bigger Picture: Public Health, Policy, and the Planet

In *Genomic Profiling of Cholangiocarcinoma and Therapeutic Implications*, Dr. Leonard Angka introduces the Canadian Cholangiocarcinoma Collaborative (C3), a national partnership of patients, clinicians, and researchers working to expand access to molecular testing and personalized care for biliary tract cancer. By integrating comprehensive research into care pathways from the point of diagnosis, C3 enables early access to funded genomic testing, trial matching, and multidisciplinary review. Dr. Angka presents current initiatives, including a national patient registry, a pilot using natural language processing for clinical data extraction, and a tumour tissue biobank. Framed within a public health perspective, the session calls for harmonised testing protocols and equitable access to precision oncology services across Canada.

Greening the Lab, a session by Dr. Launny Lowden, reframes environmental sustainability as a core dimension of healthcare quality, arguing that failure of planetary health systems now poses a greater threat to future generations than many traditional medical conditions. Grounded in the principle that quality care must "do no harm," Lowden shares the story of a successful sustainability collaboration between Kootenay Lake Hospital Laboratory and Interior Health, which sparked a broader movement across the region. Drawing from both local initiatives and the broader evidence base, the talk challenges pathologists to incorporate waste reduction, energy efficiency, and sustainable procurement into the culture of laboratory medicine, inviting collective action toward a greener healthcare system.

Behind the Bench: Rethinking the Lab as a Human Space

In *Safety and Other Considerations for Pathologists' Assistants*, Dr. Kristen Crewe reframes lab safety as more than a procedural checklist. Her presentation offers a comprehensive overview of practical safety considerations in the gross room, from handling blades and formalin to navigating PPE use and emergency protocols. She also highlights the challenges faced by newly qualified PAs, who must juggle certification pressures, software training, and adapting to demanding environments. By addressing both the physical risks and emotional strains, including burnout, Crewe calls for a broader

culture of safety—one that supports learning, well-being, and long-term sustainability in the pathology workplace.

Julie Coffey's *Bringing People-Centred Care to the Laboratory* challenges the notion that labs are removed from patient experience, asking what it means to embed dignity, equity, and inclusion in spaces where patients are rarely seen. Her session connects laboratory services to hospital-wide standards of people-centred care, as outlined by Accreditation Canada, and calls for tangible strategies to engage patients, staff, and service users in shaping laboratory practices. By centring lived experience and systemic equity, she redefines the ethical scope of lab medicine—positioning it as an active, humanising force within healthcare.

History of the Pathologists' Assistant

The evolving role of Pathologists' Assistants (PAs) in Canada and the United States reflected broader changes in laboratory medicine. This session explored the origins of the profession, the early training programs that shaped its development, and how national associations emerged to support its growth. It also outlined how certification processes evolved over time and emphasised the importance of PAs engaging with their respective associations and certifying bodies to support professional standards and community involvement.

Reflecting on Five Years of Virtual Education

In preparing this showcase, we were struck by how clearly the sessions reflect both the intellectual rigour and the human dimension of pathology practice today. The Virtual Education Series is more than a curated sequence of presentations—it is a dynamic and evolving platform for holistic, reflective, and professionally grounded learning. Endorsed by the Canadian Association of Pathologists – Association canadienne des pathologistes (CAP-ACP), the VES continues to serve as a cornerstone in the association's mission to promote lifelong, inclusive, and forward-looking education across the breadth of pathology practice.

This showcase reflects the depth and range of that mission. From the intricacies of molecular profiling and tumour classification to the cultural and emotional architecture of laboratory life, these sessions speak to the multiple dimensions of being a pathologist today. The VES does not confine itself to core competencies—it actively embraces the complexity of real-world practice, systemic change, and professional meaning-making.

In alignment with the Canadian Journal of Medical Specialities' focus on integrated and interdisciplinary scholarship, the VES reaffirms that learning is not only about content but context—about connecting science with values, uncertainty with growth, and professional knowledge with personal reflection. Its continued success affirms a shared conviction: that pathology is as much about people as it is about process, and that the future of the discipline will be shaped by how we learn, collaborate, and care.

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