NOVEMBER 2025 ISSUE #5

The Cutting Edge

THE OFFICIAL NEWSLETTER FOR
THE TEXAS SOCIETY FOR HISTOTECHNOLOGY

Notes from the Bench...

A letter from the Editor

As Thanksgiving approaches, we're reminded of how interconnected our lives and work truly are. Every slide we stain, every tissue we process, and every result we deliver contributes to something much larger than ourselves: a patient's story, a diagnosis, a piece of knowledge that moves medicine forward.

In the lab, gratitude often looks different from what it does elsewhere. It's the quiet acknowledgment of a perfectly cut ribbon after a tough block, the appreciation for a colleague who double-checks a control before it leaves the bench, or the moment a pathologist takes the time to thank the team for a timely turnaround. These moments may seem small, but together they define the culture of excellence and care that keeps our discipline strong.

This time of year offers a chance to pause and reflect on that culture, to remember that the work we do is not just technical, but deeply human. Behind every cassette number is a life, and behind every slide is a story that depends on our precision, patience, and skill.

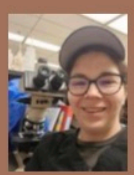
We also give thanks for the people who came before us, the mentors who taught us to troubleshoot stubborn stains, the pioneers who established the techniques we still rely on, and the broader communities whose knowledge and resilience have shaped modern medicine. Their legacies remind us that progress is a collective effort built across generations of curiosity and compassion.

As we look ahead, may we carry that same spirit of collaboration into every step of our work. Here's to continuing our profession with curiosity, compassion, and community, and to finding gratitude not only in the outcomes, but in the process itself.

Wishing everyone a warm and restorative Thanksgiving season, both in and out of the lab.

Eternally Grateful,

Toni Lona
Newsletter Chair
anlona@UTMB.edu



Honoring Indigenous Knowledge in Modern Medicine: A Histological Perspective

By Antoinette EF Lona, MSc., HTL(ASCP)cm

November is Native American Heritage Month, a time to honor the enduring scientific knowledge embedded in Indigenous cultures, often predating and paralleling Western scientific methods. Across the Americas, Indigenous communities developed complex understandings of anatomy, disease, and healing through close observation, experimentation, and intergenerational documentation.

In the laboratory, we may view our work through the lens of modern biomedicine, but many of the principles we apply, such as careful observation, pattern recognition, and the use of natural compounds, mirror the empirical approaches of Indigenous healers. These traditions, rooted in relationships with the natural world, laid the groundwork for several discoveries that continue to influence pathology, pharmacology, and histology today.

One striking example is the Pacific yew tree (*Taxus brevifolia*), native to the forests of the Pacific Northwest. Some Indigenous groups, such as the Coast Salish and Quinault peoples, used yew bark and needles medicinally.[1] Decades later, this same species became the source of paclitaxel (Taxol), a chemotherapeutic compound that stabilizes microtubules and halts cancer cell division.[2,3] In research histology, paclitaxel remains invaluable for studying mitotic arrest, cytoskeletal dynamics, and tumor morphology.

Similarly, willow bark (*Salix* spp.) was traditionally used by several Native American tribes, including the Cherokee and Iroquois, as a remedy for pain and fever.[4] The compound salicin, isolated from willow, served as the biochemical foundation for aspirin, a drug that transformed modern anti-inflammatory therapy.[5] In histopathology, aspirin's mechanism, cyclooxygenase inhibition, helps explain many inflammatory tissue patterns observed microscopically.

Indigenous medical traditions also demonstrated nuanced understandings of organ systems and physiological balance. For example, traditional healers recognized the liver's cleansing role and the importance of wound granulation, concepts now fundamental to tissue regeneration and homeostasis.[4] While their frameworks differed from Western anatomy, their keen observational skills reflect the same spirit of scientific inquiry that drives laboratory medicine today.

As histotechnologists, we stand in a lineage of observers. Every slide we stain and examine continues humanity's oldest medical impulse: to understand life by studying its smallest structures. Though our microscopes and reagents are modern, the curiosity and compassion that guide our work are timeless.

Recognizing Indigenous contributions reminds us that medicine has always been multicultural, and the story of pathology is part of a much broader human endeavor. This month, and every month, we can honor that legacy by acknowledging the diverse foundations of scientific progress and ensuring that respect, collaboration, and inclusivity remain at the heart of discovery.

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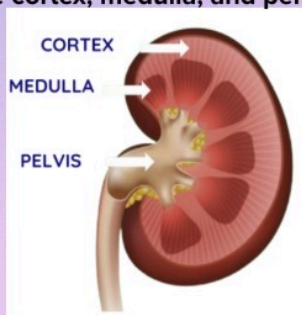
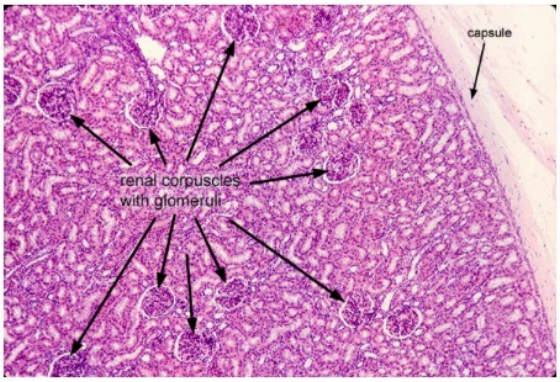
Histologic Architecture of the Kidney: A Technical and Anatomical Review

The kidney remains one of the most histologically intricate organs in surgical pathology. Its microarchitecture, with tightly organized vascular, tubular, and interstitial compartments, demands technical precision and anatomical understanding from the histology bench to the diagnostic microscope.

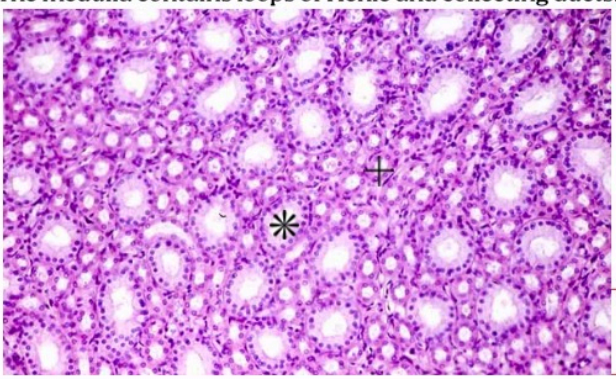
The kidney has 3 major landmarks: The cortex, medulla, and pelvis.[1]



The cortex of the kidney is distinguished by characteristic renal corpuscles, each of which consists of a glomerulus surrounded by Bowman's capsule.[2]



The medulla contains loops of Henle and collecting ducts.[2]

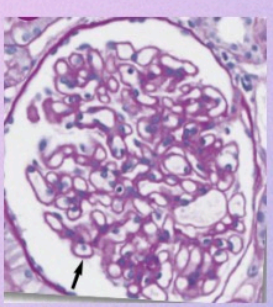


✳ Collecting Ducts

┼ Thick Segments of loops of Henle

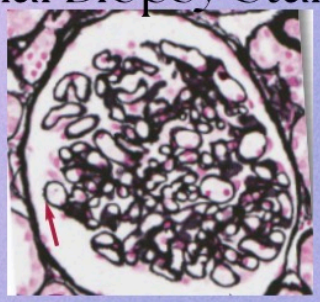
Technical Tip: *tissue sections should be 2-3 microns thick, especially for glomerular evaluations.*

Renal Biopsy Stains



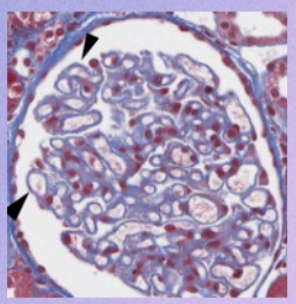
Periodic Acid–Schiff (PAS)[3]

Highlights basement membranes, brush borders of proximal tubules, and glomerular mesangial matrix. PAS positivity of the tubular brush border provides a key indicator of tissue preservation quality.[4]



Jones' Methenamine Silver (JMS)[3]

A gold standard for assessing glomerular basement membrane thickness, contour, and duplication.[4]



Masson's Trichrome[3]

Useful for evaluating fibrosis in chronic kidney disease, differentiating collagen (blue or green) from cytoplasm and muscle (red).[4]

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Gratitude in the Lab: The Science of Appreciation and Team Resilience

During this season, many of us pause to reflect on what and who we're thankful for. But gratitude isn't just a feel-good emotion; it's backed by science. Studies show that teams who regularly express gratitude experience less burnout and greater job satisfaction.[1]

In histology labs, where precision, deadlines, and high workloads are the norm, simple acts of appreciation can make a big difference. Saying "thank you" to a coworker who handled tricky blocks, recognizing a trainee's progress, or sharing a kind note on a "gratitude board" can strengthen team morale and connection.

Even small gestures, a shared lab lunch or a quick acknowledgment in morning huddle, help remind us that we're not just technicians working through cassettes and slides, but colleagues supporting one another through every stain, section, and troubleshooting moment.

Just as tissues rely on balance and integrity, so do we. Gratitude helps keep our teams healthy, our spirits steady, and our work strong. A simple "thank you" may be one of the most powerful tools we have in keeping our labs running smoothly.

ASMH
American Society for Mohs Histotechnology

Earn CEUS

The American Society for MOHS Histotechnology is hosting a Webinar entitled:
"Linking CAP and CLIA into the Lab Procedure Manual"

Tune in
November 4, 2025 8:00PM EST/7:00PM CT

ASMH Members: Included with Membership
Non-Members: $25.00

Register HERE:
https://asmh.execinc.com/edibo/WEB2511

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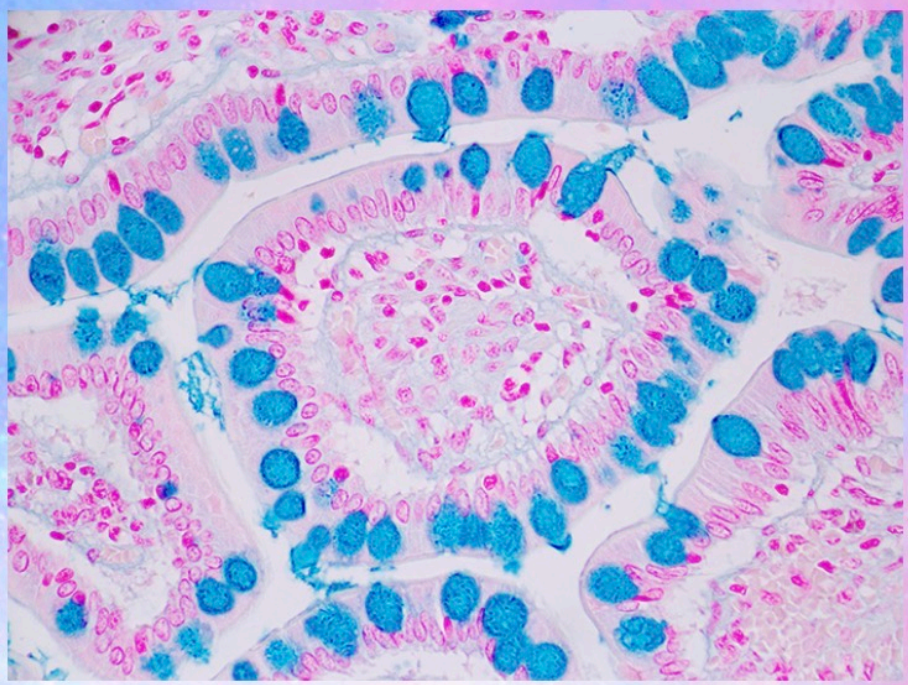
STAIN OF THE MONTH

Alcian Blue (pH 2.5)



Goblet Cells.[1]

Purpose

Differentiates acid mucopolysaccharides and glycosaminoglycans, staining them turquoise-blue.[2]

Applications

Commonly used for goblet cells, cartilage, and connective tissue mucins.[2]

Key Mechanism

The dye binds to carboxylated and sulfated acid mucosubstances at pH 2.5; neutral mucins remain unstained.[3]

Control Tissue

Small Intestine, appendix or colon

Tip

Rinse thoroughly between steps to prevent precipitate formation, which can mimic mucin. Pair with PAS for mucin characterization in combined techniques

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TIP OF THE MONTH

Paraffin Temperature and Tissue Integrity

Keep your paraffin bath 2–4°C above its melting point (around 58–60°C). Higher temperatures can cause tissue brittleness and distortion, especially in mucosal biopsies. Consistent embedding temperatures promote smooth ribboning and strong section adhesion downstream.

NSH WEBINAR SERIES

Register for November's NSH Laboratory Webinar Series

Laboratory Webinars are a great, inexpensive way to provide continuing education to a large number of employees. You have access to the live session AND the recordings for one year. The cost for each session is the same regardless of the number of attendees!

Wednesday, November 19, 2025 - Special Stains

Individual Webinars - $99.00

Register at
https://www.nsh.org/nsh-events/nshlabweb

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Histo-lol-gy

Reddit: r/pathology
Over_n_over_n_over

ihearthisto.com

https://www.etsy.com/shop/NataliaMade

https://www.etsy.com/shop/ScientificGiftopia

References on last page

CALL FOR SUBMISSIONS!

Share Your Story with TSH!

Got a cool case, clever tip, or funny lab story? The Texas Society for Histotechnology Newsletter wants to hear from you! We're accepting submissions for upcoming issues—anything from staining how-tos to stunning slide photos or comics only histotechs will get.
You don't have to be a writer—we'll help polish your piece! Students and first-time contributors are especially welcome.

Send your ideas, photos, or articles to anlona@utmb.edu by November 25th.
Got something great in your microtome drawer? Don't keep it to yourself—share it with TSH!

JOIN TSH!

Click the link below to become a member of TSH and connect with a vibrant community of histology professionals across Texas. Whether you're a student, tech, pathologist, or vendor, there's a place for you in TSH! Gain access to exclusive resources, educational events, networking opportunities, and more. We'd' be glad to have ya! 🤠

👉 Join TSH here!

The Texas Society of Histotechnology would like to thank our sponsors!

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Corrections & Clarifications

In the October issue, the GMS "Stain of the Month" photo was published without proper credit. We sincerely thank Newcomer Supply for providing the image and regret the oversight.

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