

OCTOBER 2025

ISSUE #4



THE CUTTING EDGE

THE OFFICIAL NEWSLETTER FOR
THE TEXAS SOCIETY FOR HISTOTECHNOLOGY



CREEPING INTO FALL: NOTES FROM THE BENCH

A LETTER FROM THE EDITOR



Reader's discretion: Halloween is my absolute favorite. I had an absolute blast with this issue, so I hope you enjoy it as much as I did creating it.

As the air turns crisp and the days grow shorter, we gradually exchange the brightness of summer for the more subdued shadows of autumn. However, inside the lab, things remain busy: the water bath continues to glow, the processors hum away, and the rhythm of our work carries on. October feels like a reflection of what we strive for in histology: preserving, revealing, and transforming. Each tissue holds its own story, just waiting for the right stain to bring it to life.

This season also marks the beginning of conference time, offering an opportunity for many of us to gather, whether online or in person, to share insights, troubleshoot challenges, and reconnect. These moments of collaboration are essential for advancing our field, and your participation helps keep the Texas Society for Histotechnology vibrant and strong.

As fall settles in, I want to express my gratitude for the care and dedication you bring to your work. Whether you are just starting out or are a seasoned technician, it is your precision and passion that breathe life into histotechnology. I hope this season brings you not only new insights and growth but also some time to appreciate the beautiful changing colors and quiet moments outside the lab.

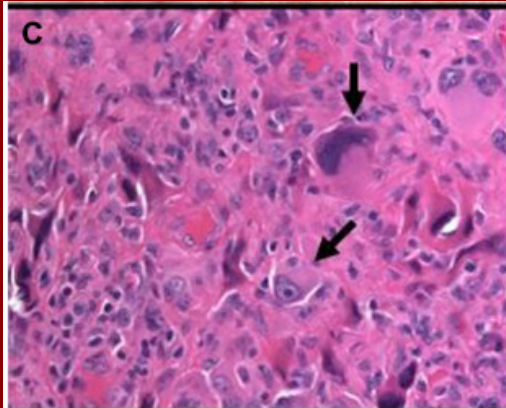
With the leaves falling and the nights growing longer, may your ribbons stay smooth, your sections remain unwrinkled, and your stains have perfect contrast.

In Spooky Solidarity,

Toni Lona
Newsletter Chair
anlona@UTMB.edu

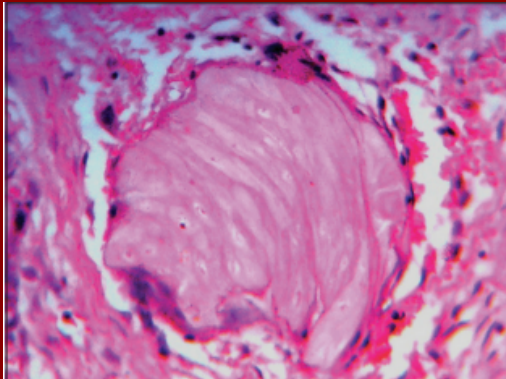


SPOOKY CELLS



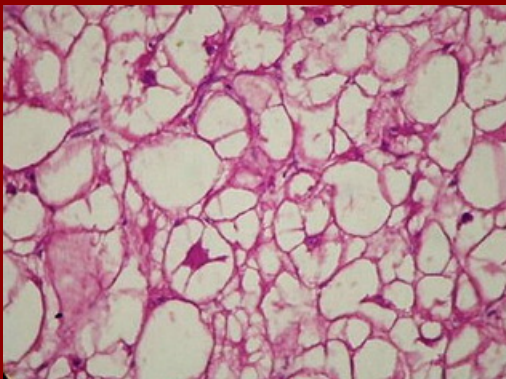
Monster Cells

Cells with large hyperchromatic and convoluted nuclei (arrows)¹



Ghost Cells

Cells with clear conservation of basic cellular outline but lacking nuclear and cytoplasmic details.²



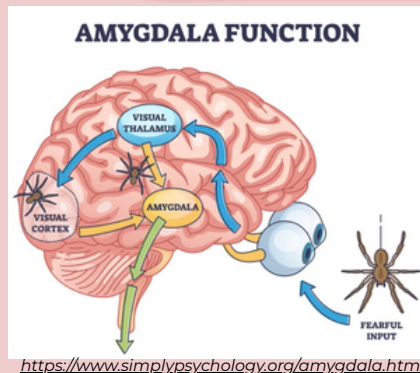
Spider Cells

Cardiac rhabdomyomas are composed of large vacuolated cells. This appearance is caused by centrally placed nucleus from which myofibrils radiate to the cell membrane.³

THE ANATOMY OF FEAR:

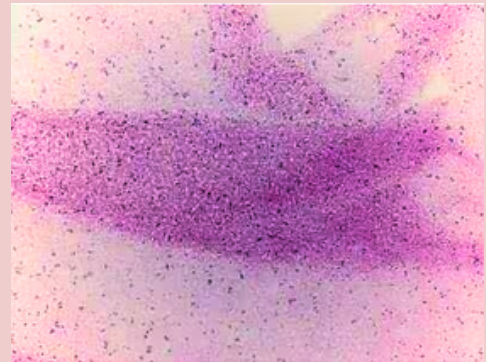
A Histologic Look at Fight-or-Flight

By: Antoinette EF Lona MSc., HTL(ASCP)^{cm}

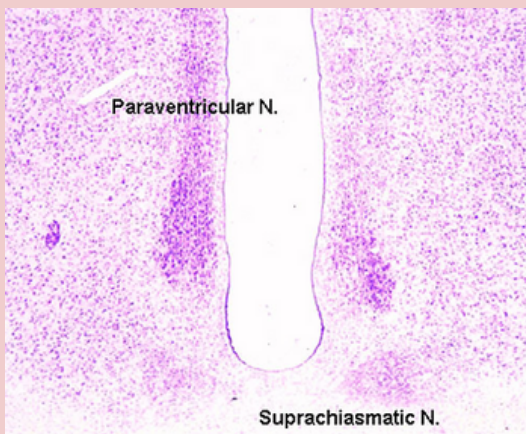


Fear is one of our most basic survival tools. When we sense danger, the body doesn't wait for us to think; it jumps into action. This 'fight-or-flight' response links the brain and body in a rapid, coordinated system, with three key players: the amygdala, the hypothalamus, and the adrenal medulla.

The amygdala, an almond-shaped structure deep in the temporal lobe, plays a central role in detecting threats. Once danger is recognized, it signals other brain regions to initiate a response.¹



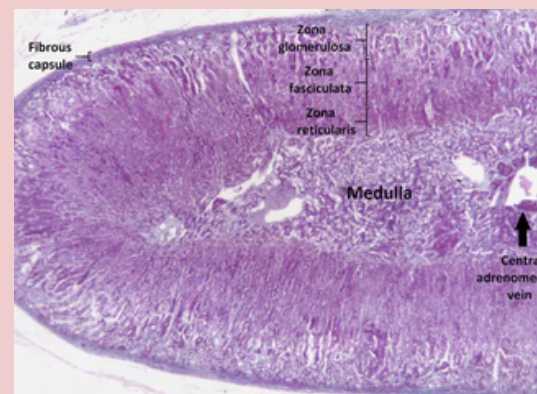
Amygdala, Adult human⁴



Hypothalamus, NHP⁵

The hypothalamus then acts as the command hub. It activates the sympathetic nervous system, sending signals to the adrenal glands, while also releasing corticotropin-releasing hormone (CRH) to start a slower stress-hormone cascade.²

The adrenal medulla responds almost instantly by releasing adrenaline and some norepinephrine into the bloodstream. At the same time, sympathetic nerves release norepinephrine directly onto tissues. The result is a rapid surge of physiological changes: faster heart rate, higher blood pressure, widened airways, mobilized energy, and dilated pupils; all designed to prepare the body to fight or flee.³



Adrenal Medulla, Adult Human⁶

In just moments, perception becomes action: the amygdala detects the threat, the hypothalamus coordinates the response, and the adrenal medulla unleashes the physical reaction that keeps us alive.

Are You Afraid Of The Histolab?

4 a.m. Frights: When the Run Wasn't Run

"We had an extended holiday weekend approaching, and rather than reprogram the tissue processor's schedule, my supervisor volunteered to come in the night before and start the run so everything would be ready by 4 a.m. the next day. You can probably guess what happened next — she forgot. We arrived to find an empty processor and later had a group of very unhappy pathologists."

Feeling Faint: Six Stitches in the Hallway

"We used to have high school students participate in a job shadow rotation in our histology department, but we've since discontinued the program. During one rotation, a student was observing a pathologist assistant in the gross room when she suddenly excused herself, saying she needed to use the washroom. Moments later, she fainted in the hallway. EMS was called, and she ended up needing six stitches on her chin."

Last Call for Clostridium

It was 3:59 p.m. on a Friday when the phone rang. "Clostridium FA." The lab went silent. Everyone knew the curse: once you started an FA, you're chained to the scope long after the rest of the lab has gone dark. The slides glow an eerie green under UV, spores twinkling like malicious stars in a void. Time bends in the FA room; an hour feels like three.

By 6 p.m., the halls were empty. The soda in the breakroom had gone flat. The processor hummed like a restless ghost. Alone, you peer into the scope, only to see something move that shouldn't.

And just as you think you've finished, the phone rings again.

"Another sample just arrived."

No one ever really leaves after a 4 p.m. Clostridium FA.

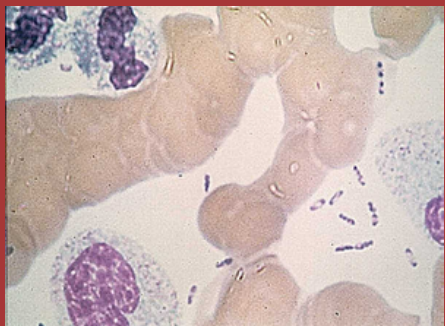
Think you've got a more hilarious or terrifying tale from the lab trenches? Share your Histology Horror Story for a chance to be featured in November's issue. The messier, the better, bonus points for haunted microtomes, chaotic computers, or misbehaving equipment!

Submit your story to: anlona@utmb.edu Deadline: October 20th

PLAGUES UNDER THE MICROSCOPE

Throughout history, humanity has faced waves of disease so fearsome they seemed almost supernatural. Yet under the microscope, these plagues become less myth and more morphology.

THE BLACK PLAGUE



Wayson Stain of *Yersinia pestis*¹

The Black Death, carried by *Yersinia pestis*, once swept across continents, emptying villages and rewriting history. In swollen lymph nodes, it produced hemorrhagic, necrotic lesions packed with bacilli, a chilling histologic reminder of its ferocity.¹

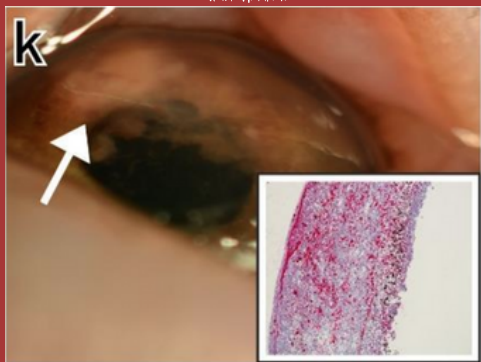
SMALLPOX



TEM of Smallpox Virus virions²

Smallpox, eradicated only within living memory, scarred both skin and societies. Histologically, its pox lesions reveal ballooning degeneration of keratinocytes and distinctive eosinophilic cytoplasmic inclusions known as Guarnieri bodies; signatures of variola virus replication in the skin, the cellular battlefield of one of humanity's greatest foes.²

EBOLA



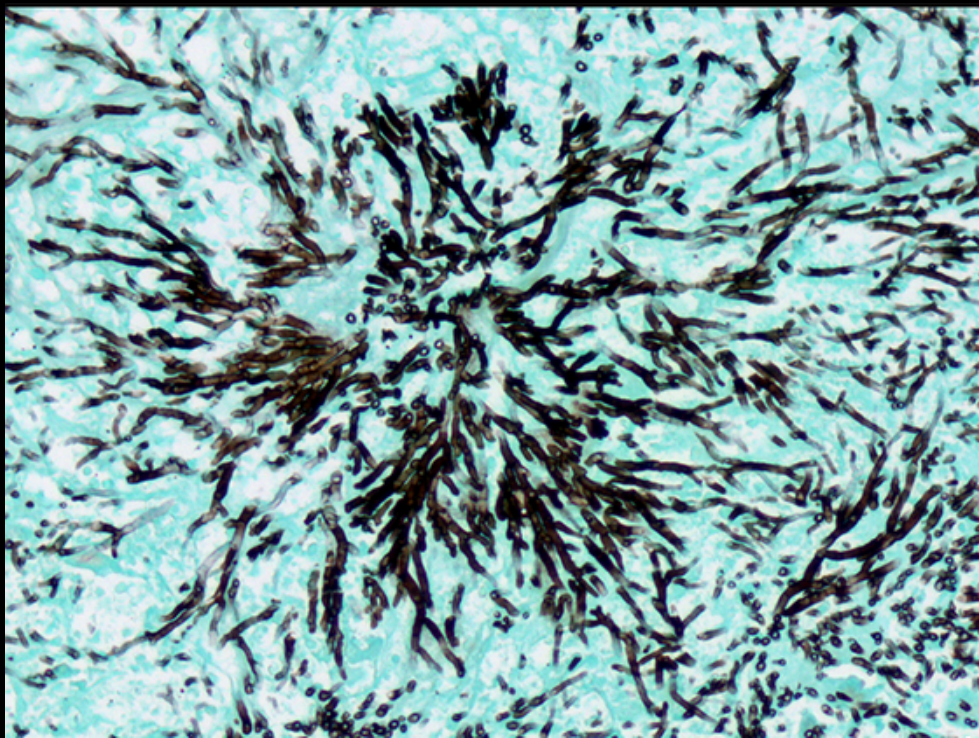
NHP, Ebola, Intense ISH labeling of the iris³

The current Ebola outbreak in the Kasai Province of the Democratic Republic of the Congo (DRC) has revived old fears: this is the country's 16th such event, confirmed in early September 2025.⁴ Ebola's pathology is distinct. The liver commonly shows multifocal hepatocellular necrosis with infiltrating macrophages. In the spleen, white pulp structure is disrupted by fibrin deposition, necrosis, and marked lymphoid depletion. Pulmonary changes are variable but include alveolar edema, interstitial inflammation, and hemorrhage, reflecting the virus's systemic reach.⁵

Each pathogen has its own sinister signature. Together, they remind us that history's plagues are more than just stories, they are cellular imprints we continue to study, interpret, and learn from. In this season of shadows, histology helps us glimpse the true "faces" of these invisible monsters.

STAIN OF THE MONTH

Known as one of the most dramatic silver stains in histology, GMS turns fungi into stark black figures lurking against a green background, like something crawling out of the dark.



Duck, Aspergillus¹

What it Shows

GMS is the go-to stain for fungal organisms. Yeasts, hyphae, and spores all appear black and sharply outlined. Basement membranes also pick up the stain, adding a ghostly framework around the tissue.

How it Works

Carbohydrates in fungal cell walls are oxidized by chromic acid, creating aldehydes that reduce methenamine silver to metallic silver. The result: fungi that stand out like ink drawings in the tissue. A light green counterstain provides a striking contrast, making the organisms practically glow.¹

The graphic features a large, grey, tombstone-shaped archway. Two black ghost silhouettes are perched on the top left and right edges of the arch. The title "Tip of the Month" is written in a large, white, serif font across the top of the arch. Below it, the subtitle "BEWARE THE FLOATERS" is written in a bold, black, sans-serif font. The central text area is white and contains a paragraph and a bulleted list. At the bottom of the arch, there is a green hand reaching up from the ground, and two clumps of green grass with orange flowers are on either side.

Tip of the Month

BEWARE THE FLOATERS

Nothing sends a chill down a histotech's spine quite like spotting an unexpected fragment drifting across a pristine slide. Floaters, tiny bits of tissue that sneak into your block or bath, can turn an otherwise flawless case into a haunted mess.

To keep these uninvited guests from appearing:

- Skim the surface of your waterbath frequently; tissue fragments like to linger in the shadows.
- Change bath water daily (or sooner if you're trimming lots of blocks). A clean bath is your best defense against contamination.
- Watch your blades. Carryover from block to block can release hidden fragments into your ribbons.
- Label carefully, because the scariest floater is the one you can't trace back.

Keep your baths clean, your ribbons sharp, and your slides will stay ghost-free.



THE DARK HISTORY OF HISTOLOGY: TOXIC ORIGINS OF COMMON REAGENTS



From coffin-colored dyes to carcinogenic fumes, the most familiar reagents in histology carry a haunted history. Step into the shadows and explore the dark origins of formalin, hematoxylin, and xylene... if you dare.

Natalie Dobias HTL(ASCP)^{cm}QIHC^{cm}

FORMALIN

Formalin is the most widely used fixative in histology. Formaldehyde has long been recognized as a strong irritant, and the International Agency for Research on Cancer (IARC) classifies it as a Group 1 carcinogen (known to cause cancer in humans). Concerns about its toxicity were raised as early as the early 20th century, with published reports of respiratory irritation and long-term health effects. Despite improved ventilation and safety protocols, debates continue about its balance of effectiveness in tissue preservation versus the risks it poses to laboratory workers.¹

HEMATOXYLIN

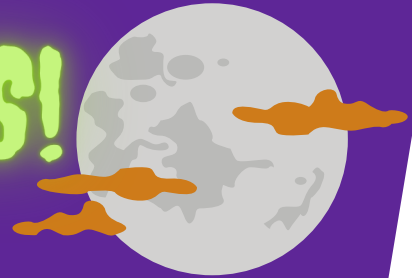
Hematoxylin is extracted from the heartwood of the logwood tree (*Haematoxylum campechianum*), native to Central America. Its trade dates back to the 16th century, tied to colonial exploitation and forced labor. By the 1830s, hematoxylin had become a pillar in histology as a natural dye. For staining, it must be oxidized to hematein and combined with a mordant, such as alum, iron, or, historically, mercuric oxide (later abandoned due to toxicity). Despite the use of synthetic dyes and new methods, hematoxylin remains indispensable in pathology. As Ortiz-Hidalgo aptly put it, "Hematoxylin is irreplaceable... Mesoamerica's gift to histopathology."²

XYLENE

Xylene was introduced into histology labs in the mid-20th century as a clearing agent, replacing more volatile and flammable solvents like benzene. Although initially promoted as a safer alternative, prolonged exposure was soon linked to neurotoxic effects. Acute symptoms can include headaches, dizziness, and nausea; chronic exposure may contribute to neurological impairment and, in high levels, pulmonary complications. Today, many laboratories use xylene substitutes to reduce risks while maintaining reliable tissue processing.³



FREE CEUS!



STATLAB PRESENTS:

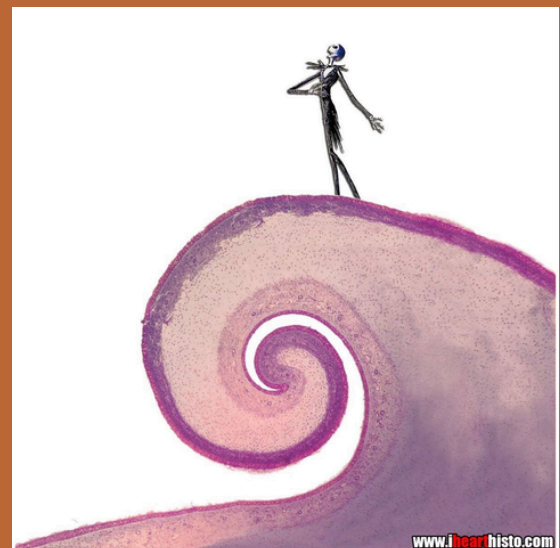
HORROR STORIES IN THE HISTOLOGY LAB

Wednesday October 29th at 12:00pm CST

[Register Here](#)



Histo-lol-gy





CALL FOR SUBMISSIONS!

Are you a passionate histotech with a cool case, clever tip, or compelling story to share? The Texas Society for Histotechnology (TSH) Newsletter wants to hear from YOU!

We're currently accepting submissions for upcoming issues and would love to feature your voice. Whether it's a how-to article on a staining technique, a fun lab anecdote, a photo of your latest beautiful slide, or a comic that only fellow histotechs will understand? There's a place for it in our pages.

You don't need to be a professional writer to contribute. We welcome pieces of all lengths and tones, from technical to humorous, and we're happy to help polish your draft if needed. Student voices and first-time contributors are especially encouraged to submit!

This is YOUR newsletter, let's make it a vibrant, collaborative space that reflects the creativity, expertise, and heart of our Texas histology community.

Submit your ideas, photos, or full articles to anlona@utmb.edu. Deadline for the next issue is October 25th.

Got something in your microtome drawer worth sharing? Don't keep it to yourself, submit it today!

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!](https://www.texashistology.com)

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



BIO SYSTEMS

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