

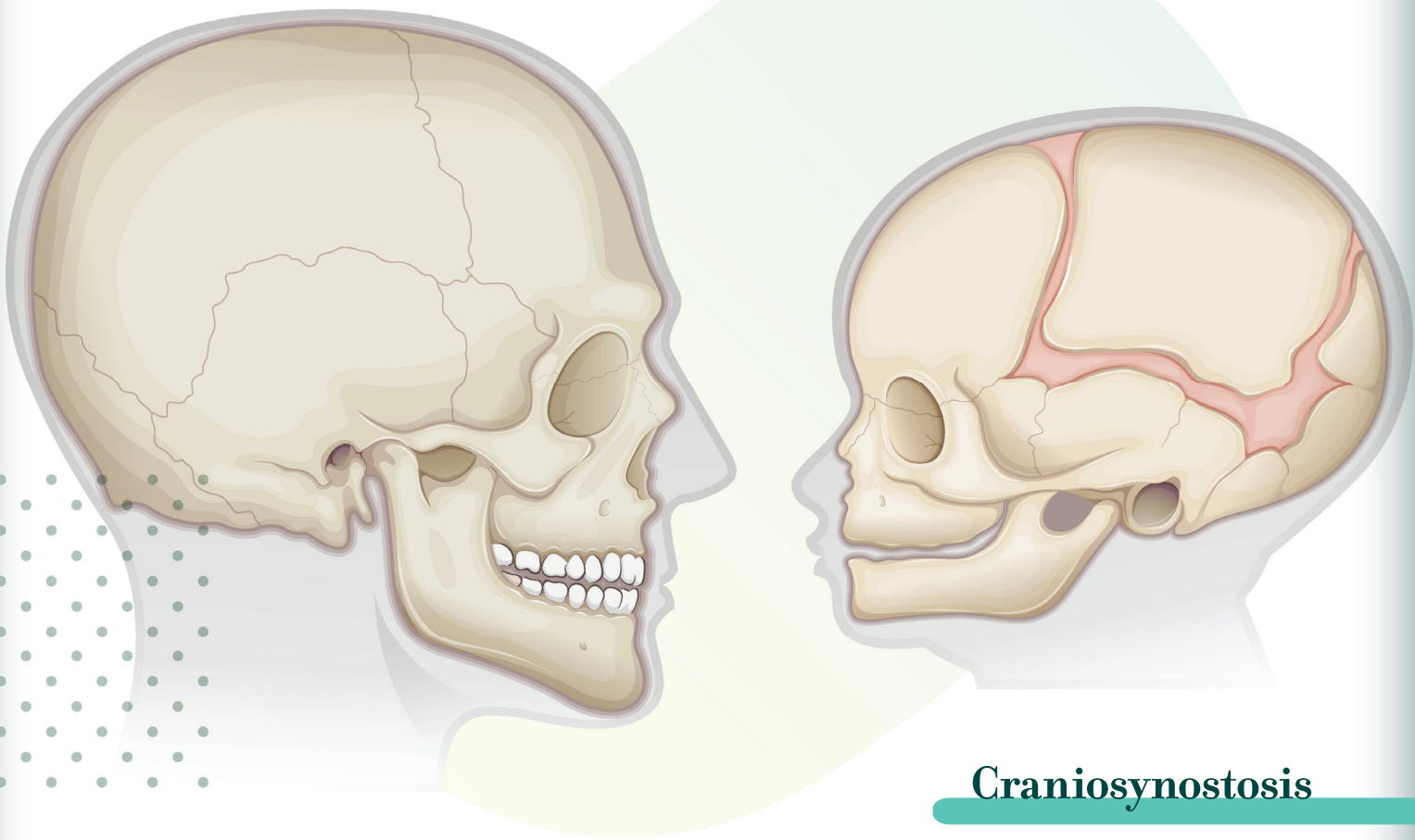
DECEMBER 2025

THE

VOLUME 57 NO 12

SURGICAL TECHNOLOGIST

OFFICIAL JOURNAL OF THE ASSOCIATION OF SURGICAL TECHNOLOGISTS, INC.



Craniosynostosis

Part 1 of 3

**SAVE THE
DATE**

May 31 - June 2, 2026

AST Surgical Technology Conference

BIG IDEAS, FLYING FISH, AND SKY-HIGH CONNECTIONS IN SEATTLE!

Event details and more information coming soon. We can't wait for you to join us in 2026!



STATEMENT OF EDITORIAL PURPOSE The purpose of the *Journal* is to advance the quality of surgical patient care by providing a forum for the exchange of knowledge in surgical technology and by promoting a high standard of surgical technology performance.

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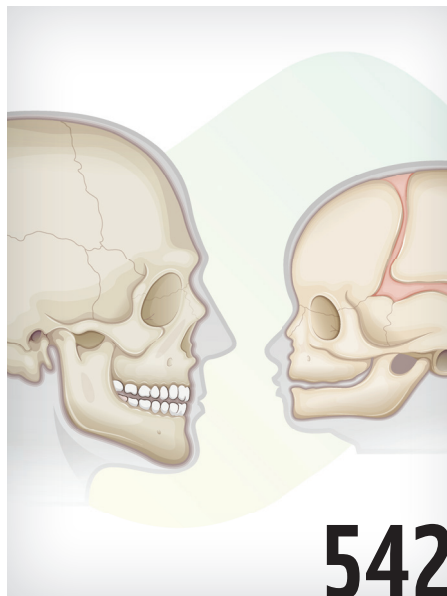
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POSTMASTER Send address corrections to *The Surgical Technologist*, 6 West Dry Creek Circle, Suite 200, Littleton, CO 80120-8031.

Connect with AST on LinkedIn, Facebook, Instagram, and Pinterest to grow your professional network!



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Craniosynostosis, Part 1 of 3

KEVIN B. FREY, CST

Craniosynostosis is primarily a congenital condition, meaning it is present at birth. It occurs when one or more of the cranial sutures—the flexible joints between the bones of a baby's skull—close too early, before the brain has fully developed. This premature fusion can lead to an abnormally shaped head and, in more severe cases, increased intracranial pressure that may affect brain development.

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From Prep to Perfection: Get Ready for a Great Conference

RACHEL CLARK, CST, CSFA, ST-R, FAST, AST TREASURER

BOARD MESSAGE

The AST National Conference in 2026 will be in Seattle, Washington, which is known for its scenic views, culture, good coffee, and rain. Seattle is a great destination and these practical travel and planning tips will help you have a great time without breaking the bank.

Flying to the “Emerald City”

Book Flights Early

Summer is peak travel season in Seattle, so flights will fill up fast. Start checking fares at least three to six months ahead of the conference. Set alerts using tools like Hopper or Google Flights to grab the best deals.

Compare Airport Options

Seattle-Tacoma International Airport (SEA) is the primary hub but consider nearby airports like Bellingham (BLI) or even Portland (PDX) if you're open to a scenic drive or rail ride.

Fly Midweek

The conference runs Sunday-Tuesday, with preconference Saturday. Weekday flights can be less expensive so if your schedule allows, arrive a day early and enjoy the city without the rush.

Conference Hotel – The Westin Seattle

1900 5th Avenue, Seattle, Washington, USA, 98101

Find the hotel room block link online at www.ast.org.

Book a Room to Share

Split a room with fellow attendees to cut your lodging bill in half or more. AST member pages, state assemblies, or even national forums can help connect you with reliable roommates. AST has rooms blocked for attendees.

Dining Deals in a Foodie Town

Plan Your Meals

Seattle's food scene is incredible, but it doesn't have to be expensive. Avoid tourist traps near Pike Place and opt for local favorites or food trucks.



Find the Nearest Store

Go to the nearest Walgreens, Costco, Wal-Mart or store of your liking and stock up on a pack of bottled water, sodas, crackers, fruit or whatever your favorite quick snack may be and purchase there instead of having to pack anything extra.

Take Advantage of Happy Hour

Nearly every Seattle restaurant and bar offer a happy hour menu. You can get high-quality meals and drinks at a fraction of the usual cost if you time it right.

Pack Smart Snacks

Bring protein bars, trail mix, and reusable water bottles to stay fueled during long conference days. Save sit-down meals for socializing and networking.

Navigating the City on a Budget

Use Public Transit

Seattle's Link Light Rail connects the airport to downtown for under \$4. The city's buses and streetcars are safe, clean, and affordable. Download the Transit or OneBusAway app to plan routes easily.

Walk or Ride a Scooter

Seattle is a walkable city, but there are also electric scooters and bike shares are also everywhere and cost less than rideshares for short trips.

Skip the Rental

Unless you plan to explore the area fully, a rental car

isn't necessary. Parking is expensive and traffic can be hard to contend with.

Rideshare Options

Uber and Lyft are great options you can schedule on their apps. Split the cost of the trip straight off the app if others are riding with you.

More Ways to Save

Apply for Travel Scholarships

Attend your state assembly meetings and see what they have to offer. Run for a delegate position in your state to vote on a national level. There are 6 delegates and 6 alternate delegates positions that are voted on at the workshop meetings to determine who will be going. Some states offer a stipend which could help cover airfare, lodging, or registration. You need to attend certain parts of the conference as a group to make you eligible for the stipend so check in with your state assemble and learn how your state conducts business.

Never Been to an AST Conference?

Apply for a first-timers scholarship supported by AST and AST past presidents. The scholarship awards up to \$1,000 to offset expenses of the event. For requirements, more information and how to apply, watch www.ast.org for the application at the beginning of the year.

Final Thought

Whether it's your first national conference or your tenth, Seattle 2026 is sure to be one to remember. A little planning and a few clever hacks can help you save, so you can focus on what matters: continuing your education, connecting with colleagues, and celebrating everything that makes our profession so extraordinary.

Start saving now, and we will see you in Seattle, Washington!

Interested in serving on a medical mission?



Check out our Medical Missions page with details and resources, and start planning your pathway to assist those in need.

Visit www.ast.org - About Us - Medical Missions



AST News

AT A GLANCE



Happy Holidays from the AST Board of Directors

Front row: Director Jaime Lopez, CST, CSFA, RN, FAST; Secretary Rob Blackston, MEd, CST, CSFA, FAST; President Joseph Charleman, DBA, CST, CSFA, FAST; Vice President Dustin Cain, CST, CRCST, CHL, FAST; Treasurer Rachel Clark, CST, CSFA, ST-R, FAST; Director Lisa Day, MA, CST, CSFA, FAST

Back row: Director Chris Blevins, BS, AAS-ST, CST, FAST; Director Brooke Oliver, MEd, CST, FAST; Director David Blevins, MHA, CST, CSFA, FAST; Director Monica Thulon, CST, CSFA, FAST; Director Stephanie Austin, EdD, CST, FAST

On behalf of the AST Board of Directors and AST staff, we wish everyone a safe and healthy holiday season.

LAST CHANCE! APPLY FOR A MEDICAL MISSION SCHOLARSHIP



Did you serve on a medical mission this year? If so, you may be eligible to apply for a medical mission scholarship.

Eligibility

To be eligible for a mission scholarship you must:

- Be an active AST member with currency.
- Complete and submit the Mission Medical Application and the Medical Mission Verification Form by

December 31 of the year of your mission.

- Provide a description of your membership history—join date and any AST involvement.
- Upload official documentation of the mission program you have described.
- Upload official receipts documenting the costs incurred by the individual and all costs must be shown in dollars. All assistance is determined after the medical mission trip has occurred and the appropriate documentation has been provided. Upload supporting documents below.
- Upload two letters of recommendation, along with an article describing your experience for *The Surgical Technologist* journal and related photos.
- Write an article describing your experience for *The*

Surgical Technologist and provide related photos before you will be reimbursed.

CE Credit

In addition to the medical mission scholarship, you could earn as many as 10 hours of CE credit toward your CST recertification. You can earn CE credit for a medical mission once per certification cycle but are only eligible to receive one scholarship.

DISCOUNTS

Earn two months FREE membership when you recruit a colleague to join AST

Earn two or more months of FREE membership with the Member-Get-A-Member program. Recruit colleagues and AST will extend your membership by the appropriate number of months. Here's how:

- Recruit a valid new member at the one-year membership rate of \$80.
- Make sure that each person you recruit provides AST with your name and your AST member number when filling out their application.
- After AST receives the recruited member's application,

we will extend your membership by two months for each person you recruit.

- Recruit two members at the \$80-level, and we'll extend your membership by four months! The more people you recruit, the longer your membership gets extended. Bonus membership months are not applicable to members who recruit themselves, students, or retired/disabled members. No substitutions will be permitted. Your membership must be current to receive the bonus months.

Potential members MUST supply your name and your AST member number for you to receive bonus membership months. If a person's membership has lapsed for more than a year, they are considered a new member. Call our Member Services team at 1-800-637-7433 for more information.

MILESTONES

Happy Anniversary!

Congratulations to the following state assembly as it celebrates an anniversary this month! AST appreciates your hard work, dedication, and all your years of service for making our state assemblies the backbone of this organization.

- Washington - 26 years

AST Compass Survey Snapshot

Highlighting insights from surgical technologists around the country

The AST Compass Survey is a new annual initiative designed to align organizational efforts with the evolving needs and professional scope of our membership. Its purpose is to strengthen member value, satisfaction, and outcomes by gathering critical feedback from both active and inactive members to inform AST's strategic priorities.

The inaugural survey launched in May 2025 and remained open for just over a month, timed around the National Conference to maximize engagement. More than 4,000 responses were collected across roughly 25 questions, covering demographics and membership value.

Key findings include:

- The CST certification remains the recognized gold standard.
- Education continues to be a priority among peers.
- The profession is highly diverse, with most standard roles encompassing a broad range of ancillary responsibilities across multiple specialties.
- Respondents reinforced that surgical technologists are highly educated, adaptable, and prepared to take on complex roles in their respective environments.

AST is committed to optimizing members' value and your input helps us do this. This is the first survey of many, and we hope over time, more of you will complete our surveys so we can become better informed about what is affecting your role, the surgical technology profession and the ever-changing healthcare landscape.

We invite you to view a snapshot of results from the inaugural AST Compass Survey on the next page, page 534.

Thank you to those of you who participated. We look forward to sharing even more insights and data in the future.

– Jodi Licalzi, AST Chief Executive Officer

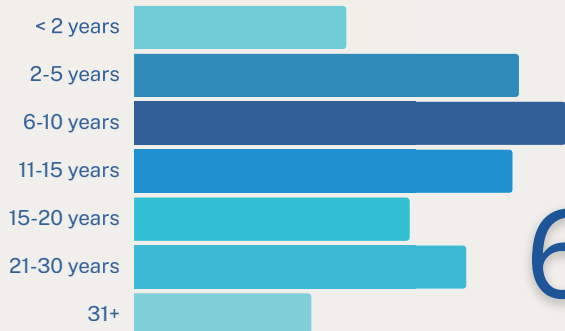




Who We Are

A snapshot of today's surgical technology professionals

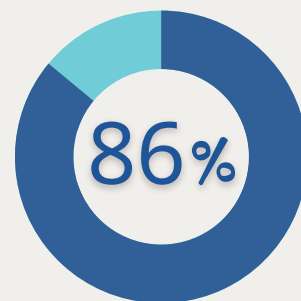
Membership Overview



64%

have been AST members for 6+ years

Active Members*

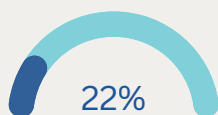


+Based on respondents who reported active AST membership.

Experience Timeline

60%

have worked in the profession for 11+ years

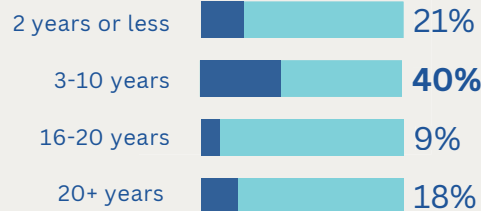


6-10 years



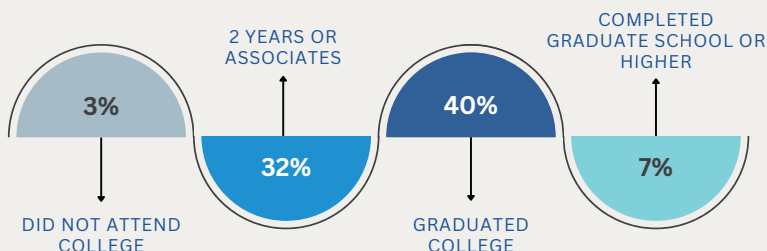
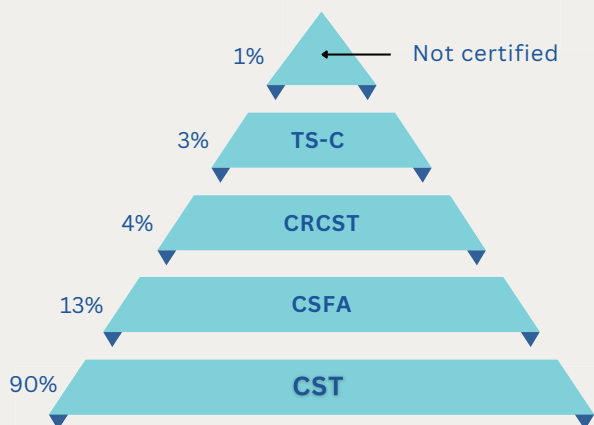
20+ years

Years in Profession



Years in Current Role

Credentials & Education



90%

9 out of 10 respondents hold the CST credential*

Primary Place of Work & Roles



61%

Healthcare Facility



15%

Ambulatory Center



9%

Academic Institution

Primary Role



68%

Surgical Technologist

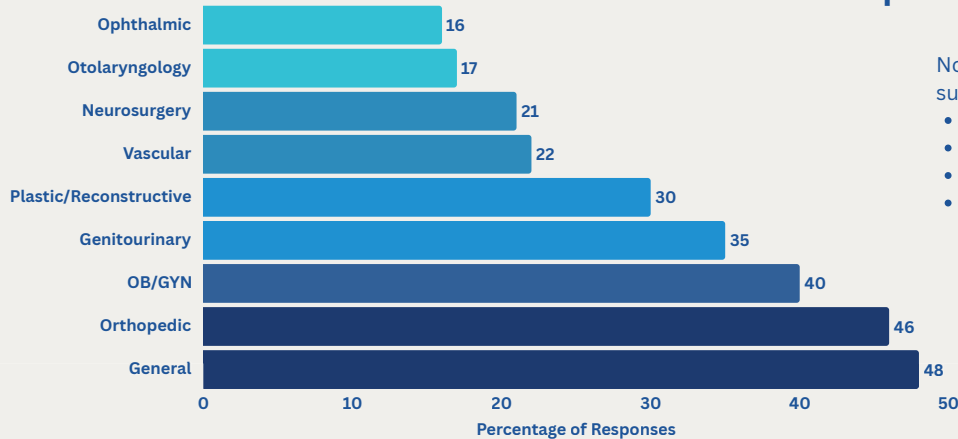
11% Surgical First Assistant

7% Educational Leadership*

e.g., Program Director, Clinical Educator, Coordinator, Instructor

How and Where We Work

Specialty Focus



Top Surgical Practice Areas

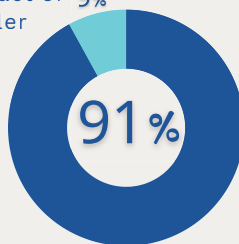
Notable other specialties or subcategories:

- 30% Robotics (various specialties)
- 11% ENT/Head & Neck,
- 10% GI/Endoscopy,
- 35% "Other" Specialized Procedures (e.g. Dermatology, Fetal, Pediatric, Renal)

Employment & Credential Impact

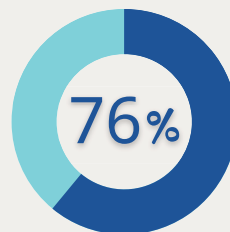
EMPLOYED BY

Contract or Traveler 9%



Healthcare Facility

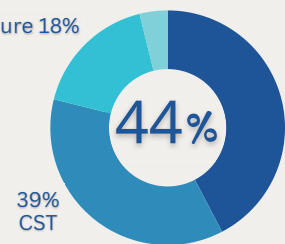
REQUIRED FOR EMPLOYMENT



CST

PAY INCREASE FOR CREDENTIAL

Unsure 18% 4% TS-C



NONE

Disclaimer: The information presented is derived from the AST Compass 2025 survey responses. Data and conclusions are representative only of those who participated in and completed the survey and should not be interpreted as official statements, policy positions, or endorsements by the Association of Surgical Technologists (AST).



February 6-7, 2026 | Nashville, TN
**2026 AST PRE-CON WORKSHOP
 & EDUCATORS CONFERENCE**



The Vanderbilt Experience

In collaboration with Vanderbilt University Medical Center, AST's 2026 Educators Conference will feature a two-part preconference experience designed to empower surgical technology educators with innovative strategies, practical tools, and immersive learning opportunities.

Educational sessions will include presentations from Vanderbilt faculty and program leaders, exploring topics such as academic partnerships to strengthen the CST pipeline, student preparation, succession planning, and emerging technologies shaping the profession of surgical technology.

The second, small-group experience will offer attendees the opportunity to tour Vanderbilt's adult and pediatric ORs, gaining firsthand insight into clinical operations, teaching integration, and simulation-based training across specialty labs.

Separate registration and fees are required for each part of The Vanderbilt Experience. Secure your spot early—space is limited!

Thursday, February 5, 2026 | Pre-Con Workshop The Vanderbilt Experience

Separate registration and fees are required for each part of The Vanderbilt Experience.

7 am – 5 pm	<i>Registration open</i>
8:30 am - 2:20 pm	ATOM (Advanced Trauma Operative Management and Preparedness): Enhancing Surgical Technologist Readiness Cheryl Cotton
Lunch will be provided	Enhancing Surgical Tech Student Success through Perioperative Education: Onboarding Processes and Specialized Clinician Rotations at VUMC Peggy Hughes, CST
	Leadership and Learning in the Operating Room: The Multifaceted Role of Lead Surgical Technologists Alex Craft, CST; Jenn Maloney, CST
	Community Involvement and the future of Health Care Local educators and VUMC Leaders Pannel Discussion:
	Enhancing Specialized Education for Surgical Technologists: The Role of Preceptors in Pediatric Operating Rooms Yasmine Sanchez
3 – 5 pm	Tour/Educational Vanderbilt OR & Pediatric Enterprise Vanderbilt Tours

Friday, February 6, 2026 | Educators Conference

6:45 – 7:45 am	<i>Breakfast</i>
7 – 8 am	<i>Registration open</i>
8 am – 5 pm	Exhibits
7:45 – 8 am	Welcome AST President Joseph Charleman, DBA, CST, CSFA, CRCST, LPN, FAST
8 – 8:50 am	Opening Keynote
General Sessions	
9 – 9:50 am	Strengthening Student Communication Skills through Trauma Simulation Crystal Warner, CSA, CST, FAST
10 – 10:50 am	NBSTSA and CST Updates Robin Jenkins, CAE, ICE-CCP, NBSTSA CEO
11:00 – 11:50 am	Building Surgical Technology Pipelines Through Academic-Clinical Partnerships Lenore Gregg, CST, FAST; Jordan Schmitt, CST
Noon – 12:50 pm	Lunch



DOUBLE TREE BY HILTON-NASHVILLE DOWNTOWN
315 FOURTH AVENUE NORTH, NASHVILLE, TN 37219



Friday, February 6, 2026 | Educators Conference (cont.)

	Classroom and Management Track	Time Lab & Technology Track	CSFA & Intuitive Tracks
1 – 1:50 pm	<i>Tips and Strategies for Answering Multiple Choice Questions</i> Karen Chambers, MHA/Ed., CST, FAST	<i>Scrolling to Success: Leveraging Social Media and AI for CST Exam Mastery</i> Bradly Duren, CSA, CSFA, CST	<i>Classifications of Surgical Assistant Programs</i> Jeff Bidwell, CST, CSFA, FAST; Brenda Poynter, CST, CSFA, FAST
2 – 2:50 pm	<i>Teaching Smarter: How AI-Powered Handouts Are Revolutionizing Surg Tech Classrooms</i> John Ratliff, MHA, CST, FAST	<i>Making Boot Camp Fun: Engaging Students While Building Surgical Skills and Teamwork</i> Marianne Caviston, CST, CSPDT	<i>Preparing Your Students with Robotic Curriculum: Launching the da Vinci Online Training Certification</i> Marcy Duffy, CST, CSFA; Justin Evangelista
3 – 3:50 pm	<i>Generation Z Learners' Classroom Experiences in Surgical Technology Programs: A Descriptive Analysis</i> Ashley Smith, PhD, CST, FAST	<i>Building a Great Surgical Lab Even on a Small Budget</i> Jereka Thomas-Hockaday, EdD, CST, CSFA	<i>Preparing Your Students with Robotic Curriculum: Launching the da Vinci Online Training Certification</i> Marcy Duffy, CST, CSFA; Justin Evangelista
4 – 4:50 pm	<i>ARC/STSA Policy Updates</i> Christy Baily-Byers, MBA, APR; Ron Kruzel, MA, CAE, CST, FAST	<i>Clinical Case Logs: How to Streamline Required Documentation</i> Diana Amundson, MBA, CST, CSFA	<i>Preparing Your Students with Robotic Curriculum: Launching the da Vinci Online Training Certification</i> Marcy Duffy, CST, CSFA; Justin Evangelista
5:30 – 6:30 pm	<i>Reception</i>		

Saturday, February 7, 2026 | Educators Conference

8 am – 3 pm	Exhibits
7 – 8 am	Breakfast
8 – 11 am	<i>Peer Conversations</i>
10:10 – 11 am	<i>Peer Conversations Summaries</i>
	General Sessions
11:10 am – Noon	<i>When Students Shut Down or Blow Up: Trauma-Informed Strategies for Behavior Challenges in Surgical Technology Education</i> Nicole Presa, QMHP-CS, CST
Noon – 12:50 pm	Lunch
1 – 1:50 pm	<i>Can I Do This Forever?</i> Kathy Patnaude, BS, CST, FAST
	Closing
2 – 2:50 pm	<i>Program Construction 101</i> Stephanie Austin, EdD, CST, FAST

AST Registration Fees

AST Member: \$325 | Non-member: \$500

Separate registration and fees are required for each part of The Vanderbilt Experience.



Be sure to check ast.org for the most up-to-date conference offerings.

Register at www.ast.org

Meet the Speakers

Diana Amundson, MBA, CST, CSFA

Clinical Case Logs: How to Streamline Required Documentation

Experience a smarter approach to clinical case documentation that's efficient, accurate, and fully aligned with the Core Curriculum for surgical technology and surgical assisting. Learn how direct submission-to-spreadsheet integration and intuitive tracking tools can simplify your workflow and give instructors powerful insights into tracking student progress.



Stephanie Austin, EdD, CST, FAST

Program Construction 101

Build a surgical technology program that stands out! Learn how to create a high-impact program from the ground up—crafting strong curricula, powerful clinical partnerships, and accreditation-ready standards. Leave inspired with the tools to launch a program that drives student success and industry recognition.



**Christy Baily-Byers, MBA,
APR & Ron Kruzel, MA, CAE,
CST, FAST**

ARC/STSA Policy Updates



Marianne Caviston, CST, CSPDT

Making Boot Camp Fun: Engaging Student While Building Surgical Skills and Teamwork

“Making Boot Camp Fun” is an interactive, team-based approach to early lab training that transforms foundational surgical skills into engaging competitions, fosters teamwork and confidence, and incorporates industry exposure to prepare students for clinical success.



Karen Chambers, MHA/Ed, CST, FAST

Tips and Strategies for Answering Multiple Choice Questions

Empower your students to excel on the CST exam with fresh, practical strategies, and interactive teaching techniques. This session offers dynamic, evidence-based approaches that strengthen critical thinking and boosts national exam performance.



**Jeff Bidwell, CST, CSFA,
FAST; Brenda Poynter, CST,
CSFA, FAST**

Classifications of Surgical Assistant Programs

Surgical assisting education is evolving—and flexibility is key. Discover three innovative educational models from the Surgical Assistant Core Curriculum, 4th Edition, each designed to meet the unique needs of schools, students, and communities. Learn the pros and cons of each model and find the right fit for your program's success.



**Marcy Duffy, CST, CSFA;
Justin Evangelista**

Preparing Your Students with Robotic Curriculum: Launching the da Vinci

Online Training Certification

Learn how to prepare students for robotic-assisted surgery with the new da Vinci Online Training Certification. This session outlines a flexible curriculum that introduces core concepts, teaching strategies, and pathways for integrating the da Vinci Surgical System into medical education.



Brady Duren, CSA, CSFA, CST

Scrolling to Success: Leveraging Social Media and AI for CST Exam Mastery

Discover how integrating social media and artificial intelligence can transform surgical technology education. This session highlights innovative strategies to boost student engagement, personalize learning experiences, enhance CST exam performance, and prepare future professionals for success in today's digitally driven healthcare environment.



Robin Jenkins, CAE, ICE-CCP, NBSTSA CEO
NBSTSA and CST Updates





Register at www.ast.org

**Lenore Gregg, CST, FAST;
Jordan Schmitt, CST**

Building Surgical Technology Pipelines Through Academic-Clinical Partnerships

Explore innovative collaborative pipeline initiatives between surgical technology programs and clinical partners—including Cleveland Clinic's integrative internship and high school outreach efforts. This session showcases how these partnerships enhance student career readiness, strengthen education-to-practice transitions, and empower educators to shape the future of the profession.



Ashley Smith, PhD, CST, FAST

Generation Z Learners' Classroom Experiences in Surgical Technology Programs: A Descriptive Analysis

This qualitative dissertation examines how instructional strategies in surgical technology programs align with Generation Z students' learning preferences, revealing a need for more interactive, tech-integrated, and student-centered approaches to enhance engagement, motivation, and educational outcomes in allied health education.



Kathy Patnaude, BS, CST, FAST

Can I Do This Forever?

Gain practical strategies to stay energized, effective, and balanced as a surgical technology educator. This session provides actionable insights for preventing burnout, maintaining classroom excellence, and prioritizing self-care—while managing the demands of students, clinical sites, and administrative responsibilities.



Jereka Thomas-Hockaday, EdD, CST, CSFA

Building a Great Surgical Lab, Even on a Small Budget

Join Delletec 2.0 leadership as they present cost-effective strategies for implementing mock surgery simulations in surgical technology labs, tailored especially for small and rural campuses.



Nicole Presa, QMHP-CS, CST

When Students Shut Down or Blow Up: Trauma-Informed Strategies for Behavior Challenges in Surgical Technology Education

Apply practical, trauma-informed approaches to address behavioral challenges and foster psychological safety in the classroom. This session equips educators with tools to support student growth and resilience while upholding high academic and professional standards.



Crystal Warner, CSA, CST, FAST

Strengthening Student Communication Skills Through Trauma Simulation

Experience how high-stress simulations can transform surgical technology training. This session highlights innovative approaches that strengthen communication, boost student confidence, and cultivate essential teamwork skills for success in the operating room and beyond.



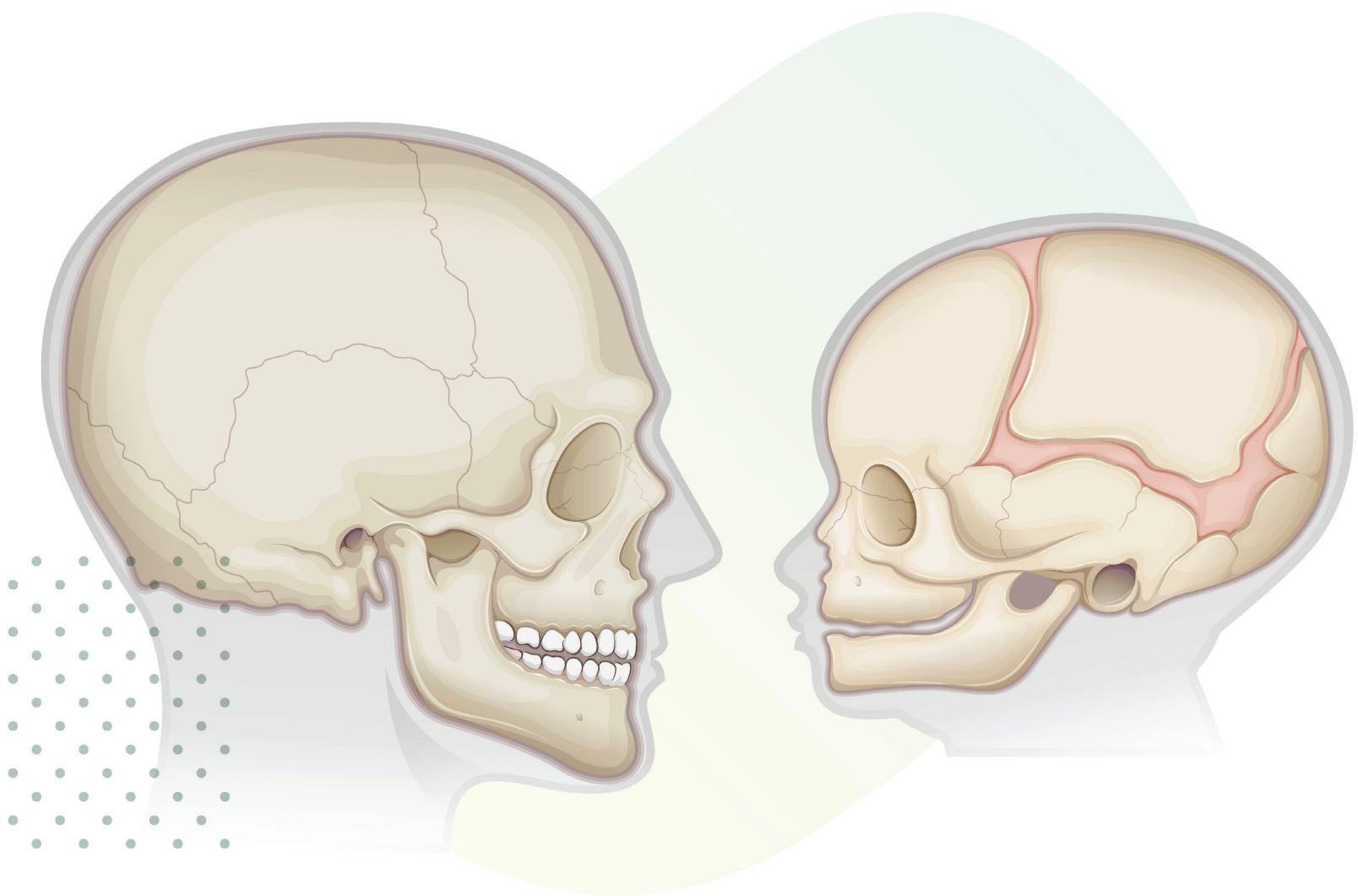
John Ratliff, MHA, CST, FAST

Teaching Smarter: How AI-Powered Handouts are Revolutionizing Surg Tech Classrooms

Learn how AI tools like ChatGPT can revolutionize lecture preparation and student engagement. This session showcases how customizable, all-in-one handouts can guide learning, reinforce key concepts, and streamline instruction—helping educators save time while elevating the classroom experience.



Be sure to check ast.org for the most up-to-date conference offerings.



Craniosynostosis

Part 1 of 3

KEVIN B. FREY, CST

Craniosynostosis is a complex congenital condition that affects the normal growth and shape of an infant's skull due to the premature fusion of one or more cranial sutures. This abnormal fusion can lead to increased intracranial pressure, developmental delays, and distinct craniofacial deformities if left untreated. Understanding the foundational aspects of this condition is essential for healthcare professionals involved in pediatric care, surgery, and diagnostics.

In part one of this continuing education series, the relevant anatomy, pathology, epidemiology, and types of craniosynostosis will be explored in depth. The discussion will also highlight the various risk factors that contribute to the development of craniosynostosis and outline the clinical and radiological methods used to confirm a diagnosis.

ANATOMY OF THE NEWBORN SKULL

The skull of vertebrates consists of two divisions – neurocranium that surrounds and covers the brain and viscerocranium that forms the face. The focus of this discussion is on the neurocranium that is divided into two sections.

- Membranous neurocranium: Forms through the process of intramembranous ossification and in process creates the frontal bone, the squamous portion of the temporal bone, the intraparietal portion of the occipital bone, and the parietal bone.¹
- Cartilaginous neurocranium: Forms through the process of endochondral ossification and creates the ethmoid and sphenoid bones, the petrous and mastoid portions of the temporal bone, and the occipital bone.¹

LEARNING OBJECTIVES

- ▲ Detail the anatomy of the newborn skull
- ▲ Discuss the pathology and epidemiology of craniosynostosis
- ▲ List the risk factors for craniosynostosis
- ▲ Assess the various types of craniosynostosis
- ▲ Explain the various types of scaphocephaly craniosynostosis.
- ▲ Identify methods used for confirming craniosynostosis diagnosis

KEYWORDS

cranosynostosis, helmet therapy, neurocranium, nonsyndromic cranosynostosis, Omega sign, scaphocephaly (sagittal craniosynostosis), sutures, syndromic cranosynostosis

DEFINITIONS

Autosomal dominant inheritance: A genetic condition or trait that can be inherited by a child from the parent. The condition occurs when a variant is present on one allele of a given gene. One copy of a mutated gene from one parent can cause the genetic condition. A child whose parent has the mutated gene has a 50% chance of inheriting that genetic condition.

Bossing: Protuberance of the skull that can be normal but may be associated with certain pathologies such as types of craniosynostoses. It can occur with any bone of the skull.

Bregma: Anatomical landmark where the coronal and sagittal sutures intersect, located at the junction of the frontal bone and two parietal bones.

Fibroblast growth factor receptor pathway (FGFR): Receptors that bind to members of the protein group called fibroblast growth factors (FGF). FGFs are cell signaling proteins produced by macrophages that are needed for the normal development of human cells of which 23 members of the FGF proteins have been identified in humans. Abnormalities in their function will cause developmental defects in infants. Therefore, the FGFR receptors are also involved in pathological conditions. For example, FGFR-2 is associated with Crouzon's syndrome.

Perisutural sclerosis: Increased thickening of the bone adjacent to a cranial suture that can be an indication of premature fusion.

Hypochoic gap: Normal appearance of a cranial suture in an ultrasound image. The image will show the gap as a dark line, indicating the suture is normal and functioning as the ossification center. When the suture is prematurely fused, the gap will not show up on the ultrasound image.

Optical coherence tomography: A non-invasive test in which light waves are used to take cross-section images of the retina. The ophthalmologist can view each layer of the retina and optic nerve, allowing them to measure their thickness and monitor changes over time.

Otitis media with effusion: Thick or sticky fluid that collects behind the eardrum in the middle ear.

The cranial sutures form at the junctions of the cranial bones. They are only located between the cranial bones and are joined together by a thin layer of connective tissue called a suture ligament. During fetal development the bone tissue is placed

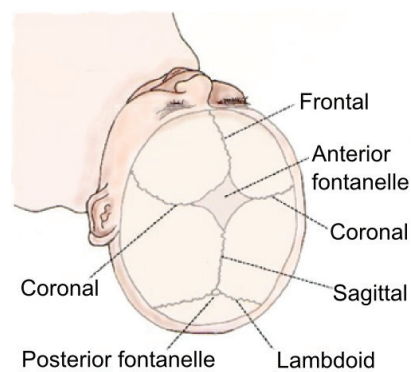


Figure 1. Sutures of the bony cranium

along the suture lines, therefore, the cranial sutures are the ossification centers of the skull.¹ The sutures allow the brain to enlarge and grow through this process of progressive bone accumulation that contributes to skull expansion and a symmetrically shaped head. The sutures are immovable and therefore are classified as a synarthrotic joint. However, in the newborn, the sutures allow the bones to slightly move during the birthing process.²

The bones that compose the skull are two frontal and parietal bones and one occipital bone. The sutures are as follows (**Figure 1**).

- **Metopic:** Also known as the frontal, interfrontal, and median frontal suture that is a vertical suture that connects the two halves of the frontal bone. It may fuse as early as the third month of age and is usually fused in all infants by nine months. By age seven the suture has usually disappeared, but in rare cases it can still persist. This is referred to as metopism. Its persistence is clinically insignificant except clinicians and neurosurgeons should confirm its presence because it can be mistaken for a frontal bone fracture.³
- **Coronal:** Connects the frontal bones with the parietal bones. The suture extends from ear to ear.
- **Sagittal:** Connects the two parietal bones in the midline of the skull.
- **Lambdoid:** Connects the parietal bones to the occipital bone extending across the back of the skull.
- **Squamosal:** Connects the squamous portion of the temporal bone with the parietal bones (**Figure 2**).

CRANIOSYNOSTOSIS: PATHOPHYSIOLOGY, CAUSES, AND EPIDEMIOLOGY

Craniosynostosis occurs when one or more cranial sutures ossify too early and do not function as the skull's ossification center(s). The growth of the skull is impeded causing various deformations depending on the cranial suture(s) that have ossified. Virchow's (Rudolf Virchow, 1821-1902, "Father of Modern Pathology") classic law of craniosynostosis states that premature fusion of a cranial suture results in limited development of the skull perpendicular to the fused suture and to compensate the skull grows in the direction parallel to the fused suture, providing room for the brain tissue.⁴

The two types of craniosynostosis are nonsyndromic and syndromic. Nonsyndromic is the most common. Its cause is not known, but research has focused on being a mix of genetic and environmental factors. Syndromic is caused by alterations in specific genes that then cause various types of syndromes including Apert, Crouzon, and Pfeiffer. The syndromes affect skull development and therefore are risk factors for craniosynostosis.

Approximately 20% of all syndromic craniosynostosis cases are genetically based, through autosomal dominant inheritance.⁵ About 86% of those cases involve a single-gene mutation and 15% are related to chromosomal abnormality.⁵ The genes affected most often are those in

the fibroblast growth factor receptor pathway.

Depending on the research report, estimates of the incidence of craniosynostosis ranges from 1 in 2,000 to 2,500 live births with a male-to-female ratio of 4 to 1.^{1,5} Nonsyndromic craniosynostoses account for 75% to 95% of cases, while syndromic account for 5% to 15%.^{1,5} Statistics vary in published research articles, but sagittal craniosynostosis occurs most often in 40% to 60% of cases.^{1,5} Depending on the research article, unilateral coronal craniosynostosis is next with 20% to 25% of cases but also reported to be 15% to 20% with metopic craniosynostosis reported 15% to 30% of cases.^{1,5} Lambdoid craniosynostosis occurs fourth in 1% to 5% of cases. Ossification of two or more sutures is very rare and usually occurs in syndromic cases.

Multiple risk factors have been associated with development of craniosynostosis including the following.

- Environmental: Advanced parenteral age, use of tobacco products, and in vitro fertilization have been associated with craniosynostosis development.
- Ethnicity: Studies have shown that the Caucasian race has higher rates of craniosynostosis as compared to other ethnic groups.⁶ Additionally, a higher incidence of metopic craniosynostosis (see below for description of craniosynostosis types) occurs in Caucasians.⁵
- Gender: As previously stated, males have a higher

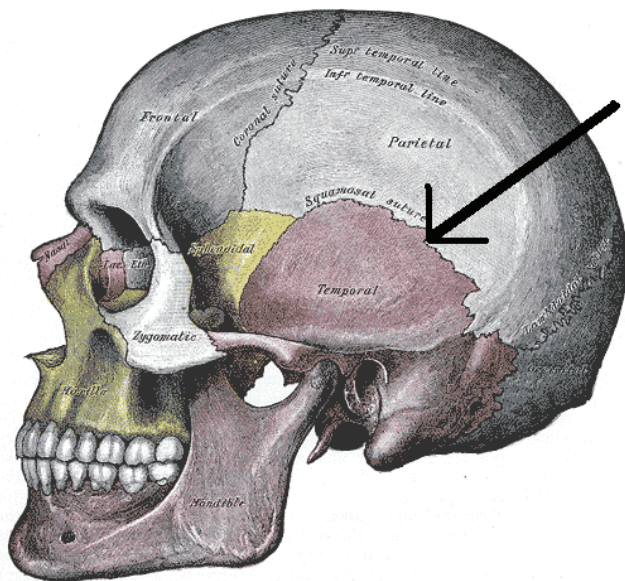


Figure 2. Squamosal suture

"The gold standard for imaging is computed tomography (CT) scan that provides the ability to assess all sutures because of the three-dimensional image of the skull."

occurrence of craniosynostosis than females. Males are more likely to have sagittal and metopic craniosynostosis, whereas females are more predisposed to unilateral coronal craniosynostosis.⁵

- Mechanical forces: Multiple births, bicornuate uterus, and pathologies such as hypoxic-ischemic encephalopathy are associated with single-suture craniosynostosis.⁵
- Thyroid disease: Increases the risk for the development of single-suture synostosis, particularly sagittal craniosynostosis. However, diagnosed thyroid disease can be managed to avoid fetal complications.
- Vitamins: Vitamins B6, C, and E lower the risk for certain types of craniosynostosis, whereas vitamins such as B12 may increase the risk of metopic craniosynostosis.⁵

Evaluating the head shape is an important clinical diagnostic method as it provides the physician with a starting point for deciding the course of treatment (**Figure 5A**). Applying Virchow's law explains the characteristics associated with the head shapes of the various types of craniosynostosis. Only after birth can deformity be clearly confirmed, including the ability to palpate the bony ridge associated with scaphocephaly.

- Scaphocephaly (sagittal synostosis): Premature fusion of the sagittal suture (**Figures 3 and 5B**). The shape of the head is long and narrow with a larger anteroposterior diameter. A ridge, called the Omega sign, that can be felt on palpation is present along the sagittal suture (**Figure 4**).¹ Early ossification of the suture is associated with a more prominent scaphocephalic deformity as compared to late ossification that is associated with less of a deformity.¹

Because Parts II and III articles will focus on surgical procedures for treating scaphocephaly, the following information regarding specific subtypes is provided:

- Dolichocephaly: Entire sagittal suture is ossified, characterized by an elongated, narrow head.
- Leptocephaly: Anterior third of the suture is ossified, characterized by a narrowing of the frontal and parietal bones.
- Cyncephaly: Middle third of the suture is ossified, characterized by a depression in the cranial bone posterior to the coronal sutures.
- Batiocephaly: Middle and anterior third of the suture are ossified, characterized by occipital bossing.¹

"Premature fusion of a cranial suture results in limited development of the skull perpendicular to the fused suture and to compensate the skull grows in the direction parallel to the fused suture."

- Sphenocephaly: Middle and poster third of sutures are ossified and is the most common type. Characterized by bossing of the bregma and frontal bone.¹
- Clincephaly: Referred to as saddle head. It can occur later during sagittal craniosynostosis, marked by concavity along the middle of the midline.⁷
- Anterior plagiocephaly: Premature fusion of a single coronal suture (**Figure 5C**). The forehead looks flattened on the affected side with the chin deviating towards the unaffected side and on the affected side the eye appears larger, the eyebrow is raised, and the ear is anteriorly shifted.⁵
- Posterior plagiocephaly: Premature fusion of a single lambdoid suture (**Figure 5D**). Characterized by flattening of the parietal bone and occiput on the affected side as well as an enlarged mastoid process and the ear is positioned inferior and posterior as compared to the normal side.⁸
- Pachycephaly: Premature fusion of bilateral lambdoid sutures causing a total flatness of the back of the skull.
- Trionocephaly: Premature fusion of the metopic suture (**Figure 5E**). The forehead is narrow and pointed and when viewing the head from above it presents a triangular shape.⁸
- Brachycephaly: Premature fusion of both coronal sutures (**Figure 5F**). The condition causes shortened anteroposterior and widened transverse diameters of the skull.⁸
- Oxycephaly: Also called acrocephaly, high-head syndrome, or turriccephaly. This occurs because of the fusion of more than one suture resulting in a towering appearance of the skull.⁵
- Kleeblattschadel: Also called cloverleaf skull, is a rare and devastating form of craniosynostosis caused by the

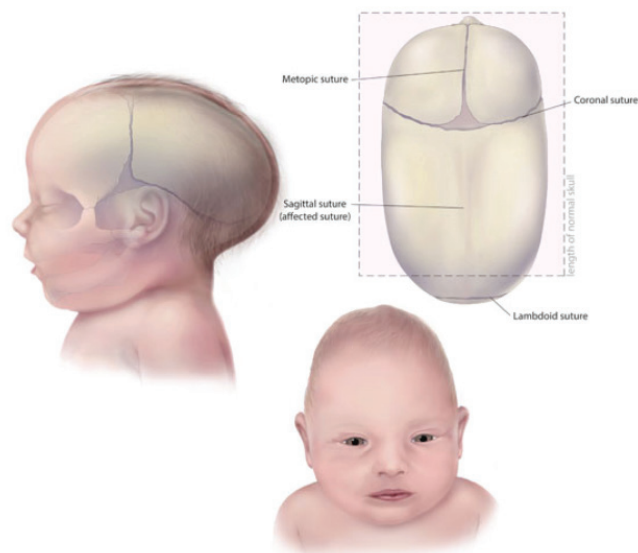


Figure 3. Sagittal Craniosynostosis

premature fusion of multiple cranial sutures, usually the coronal and lambdoid.⁵ Characterized by several conditions including facial deformity, hydrocephalus, increased intracranial pressure, neurological deficits, small limb development, and temporal bulging.⁹

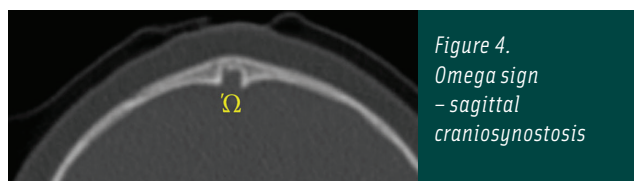


Figure 4.
Omega sign
– sagittal
craniosynostosis

DIAGNOSING CRANIOSYNOSTOSIS

The diagnosis is initially clinical. Depending on the type of craniosynostosis, the physician is able to visualize the cranial deformations as well as palpate the skull. For example, the physician will be able to palpate the ridge (Omega sign) associated with sagittal craniosynostosis as well as palpate the absence of the displacement of the two bones adjacent to the suture. However, a final diagnosis is confirmed through radiological imaging. Plain x-rays are helpful in showing the bony ridge, perisutural sclerosis, and inability to clearly see the suture. Cranial ultrasound is used specifically to confirm ossification of the suture. A normal ultrasound will show a hypoechoic gap, whereas the gap will not be seen in prematurely fused sutures.^{1,5}

The gold standard for imaging is computed tomography (CT) scan that provides the ability to assess all

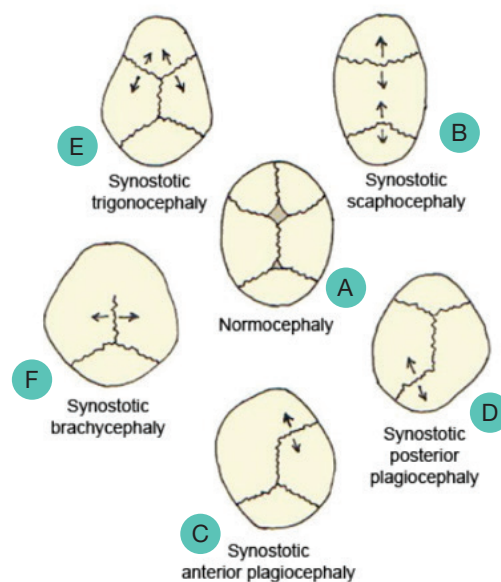


Figure 5. Types of single suture craniosynostosis:
A) Normocephaly B) Scaphocephaly C) Anterior plagiocephaly,
D) posterior plagiocephaly, E) trigonocephaly, F) brachycephaly

sutures because of the three-dimensional image of the skull. CT scans can also help assess the four ventricles in patients who exhibit hydrocephalus. Surgeons often use the CT scans for preoperative planning purposes. Magnetic resonance imaging (MRI) is not as effective as CT scan in diagnosing craniosynostosis, but provides additional evaluation of hydrocephalus or other intracranial abnormalities.^{1,5}

For cases in which syndromic craniosynostosis is suspected, genetic testing is essential, particularly for FGFR gene mutations. Additionally, intracranial pressure (ICP) assessment and monitoring should be completed.^{10,11} Increased ICP is a result of hydrocephalus, abnormal osseous changes to the skull base that affects venous outflow, and midface hypoplasia that causes sleep apnea.⁵ The initial ophthalmological examination is performed to evaluate for papilledema. An optical coherence tomography may be completed because of its effectiveness in identifying elevated ICP.¹¹⁻¹³ However, if these tests are inconclusive, intracranial pressure monitoring should be completed.¹⁴

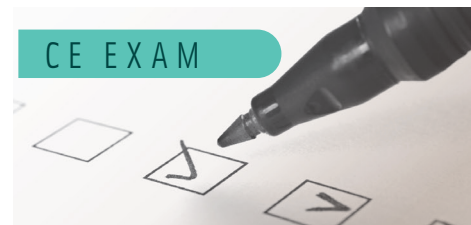
Patient with syndromic craniosynostosis who are suspected for sleep apnea may undergo a polysomnogra-

phy.^{15,16} Hearing evaluations may also be performed, as the patient can suffer from hearing loss in both nonsyndromic and syndromic craniosynostosis due to otitis media with effusion.⁵

Part II in the January edition of *The Surgical Technologist* will discuss the endoscopic-assisted repair for craniosynostosis.

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Craniosynostosis, Part 1

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1. Females have a higher incidence of craniosynostosis as compared to males.
 - a. True
 - b. False
2. Which of the following is considered the "gold-standard" imaging technique for diagnosing craniosynostosis?
 - a. MRI
 - b. X-ray
 - c. CT scan
 - d. Ultrasound
3. Which of following is the term applied to the bony ridge present in scaphocephaly?
 - a. Omicron
 - b. Lambda
 - c. Omega
 - d. Alpha
4. Which of the following terms refers to the normal appearance of a cranial suture in an ultrasound?
 - a. Hypoechoic gap
 - b. Bregma
 - c. Perisutural sclerosis
 - d. Bossing
5. Which of the following cranial sutures is clinically significant in that it can be mistaken for a frontal bone fracture?
 - a. Coronal
 - b. Lambdoid
 - c. Squamosal
 - d. Metopic
6. Which of the following is the most common type of craniosynostosis?
 - a. Metopic
 - b. Sagittal
 - c. Coronal
 - d. Lambdoid
7. Which of the following neurocranial divisions forms the ethmoid and sphenoid bones?
 - a. Cartilaginous
 - b. Viscerocranium
 - c. Membranous
 - d. Synarthrotic
8. Which of the following causes syndromic craniosynostosis?
 - a. Lack of vitamin B6
 - b. Thyroid disease
 - c. Gene changes
 - d. Encephalopathy
9. Which of the following subtypes of scaphocephaly is most common?
 - a. Leptocephaly
 - b. Batrocephaly
 - c. Dolichocephaly
 - d. Sphenocephaly
10. Which of the following does not contribute to increased intracranial pressure in syndromic craniosynostosis?
 - a. Midface hypoplasia
 - b. Otitis media with effusion
 - c. Hydrocephalus
 - d. Osseous changes to skull base

CRANIOSYNOSTOSIS, PART 1

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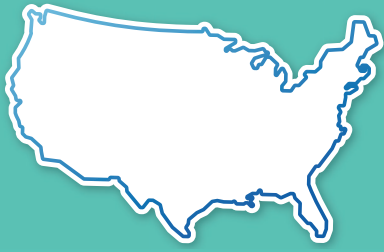
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Meet AST's Education and Professional Standards Committee



Felicia McGhee, EdD-C, CST, FAST, CHAIR

Felicia (Fe) McGhee has been honored to serve on the Education and Professional Standards Committee since 2021. Felicia was recently appointed as the committee's chair for the 2025-2026 year. She celebrates over 11 years as a Certified Surgical Technologist. She is a native of Baton Rouge, Louisiana, but graduated from Cambridge College in Aurora, Colorado, in 2004.

She began working for Denver Health Medical Center after her graduation until moving back to Louisiana in 2009. In 2013, she began working for South Louisiana Community College, Lafayette, Louisiana. In 2015, she transferred to the sister campus in Baton Rouge, Baton Rouge Community College, as the clinical coordinator at both programs. She became program director in 2024 and recently became program director of Healthcare Simulations and Experiential Learning.

Her passion is to reach every

learner and give them the fundamental skills to build careers. She believes that if a learner enjoys her lectures, they are absorbing the material.

Fe served on the Louisiana State Assembly Board from 2014 to 2023 and has held the positions of president and board of directors. She has been a member of AST for many years and was awarded the Fellow of the Association of Surgical Technologists (FAST) designation in 2024.

She also completed a Bachelor of Arts in Sociology in 2012, with a concentration in Child and Family Studies. She obtained a Master of Science in Education with a concentration in Instructional Design and Technology in 2018. She defended her dissertation in April 2025, earning a degree in Educational Technology.

She also works part-time in the operating room. When she is not in class or the OR, she spends time shopping, traveling, hanging with her Mardi Gras Krewe (Krewe of Athena) or doing community service with her OES chapter (POA164).

Fe has four children: one son, 28, and three daughters, 22, 20, and 11. The last one keeps her on her toes.



Shea Coleman, CST, FAST

Shea Coleman is the program director of the surgical technology program at Holmes Community College in Ridgeland, Mississippi. With over 15 years of experience in the operating room and more than a decade as an educator, Shea has dedicated her career to advancing surgical technology education and shaping the next generation of surgical technologists.

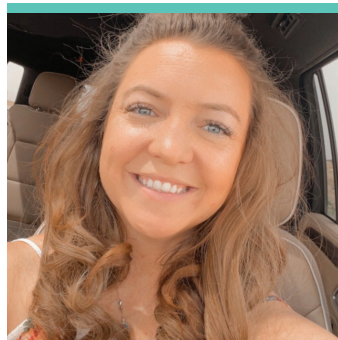
Since joining Holmes in 2014, Shea has played a key role in developing innovative teaching strategies, expanding clinical partnerships, and ensuring the program maintains full compliance with ARC/STSA and CAAHEP accreditation standards. In 2022, she earned the distinguished Fellow of the Association of Surgical Technologists (FAST) designation in recognition of her leadership and service to the profession.

Shea has also been an active member of the Mississippi State Assembly

since 2011, serving in multiple roles including president, vice president, and currently treasurer. In addition, she contributes nationally as a member of the AST Education and Professional Standards Committee, where she helps shape policy and curriculum improvements that impact surgical technology programs across the country.

Beyond her professional roles, Shea is passionate about mentoring students, advocating for surgical conscience, and promoting professional growth within the field. She is known for her motto, *"In silence we prepare, in precision we protect"*—a reflection of the vital yet often unseen role surgical technologists play in patient care.

When not teaching or serving the profession, Shea enjoys kayaking, traveling, and spending quality time with her family.



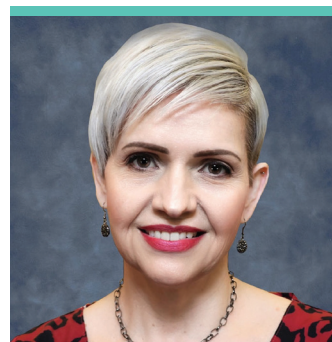
Kristie Cole, M.Ed, CST, FAST

Kristie has been a member of the Association of Surgical Technologists (AST) since 2006. With over 19 years of experience in the surgical technology field, she currently serves as the director of the surgical technology and sterile processing program at South Plains College, where she has been a faculty member since 2010 and received tenure in 2019. Kristie is also an assistant professor, focusing on curriculum development, student advisement, and clinical instruction.

Kristie holds a Master of Education in Human Resources from Wayland Baptist University and a Bachelor of Applied Science with a specialization in surgical services. She is pursuing her Doctorate in Organizational Leadership from Abilene Christian University, with her dissertation focusing on "Surgical Technology Orientation in Healthcare Organizations and its Impact on Patient Safety," and is projected to graduate in 2026. In 2024, Kristie earned the prestigious Fellow of the Association of Surgical Technologists (FAST) designation in recognition of her outstanding contributions to the profession and her commitment to education and leadership.

Kristie currently serves as the AST Texas State Assembly President, following her term as a board director, which began in 2020. She has presented at various national and state-level AST conferences, where she speaks on precepting, self-leadership, communication, and time management. In addition to her academic and professional achievements, Kristie is deeply committed to serving her community through roles in her local church, including teaching Sunday School and Kids' Church, serving on the Budget and Financial Committee, and participating on the Vacation Bible School Committee.

Kristie is honored to serve on the AST Education and Professional Standards Committee (EPSC) since 2022, where she contributes to the development of educational strategies and standards for surgical technologists.

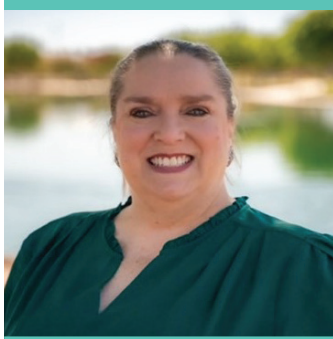


Meloney McRoberts, AAS, CST, FAST

Meloney McRoberts is an associate professor with 24 years of experience at Southern West Virginia Community & Technical College. A West Virginia native and 2001 alumnus of the college, she specializes in surgical technology and directs clinical education. In her role, she designs curriculum, guides students through clinical training, and ensures they achieve the highest standards of clinical competence. Known for her energy and optimism, Meloney inspires students to give their best effort and reach their goals. In recognition of her dedication, she received the Savas-Kostas Award for Excellence in 2019, honoring her distinguished service to the college.

For more than seven years, Meloney has been an active leader in the West Virginia AST State Assembly, serving as vice president and now president. She is passionate about advancing the profession and raising awareness of the critical role of surgical technologists. In 2021, she was honored with the Fellow of the Association of Surgical Technologists (FAST) designation at the AST national conference in Las Vegas. She also contributes nationally as a member of the AST Education and Professional Standards Committee, where she helps shape surgical technology education and curriculum standards.

Outside of her professional life, Meloney finds inspiration in her husband of 29 years, Greg, and their three children. She enjoys traveling—especially to Las Vegas—spending time with family, and cherishing every moment with her five grandchildren.



Maureen Murphy, CST, FAST

Maureen has been a surgical technologist for 12 years, graduating from GateWay Community College in Phoenix, Arizona, with her Associates of Applied Science in Surgical Technology. She has been an AST member since 2012. Shortly after graduation, she started working as a CST at Banner Ironwood Medical Center in Queen Creek, AZ. She has continued to work there as a CST part-time, while branching out to work PRN at Surgery Centers in the Phoenix area. While in school, her director encouraged her to return to teach the future CSTs when she had been out in the field for five years. In 2018, she returned to the halls of GateWay Community College again, this time as an adjunct faculty and helped out in several of the surgical technology lab classes. In August of 2021, Maureen took a full-time faculty position at GateWay Community College and teaches the surgical technology and hospital Central students about sterilization and instruments and the first

year surgical technology students about their beginning instrument handling and procedures.

Maureen has been part of the Arizona State Assembly since 2013 and has served as president, vice president, secretary and several terms as a director. She currently is finishing her first term as AZSA treasurer. As an instructor and an AZSA board member, she believes that we need to encourage our new CSTs to become “involved at the state level on the state assembly because they are the future of our profession.”

Maureen is in her second term on the Education and Professional Standards Committee. She joined the committee in July of 2022 and loved planning the Educators Conference and the student track at the AST National Conference. As part of the committee she has been involved with the CE approval process, reviewing questions for study guides for the CST exam, and reviewing the AST standards.

Maureen has recently decided to go back to school to get her RN license. She is currently enrolled in the CNA program at GateWay Community College so that she can continue in the nursing program. She would love to continue in the operating room as a circulator with the ability to still scrub and maybe even obtain her RNFA.

In her free time, she enjoys reading, playing video games, and board games with family and friends. She loves to binge watch medical shows like *Grey's Anatomy* and *ER* and pick out all the medical inaccuracies.



Tyronne Johnson, EMBA, CST, CRCST, CHL, FAST

Currently serving as the chair of the Allied Health Mental Health and Human Services Department at Kingsborough Community College, Tyronne plays a pivotal role in shaping the next generation of healthcare professionals. Tyronne has served as a program director for surgical technology and as a former sterile processing manager at Flushing Hospital for over 13 years. In these various roles, he has leveraged his extensive experience to develop and refine curricula that meet the highest standards of excellence.

Tyronne's academic journey is a testament to his commitment to personal and professional growth. He earned his Bachelor of Arts in Business Administration from Ashford University in 2013, laying the foundation for his understanding of healthcare management and administration. Building on this foundation, he pursued and earned his Executive MBA in Healthcare Administration from Baruch College in 2020, further solidifying his expertise in the field.



John Hadley, CST, FAST

John is the program director for surgical technology at Des Moines Area Community College in Des Moines, Iowa. He graduated from the Surgical Technology Program in Rochester, Minnesota in 1988 and spent 30 years working at the Mayo Clinic. John primarily worked in cardiac, vascular, and thoracic surgery. He was also a member of the heart and lung transplant team, and the liver transplant team.

In 2014, he became a faculty instructor for Des Moines Area Community College and has been the program director since 2017. He spent several years on the board of directors for the Iowa State Assembly and fulfilled two terms as president. John lives in Johnston, Iowa, and enjoys remodeling homes, adventurous travel, and all things outdoors. He is interested in fostering the growth of future CSTs and empowering the profession as we drive into the future.

John chose to volunteer for the Education and Professional Standards Committee to learn more about education in our field on a national level. He is excited to work with a committee that deeply cares about the future of our profession.

His passion is “giving back” to the field of surgical technology and providing educational opportunity for new surgical technologists.

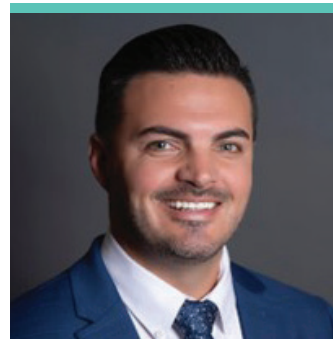


Stefanie Vaughn, BAS, AAS, CST, FAST

Stefanie Vaughn has been the program director of surgical technology at Angelina College in Lufkin, Texas, since 2016. She began her career in 2002 after earning an Associate in Applied Science in Surgical Technology from Tyler Junior College. In August 2020, she completed a Bachelor of Applied Science in Surgical Services Management from Wayland Baptist University. Currently, Stefanie is pursuing a Master of Education in Applied Digital Learning and Leadership at Lamar University.

Stefanie is actively involved in professional organizations, serving on AST's Educational Programs and Standards Committee and previously holding various roles with the AST Texas State Assembly. She has contributed to the field through her written work, as a reviewer for Surgical Instrumentation. She has also been a speaker at several AST educators and national conferences.

With a 24-year career spanning various surgical specialties, Stefanie's primary passion lies in helping others. Her discovered passion for teaching has led her to focus on shaping the future of surgical technology students and mentoring new program directors and instructors.



Jeff Walker, MS, AS, CST, FAST

Jeff Walker is the Regional Director of Operations for an orthotics and prosthetics company based in Las Vegas, Nevada. He holds a master's degree from the University of Nevada, Las Vegas, with a focus on healthcare administration. In 2009, Jeff earned his associate's degree in surgical technology from the College of Southern Nevada.

In 2023, Jeff was honored with the Fellowship of the Association of Surgical Technologists (FAST). He currently serves on AST's Educators and Professional Standards Committee and has held various leadership roles on the AST board in Nevada. Jeff is passionate about education, student development, and advancing the field of surgical technology nationwide. His commitment to healthcare and surgery was ignited by his first medical mission trip in 2003, and he has since participated in numerous mission trips across the country.

Outside of his professional life, Jeff's greatest joy comes from his family: his wife and three boys. He spends his weekends cheering them on at various sports events. In his free time, Jeff enjoys running, exploring new culinary experiences, and savoring a good whiskey.



Eboni Saurage, EdD, MS, BSHSC, ASST, CST, FAST

Eboni is a surgical technology educator with over 15 years of experience as a Certified Surgical Technologist (CST). She holds degrees in surgical technology, health science, academic administration, healthcare education and organizational leadership. She is currently an Assistant Professor of Surgical Technology and Dean of Nursing and Allied Health at Baton Rouge Community College in Baton Rouge, Louisiana.

She was awarded the Louisiana Community and Technical College System's President's Faculty Fellowship Award for Outstanding Professional Educator. She also holds the Fellow of the Association of Surgical Technologists (FAST) designation, which is awarded to individuals who have upheld the highest professional standards and traditions of the surgical technology profession and have been devoted to advancing the profession toward improving the quality of surgical patient care.

Dr. Saurage serves her profession as president of the Louisiana State Assembly of the Association of Surgical Technologists. She has previously held leadership roles as a member of the Accreditation Review Council on Education in Surgical Technology and Surgical Assisting (ARC/STSA) Board of Directors and as vice-chair of the United States Chapter of The Operat-

ing Room Global (TORG). Her passion for advancing safe patient care through both foundational and continuing education has led her to serve on numerous regional, state, and national committees dedicated to surgical technology and healthcare education. Dr. Saurage's current professional interests include reflective practice, leadership development, interprofessional education, and simulation in healthcare.



Stephanie T. Owens, PhD, CST, CRCST

Dr. Stephanie Owens is the Program Chair of the Surgical Technology Program at Franklin University, where she leads curriculum development, faculty oversight, and clinical partnerships to prepare the next generation of surgical technologists. She proudly served as a surgical technologist in the United States Navy, providing critical patient care and surgical support, including deployment to Guantanamo Bay following 9/11. During her service, she received multiple awards recognizing her excellence, leadership, and dedication to patient care. She is dually credentialed as a Certified Surgical Technologist (NBSTSA) and a Certified Registered Central Service Technician (HSPA).

Dr. Owens is leading the New Jersey Association of Surgical Technology as acting president, following her service as vice president. Nationally, Dr. Owens is honored to serve on the

Association of Surgical Technologists Education and Professional Standards Committee. As a new member, she is excited to contribute to the profession at the national level and looks forward to supporting initiatives that advance surgical technology education.

She holds a Doctor of Philosophy (PhD) in Business Administration with a specialization in Healthcare Administration from Northcentral University, a Master of Science in Management and Health Administration from New England College, a Bachelor of Business Administration in Health Services Management from Berkeley College, an Associate of Science in Surgical Technology from the Bryman School of Phoenix, and a diploma in surgical technology from the Naval School of Health Sciences.

Outside of her professional commitments, Dr. Owens is a proud mother who enjoys reading, shopping, and lifelong learning. She values finding balance between her leadership roles, her love for education, and the joy she finds in family life.



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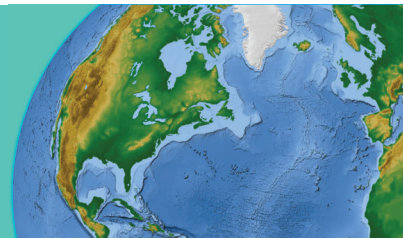
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ON A MISSION



Transformative Journeys of Service

ALISON WILSON, CST, FAST

The moment I stepped off the plane in La Romana, Dominican Republic, I knew I was about to embark on an extraordinary journey. This was my first mission trip, and while I had prepared myself for hard work and emotional rewards, I couldn't have imagined just how deeply it would impact me. Over the course of five days, our team treated nearly 300 patients and performed surgeries on 87 children, creating an experience that will stay with me forever.



A Heartwarming Start

On our first day at the clinic, the number of families who had come for care was overwhelming in the best way possible. Parents arrived with their children, all hopeful and eager for the medical attention we had traveled to provide. Their excitement was contagious—there was laughter, singing, and a sense of joy that filled the air.

Setting up the operating room and seeing the packed clinic was a humbling sight. These families had waited for our arrival, and their gratitude was palpable. It was a reminder of why we were there: to bring hope and healing to a community in need.

Challenges and Triumphs in the Operating Room

The first day of surgeries brought its own set of challenges. Due to a paperwork delay, we couldn't begin until the afternoon. What followed was an intense and exhausting day, with procedures running from 1:30-9:30 pm. Despite the long hours, our team pushed through, motivated by the knowledge that we were making a significant difference.





As the days progressed, each surgery became a testament to resilience and teamwork. The children and their families expressed such gratitude, even though the level of care we provided was something many of us might take for granted back home. The preoperative area buzzed with life—music, laughter, and even impromptu photo sessions turned a potentially daunting experience into a celebration of hope and healing.

Some children left an indelible mark on my heart. Their courage, smiles, and the joy they radiated despite their circumstances were humbling. These moments made me realize just how impactful our efforts were for this community.

The Power of Teamwork

The success of this mission trip wouldn't have been possible without our incredible team. Every member brought their unique strengths, and together, we worked seamlessly to ensure each child felt special and cared for. In the process, we not only forged bonds with the families we served but also

built lifelong friendships within our team. The shared goal of providing medical care united us in a way that words can't fully capture.

A Personal Reflection

This mission trip has left an indelible mark on my life. It opened my eyes to the immense need that exists in the world and the profound impact a group of dedicated individuals can have. I am deeply grateful to AST



for sponsoring this trip and to Healing the Children of New Jersey for organizing it. Their support made this incredible experience possible.

As I look back on those five days in La Romana, I am filled with gratitude—for the opportunity to serve, for the resilience of the children and families, and for the camaraderie of my team. This was by far one of the most rewarding experiences of my life, and it has inspired me to continue giving back to those less fortunate.

I look forward to my next mission trip and the chance to create more memories that will last a lifetime.



CRYSTAL OLADELE, CST

In October 2024, I traveled to Ghana on a medical mission trip, serving with the Ghana Healthcare Volunteers of Georgia, INC. During our stay in Ghana, the team carried out 42 surgical procedures and 260 consultations that benefited the people living in the Akyem Moseaso community in the Eastern Region of Ghana free of charge.

The journey from the United States took ten hours by direct flight and three hours by car. To accelerate and prepare the patients for our arrival, most of the patients were pre-screened in advance by other local staff members, leaving only the final evaluation to be done when we arrived at the facility.



To the team's disadvantage, the facility was new, as no other surgical team had performed any procedures, so it took some time to sort through the supplies we brought to get the rooms prepared. Being both a certified surgical technologist and a surgical first assistant student benefited my team because I had the opportunity to train the scrub nurse on sterile techniques and educate the other medical staff on infection control.

Procedures performed included gynecological surgeries such as hysterectomies, myomectomies, cystectomies as well as general surgeries which included lipomas, hydroceles, and hernia repairs. Training included prioritizing sterility preoperatively, accurate room and table setup,

hand scrubbing, correct gowning and gloving techniques, and proper surgical attire. Intraoperative topics covered proper instrument use, surgeon anticipation, and maintaining sterility. Then postoperative techniques included correctly transferring the patient and room breakdown.

As a surgical technologist, I was exposed to situations I did not experience in the United States. For instance, we had to work with minimal supplies and often reused them. Examples included the suction tube, by putting it in the sterilizer and wiping down the bovie with alcohol after each case. Additionally, there was not a wide range of sutures, so we used the ones that promoted the best healing.

The experience that stood out the most was a power outage during one of the procedures. Even though the facil-



ity had a generator, it took some time before it worked, my surgeon remained calm, and the team used what little light we had until the power came back on. That experience was an eye-opener for me.

Participating in this mission trip helped me realize what we take for granted. General personal protective equipment, like eyewear, hair nets, gloves, masks, scrub

brushes, and boot covers, began to run out by day three because of the volume of patients.

The sense of gratefulness and support by the Ghanaian community was priceless. Daily, we were greeted by local members of society, the Nananom who are the tribal chiefs, and the security forces of the village all came out and showed their gratitude and support for the services provided.

The best part of the mission was knowing that my team could help those who would have otherwise not been able to afford it and because of that, I vow to continue my service both locally and abroad.



HEATHER SPIRLIN, CST

Like many people, I struggled to choose a career path that would be both fulfilling and impactful. Having spent most of my adult life in the medical field, I needed guidance to narrow down my options based on the experience I had already gained. This time, I wanted to pursue something that truly resonated with me—something that would allow me to make a meaningful difference in others' lives. When I became a Certified Surgical Technologist (CST), I learned about opportunities to participate in medical missions around the world. That was exactly what I had been searching for: a way to not only see parts of the world most



people never do, but also to touch lives in a significant and lasting way.

My first chance to make this dream a reality came five years into my CST career, when I was invited to join a medical mission team traveling to Kenya. That experience was nothing short of life-changing and it left a lasting impression on my heart. I knew I had to do it again. In 2024, I found another opportunity through the organization Faith in Practice, which needed a surgical technologist for a mission trip to Antigua, Guatemala. This team focused on performing hernia repairs, appendectomies, and gynecological surgeries for people in surrounding communities. These procedures can dramatically improve quality of life by allowing individuals to work and live without pain or complications.

Upon arriving in Houston, Texas, to meet the rest of the mission team, I was immediately filled with excite-



ment and anticipation. One of the first conversations that stood out to me was about the incredible growth and healing the staff and community experience each year. Each day of the mission was carefully planned and organized to ensure we could provide care to as many patients as possible. With five operating rooms available, each team—consisting of a surgeon, an assistant, and a surgical technologist—was assigned a set number of procedures to complete using the supplies we had brought with us. These included specialty instruments like laparoscopic scopes, standard PPE, sutures, and mesh. Knowing the types of surgeries we would perform ahead of time helped us prepare thoroughly. Each morning began with a devotion, setting a thoughtful and compassionate tone for the day. This daily ritual was a meaningful addition to the mission, reminding us of our shared purpose and the impact we hoped to make in the surrounding community.

In addition to completing 104 surgeries during our time there, we also made space in the evenings to connect with the local culture and community. We shared meals, attended religious ceremonies, and visited an orphanage supported by the organization. This orphanage provides housing, education, and care for children with varying degrees of down syndrome. The work being done there is truly inspiring, offering these children the extra support they need to thrive. Toward the end of the trip, we gathered for a celebration dinner where each of us shared what the mission had meant to us. I was overwhelmed with emotion and gratitude—it was easier than I expected to



express how deeply this experience had touched me. I'm already in contact with the team to plan my next mission trip, and I can't wait to go again.

While I wish there wasn't such a great need for medical missions like this, I feel incredibly thankful and blessed to have had the opportunity to serve. The happiness, hope, and healing I witnessed have left a lasting imprint on my soul. This work has opened my eyes to the many things we often take for granted in more developed parts of the world.

JOLIANNE MOHLER, CST, CSFA

In July 2024, I served on my first medical mission trip. This was a total knee mission, and it was one of the greatest things I have ever done in my life. In all honesty, I don't think I have worked that hard in a long time, but it was worth



it in so many ways. When you live in a country that has accessible healthcare, it is easy to get into the routine of things and forget the human aspect of it. It's easy to feel like you're doing just another total joint, forgetting what the surgery will mean for the patient. I learned so much about my work, myself, and my purpose during my first mission trip.

We arrived in Honduras on a Saturday. It was a big travel day that followed a massive Microsoft shutdown that delayed and cancelled flights around the world. Luckily, this trip was not impacted by the shutdown, and we were able to proceed with the planned surgery schedule for the week. We were greeted by our hosts at the airport and traveled as a group to our residence for the week. The accommodations exceeded all my expectations.

On Sunday, we went to the surgery center to take inventory and process our surgical instruments and supplies for the week so we could get oriented to the site. Local staff helped us to process the incoming supplies and instruments and select our cases for the next day. The staff were so valuable to us during this process because they know their hospital inside and out, and they would be the team that processed the instruments during the week.



Surgery began on Monday morning. The patients were arriving very early, ready for the surgery that would help them regain their mobility. They were all very grateful for the access to surgery. I learned during the week that the number of total knees done in the country per year is 30-50. The process for them includes paying for their implants prior to scheduling their surgery. The cost for the implants, around \$3000, far exceeds an individual's annual income. This means they need to rely on family, friends, and their community to find the means to help raise money to cover the cost of the surgery. The patients were very resilient and so appreciative of the gift they were about to receive. The gratitude was palpable! You don't need an interpreter to translate that.

During our week, we did 50 total knees in four days with three surgeons, in three ORs. The surgical teams were well-oiled machines that worked so well together and overcame challenges by collaborating and problem solving. I saw ingenuity and flexibility in a way that I seldom see here in the states. Though we did not have the "comforts of home" or "the usual" items from the preference card, patient outcomes were never compromised.

This being my first trip, I went alone intentionally. I wanted my first mission experience to be mine, uninfluenced by anyone else. Though I went alone, I did not feel alone or left out. I joined this team as a stranger. I did not know anyone who was going until I met them at the airport for a connecting flight. They embraced me and made me feel very welcome from the moment I met them. I want to thank Ortho Development Corporation, Dr. Dan Whiting, Dr. Manish Patel, and Dr. Anthony

Carter, my circulator Caylee, and the entire July 2024 One World Surgery team for an amazing mission trip. It may have been my first, but it won't be my last.

TATYANA SHADKOV, CST

It was a regular day in the main OR on September 6, 2023, when I noticed a handwritten note on the exit door from the core. A "short notice" called out for surgical technologists and RNs to join medical missions in Guatemala organized by Health Talent International. The services would include general surgery and GYN. I immediately felt the call to join this medical mission trip. This was my first time going as a surgical technologist to serve in my professional role. The desire to explore new capabilities and gain experience was greater than the fear of flying overseas and having enough resources to pay for my airfare.

Arrival to Guatemala was safe; however, there were some unforeseen demonstrations over the latest presidential elections. No violence was reported, but the citizens blocked some major roads so commerce was held up. Our team leaders told us





there would be delays arriving at the Clinica Ezell. To avoid the peak of the demonstrations, our team headed out on a charter bus at 2:00 am. We were able to pass the control point and observed the blockades with armed men along the road. Thankfully, we arrived safely at our destination and did not get turned around by the demonstrators.

Upon arrival, I immediately went and toured the three operating rooms; I studied the supplies and the location of all my essential materials. It was important that I knew what I would have available for the general and GYN surgeries. Our team began operating the same day; I quickly assembled my operating table and was ready for the first case. The instrumentation did not differ from our usual string. However, we had to accommodate the draping of the patient because there was no under buttock or lithotomy drape available. We had to make do with leggings and a general fenestrated abdominal drape, using a

large mayo drape for the under buttock for the GYN surgeries.

Creativity was essential here, so I stretched the green light covers from the pack to cover the light handles. The sterile suction tubing connected to the small canister that attached to the unsterile tub-



ing reaching the "wall suction system". I had never seen a wall suction and was curious how much suction power we would be getting compared to our tree suction or Neptune. It was much weaker, but it was enough to keep our surgeon going. All the suture, mesh, and packing were picked by the surgeon prior to the case to ensure availability.

The frequent flies that also visited the OR were not a surprise; I was told that the circulator would take care of it with a fly zapper. It made me very nervous when the fly attempted to land in my sterile field, but instead it landed on a GYN's head. It was quite something trying to keep the flies off the field while the surgery continued.

Overall, this trip was a valuable experience, and I am feeling very appreciative of this opportunity to serve. I would love to go back in the future, God willing. The most beautiful thing that I have experienced is rounding with the surgeons on our patients. Their faces, full of smiles and thankfulness, were the highlight of this trip. My advice to those who have never been on a medical mission is to consider going. This kind of experience is not only humbling and rewarding to the soul but also essential and educational.

TERI JUNG, CST, CSFA, FAST

In January, I traveled to La Entrada de Copán, Honduras, with Vision Health International (VHI) to assist with eye surgeries at the Manos Amigas Clinic. The English translation of Manos Amigas is "Helping Hands." The global VHI team consisted of eight members and was supported by the amazing Honduran team that runs the clinic year-round. Of the eight member VHI team, two were from Illinois, two from Wisconsin, one from Colo-



rado, one from Montana, one from Canada, and one from Venezuela. The team consisted of three ophthalmologists, two registered nurses, two surgical technologists, and one paramedic.

The need for high-quality basic medical care in Honduras is great. Specialty care is even harder to come by. Many patients were waiting outside the gate of the clinic compound every day before we arrived in hopes that they might be selected to receive care. One patient said that he must ride the bus for seven hours each way to get to the clinic every time that he has an appointment.

The facility was quite modern by Honduran standards.



Most of the equipment had been donated by VHI, and we were lucky to have air conditioning in both the clinic and at the Hotel San Carlos. The weather was mostly in the 80s-90s with high humidity and a few days of rain.

I'd like to tell you a story about one of the patients. The patient came early to the clinic and was prepped for cataract surgery. When we were ready for him, he came into the operating room and decided that he did not want to go through with his surgery. We took him back to the preop area where he consulted with his wife and they prayed together. He ultimately decided that he would go through with the surgery. The translator told us afterward about the



conversation that the patient had with his wife. Apparently, they have 10 children and the youngest is only three years old. His wife told him that if he could not see well enough to work to support the family, that she would have to find a job and that he could stay home and manage the household. So, I don't know if it was divine intervention or his wife's words that made him change his mind – but in either case, his vision has been restored!

The VHI team performed a total of 108 ophthalmic procedures including seventy cataract surgeries, five trabeculectomies, eleven pterygium removals, and twenty-two YAG laser procedures. The patients and clinic staff were very appreciative of the VHI team's efforts. Some of the patients would bring treats like homemade cookies or cold water bottles.

In closing, I would like to quote the inscription that was on a gift of Honduran coffee, presented to each team member by Delmy, Director of the Manos Amigas Clinic.

"Manos Amigas Clinic wants to thank you for changing the lives of many and giving each patient the opportunity to recover their sight. Thank you for your time and for putting your skills to help others. You are a blessing in this world. Sight is definitely one of the greatest gifts."

Even though eye surgery is not my favorite specialty, the experience with the VHI team in Honduras was amazing! I would encourage you to find a volunteer opportunity that fits your skill set and donate your time and talents to a medical mission.



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- CSTs Many Lifesaving Roles
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- AST Position Statement on Minimum Education for Surgical Technologists
- AST Position Statement on Accreditation, Certification, Official Title of the Profession, and OJT Training
- ACS Statement Supporting Surgical Technology Accredited Education and the CST
- AORN Job Description Supporting Surgical Technology Accredited Education and the CST
- AST Encourages Healthcare Facility Leaders to Support Local, Accredited Surgical Technology Educational Programs
- AST Recommendations for CSTs, Program Directors, and State Assemblies when Addressing OTH Training with a Healthcare Facility
- Message to Surgical Technology Program Directors Regarding Alternative Certification Credentials from the AST, ARC/STSA, and NBSTSA
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Association of Surgical Technologists

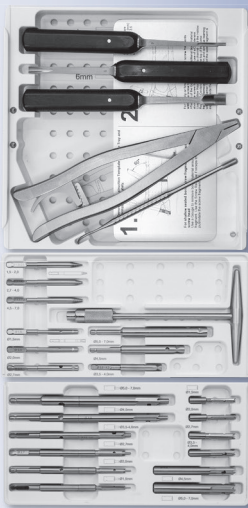
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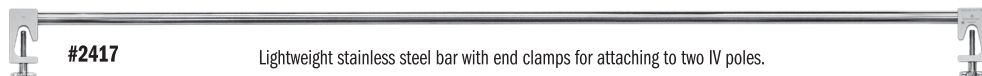
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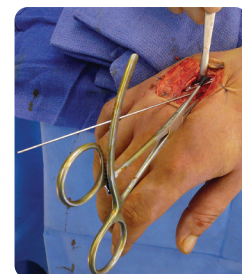
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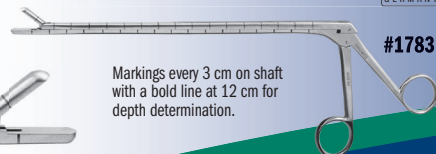
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Helen Octavia Dickens, MD: Quiet Activist and Advocate of the Pap Smear

AST Staff

MEDICAL MARVELS

I didn't see a barrier to becoming a doctor. It never occurred to me that there were barriers. There is a need for change in American medical education so that students become aware of the cultural and religious aspects of the community.”¹

Dr. Dickens conducted her work in an energetically quiet manner to establish the level of treatment that women deserved. In her era of medicine dominated by males as well as dealing with constant racism and sexism, her approach reflected those of other women physicians who subtly practiced reproductive health as activism.² Jacqueline Antonovich, a historian of medicine and gender at Muhlenberg College, Allentown, Pennsylvania, states, “Women just sort of did the work but weren't really loud about it. The best way to be political was to just do the work.”²

Regardless of her family's economic struggles as she was growing up and gender and racial challenges, she never backed down from achieving her goals of completing medical training and succeeding as a physician. She was a pioneer in cancer prevention, family planning, and teen sexual health education taking her activism into the economically disadvantaged communities of African Americans that had an impact on creating a better health system for women across the nation. Her life's work also included advocating for an increasing the number of underrepresented populations to be accepted into medical school.

Early Education and Medical School

Dr. Dickens' father, Charles Warren Dickens, who adopted his name from the well-known English novelist that he had met in person, was a former slave in Tennessee who became a free citizen at the age of nine and moved to Ohio shortly after the end of the Civil War.^{2,3} He taught himself to read after becoming a free citizen by asking people on the street the meaning of words to include reading law. However, because of the racism of that era, he was limited to working as a janitor.^{1,2} Her mother was employed as a domestic servant.¹ Charles died when Dr. Dickens was eight years old from an infection result-



Helen Octavia Dickens, MD
(February 21, 1909 – December 2, 2001)

ing from a tooth extraction – antibiotics had not yet been invented.⁴ This event, as well as both parents motivating Dr. Dickens and her brother to better their prospects in life through education, impelled her to enter medicine.

After attending white dominated primary and secondary schools, she entered Crane Junior College, now Malcolm X College, in Chicago, Illinois, to complete pre-medical courses. She would purposely sit in the front row during courses for two reasons – she was a dedicated student, and it was a deliberate move related to attending a

school that was primarily white students. “If other students wanted a good seat they had to sit beside me. If they didn’t, it was not my concern because I could clearly see the professor and the blackboard as I was right up there. This way I didn’t have to look at them or the gestures made that were directed against me or toward me,” she said during an interview.^{2,4}

After graduating from Crane, she began applying for entry into medical schools who consistently turned her down because she was a woman, African American, or both. Eventually the University of Illinois School of Medicine accepted her and she received a state scholarship to fund her education.¹ In 1934, she graduated along with two other women in a class of 175 and was the only African American in the class.^{1,2} She was accepted by Provident Hospital and Training School, the first African American-managed hospital located on Chicago’s south side, now called Provident Hospital of Cook County, to complete a two-year residency in obstetrics.³

The Move to Philadelphia

After residency, Dr. Dickens was faced with achieving the goal of practicing medicine. Hospitals with Caucasian employees would not hire her and hospitals that served the African American community would only hire male physicians. However, she read a letter that was posted on a bulletin board from Virginia Alexander, MD, a young African American female physician, seeking other women physicians to join her practice in Philadelphia.⁴ Dr. Dickens was accepted by Dr. Alexander, and she moved to Philadelphia in 1935 to work at the Aspiranto Health Home.⁴ It was a six-bed hospital and clinic located in Dr. Alexander’s three-story row house in North Philadelphia.⁴ The living room was the waiting room and the dining room had been converted into a treatment room.⁴ Dr. Dickens moved in with Dr. Alexander, whose father also lived in the house.² The facility served the city’s low-income African American community who came to the clinic for emergency care, family medicine care, obstetric and gynecologic care, parenting and sexual health classes. Both Drs. made house calls and performed home deliveries. “You were going into the homes...taking responsibility for care of people. It was very exciting. You were going in the middle of the night, and you were going into all kinds of communities alone.”¹ One well-known situation involved Dr. Dickens going to the home of a woman in labor and she had to move the bed to the window for light because there was no electricity.^{1,2}

Dr. Alexander charged the fee of \$3.00 for each patient or family, no matter what the size of the family.² If the patient couldn’t pay, they still received care. After Dr. Dick-

ens’ first year at Aspiranto, she was left in charge when Dr. Alexander went to work at Yale University’s School of Public Health.⁴ For seven years, starting at the age of 27, she was in charge of the clinic and cared for Dr. Alexander’s father.² Simultaneously, she worked on the obstetric staff at Frederick Douglass Memorial Hospital and Training School and the pediatrics staff at Mercy Hospital, Philadelphia’s two African American Hospitals. Frederick Douglass Memorial Hospital opened in 1895 serving as Philadelphia’s first hospital for African Americans and only the second one in the U.S. for that purpose. Mercy Hospital opened in 1907 as the second hospital in Philadelphia serving African Americans. The two hospitals merged in 1948 to become the Mercy-Douglass Hospital but closed in 1973.

Pap Smear Test Activist

In 1941, Dr. Dickens was accepted into the University of Pennsylvania Graduate School of Medicine and became the school’s first African American graduate to earn the Master of Medical Science Degree. She was turned down by Harlem Hospital, New York City, for residency and therefore returned to Provident Hospital in Chicago. Eventually Harlem Hospital accepted her for a three year residency. While at the hospital she was exposed to treating women for complications related to illegal abortions marking the point in her life where she resolved to work towards improving the medical care for all women.

After residency, Dr. Dickens returned to Philadelphia where, in 1945, she became the city’s first African American woman physician to receive board certification from the American Board of Obstetrics and Gynecology.³ She started a practice out of her home as well as was the first woman in charge of the Department of Obstetrics at Mercy Hospital and was a staff member at the Frederick Douglass Memorial Hospital. In 1948, she became the director of Ob/Gyn of the merged Mercy-Douglass Hospital where she established the Ob/Gyn residency program for African American medical students. Never one to slow down, Dr. Dickens taught at the Women’s Medical College of Pennsylvania, founded in 1850 as the world’s first medical school for women, coeducational since 1970, that underwent name changes starting with Medical College of Pennsylvania and currently the Drexel University College of Medicine. She also served on the executive board of the Planned Parenthood Association of Philadelphia. In 1950, she became the first African American fellow of the American College of Surgeons.

During this period of time is when Dr. Dickens made significant strides in cancer prevention for women, particularly

for the African American community. She facilitated a joint effort of the American Cancer Society and National Institutes of Health in opening a cancer clinic in Mercy-Douglass Hospital. She used this opportunity to collect data regarding the frequency of cervical cancer among African American women and shared her findings to try to change national misconceptions about cancer rates that contributed to gaining additional funding from the National Institutes of Health.²

One of her greatest achievements was advocating for and getting many African American women to take a new test called the Papanicolaou smear test or Pap test that was first offered starting in 1941. However, she had to work at addressing the reluctance of African American woman to undergo pelvic exams and Pap smears, who were rightfully afraid of and mistrusted the medical profession because of the years of experimentation and forced sterilization that were performed on African American women slaves as well as after the Civil War.^{2,4} She made the decision to bring the test to the community by establishing clinics and health workshops in African American churches. Additionally, she provided free pelvic exams and Pap tests out of an American Cancer Society van in church parking lots.⁴ As a board member of the American Cancer Society, she urged the organization to publish pamphlets and include in their films African American women safely undergoing an exam and Pap testing.² She was influential in communicating the use of the Pap test to physicians across Pennsylvania. By 1965, she had trained more than 200 African American physicians how to perform and interpret the Pap test.² Her efforts, along with other physicians, contributed to reducing cervical cancer deaths in African American women by a third of what it had been in the 1930s.²

Thirty More Years at the University of Pennsylvania

In 1965, Dr. Dickens became the first African American faculty member in the Department of Ob/Gyn after the Women's Medical College was acquired by the University of Pennsylvania. She progressed from faculty instructor to full professor and then associate dean, known for her mentorship of medical students and residents, ensuring they knew the importance of culture when treating patients as well as age-related issues. In 1967, she established the Teen Clinic, one of the first such clinics in the country, at the university that provided individual counseling, group therapy, contraceptive education, educational classes, and prenatal care.^{1,3,4} It was a multidisciplinary effort that included connecting a pregnant woman with a cohort of peers, a social worker, a family planning counselor, and a "male outreach worker" who encouraged

fathers and husbands to be involved.^{1,2} The clinic offered free contraceptives and Dr. Dickens would personally talk to the young women encouraging them to complete their education and work toward their employment goals. By 1970, 40 out of 50 teenage women that she had counseled and tracked were using contraceptives.^{1,2} Local schools and health clinics picked up on her efforts to start their own health programs and work towards lowering the number of teens becoming pregnant or acquiring sexually transmitted infections.

In 1969, the medical school appointed Dr. Dickens as the Associate Dean of Minority Affairs, later retitled to Association Dean for Minority Admissions.⁴ She worked at recruiting African American, American Indian, and Hispanic students who were identified at the time as underrepresented minorities by the American Association of Medical Colleges. During her time in this position, the enrollment of minority medical students at the university increased within five years from three to 64 minority students.² The University of Pennsylvania appointed her as a professor emeritus in 1995 and named a clinic in her honor – the Helen O. Dickens Center for Women's Health.³ However, even upon retirement from academics, she continued to care for patients until the age of 85.

Legacy

Dr. Dickens' legacy is one of making a significant contribution to and impact upon improving health care for women, with an emphasis on the African American community. Her advocacy for the Pap test for cervical cancer has been pointed out as having saved many women's lives. Additionally, her ground-breaking research into teen pregnancy and sexual health issues has resulted in long-term strategies focused on decreasing teen pregnancy and sexually transmitted infections. Her research, outreach efforts, and care of patients helped to educate and empower women to take control of their health and to make decisions for themselves to be able to lead a healthier life.

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Arm Shape May Cause Inaccurate Blood Pressure Readings

OF INTEREST IN THE MEDICAL ARENA

Blood pressure (BP) measurement has been a foundational patient assessment tool in both clinical care and during surgical procedures. It is essential in diagnosing patients with hypertension as well as guiding treatment decisions for surgical patients whose BP is decreasing. Therefore, the accuracy of readings is critical where measurement errors could lead to misdiagnosis and incorrect treatment decisions.

The first sphygmomanometer was invented in 1881 by Samuel Siegfried Karl Ritter von Basch.¹ In 1905, modern BP measurement was developed by Nikolai Korotkoff, MD, who discovered the difference between systolic and diastolic blood pressures.¹ The first commercially automated BP measuring device (ABPMD), the Device for Indirect Non-invasive Automatic Mean Arterial Pressure (DINAMAP) 825, became available in 1976 and remains the standard.² However, measurement accuracy has been a focus of studies. As one study pointed out, the consequence of a 5-mm Hg error in BP measurement could lead to incorrectly classifying hypertension in 84 million people worldwide.³ Additionally, the implications of this type of error could be significant in the operating room.

Studies have shown ABPMDs may be less accurate in females than males with readings lower in women than men.^{4,5} This could be a contributor to underdiagnosing females with a cardiovascular risk leading to undertreatment. Anatomical differences could be one indicator that may partly explain the inaccuracy. Individuals with a significant difference between the circumferences of the proximal and distal section of the upper arm are at an increased risk for incorrect BP reading as compared to those that have an even shape to the upper arm. Therefore, women are vulnerable to inadequate fit with the cylindrical cuffs.

There is a lack of studies comparing BP readings between ABPMDs and manual cuffs and the results vary

by sex.^{4,5} The National Center for Health Statistics, Division of Health and Nutrition Examination Surveys, Centers for Disease Control and Prevention, has been conducting health surveys since the early 1960s called the National Health and Nutrition Examination Surveys (NHANES) and have been conducted on an annual basis since 1999.⁶ The 2017-2018 study involved 3,735 participants, 49% women with an average age of 45 years.⁶ The study showed that ABPMD readings were lower than manual readings. Additionally, even lower readings occurred in women as the cuff size was increased.⁶ In males, the misreading only occurred with use of extra-large cuffs. Differences in the readings were connected to level of adiposity, arm size, and body size, particularly when extra-large cuffs were used.⁶ The clinical implication of the inaccurate ABPMD with large cuffs could lead to errors in clinical decisions and treatment and further large studies need to be completed.

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High Tibial Osteotomy May Slow Progression of Knee Osteoarthritis in Patients with Varus Alignment

High tibial osteotomy (HTO) is shown to slow the progression of articular cartilage damage in individuals with varus alignment (bowlegged) and medial compartment knee osteoarthritis (OA) compared to only utilizing nonsurgical treatment, according to a new study. Patients who had the HTO procedure reported greater knee function and less pain as compared to patients who did not undergo the procedure. The study was published September 25, 2025, in *Annals of Internal Medicine*.

Medial opening wedge HTO is a limb realignment procedure with the goal of preserving the knee joint's anatomical structure as well as to improve the patient's long-term outcome by changing the ambulatory loads on the knee in patients who have OA and varus alignment. The goal of the study was to evaluate the effectiveness of the HTO procedure.

The single-center study took place at the Fowler Kennedy Sport Medicine Clinic in London, Ontario, Canada, and was led by Trevor Birmingham, PhD, a professor and Canada Research Chair in Musculoskeletal Rehabilitation in the Faculty of Health Sciences at Western University. 145 adult patients with varus alignment and OA that primarily affected the medial tibiofemoral compartment confirmed by radiographic studies were involved in the study, however, 124 of those patients completed the study through the two-year follow-up. The primary outcome measured by the research team was changes in the medial tibiofemoral articular cartilage thickness from the baseline measurement to two-year follow-up as well as change in the total Knee Injury and Osteoarthritis Outcome Score (KOOS).

Patients were assigned to either undergo HTO and nonsurgical management or nonsurgical management alone (control group). All participants underwent a three-month supervised exercise program broken up into one-hour in-person training sessions and three independent home exercises each week. 59 patients, 30 HTO and 29 control, were in the randomized arm and 65 patients, 36 HTO and 29 control, were in the preference arm*. The majority of the patients were in their 50s and male. The average duration of knee symptoms was seven years, and the body mass index was 30 – 31.

The results showed that HTO with nonsurgical management slowed the progression of knee joint OA including favorable KOOS outcomes as compared to the nonsurgical management only participants who experienced less

favorable results. The HTO patients had less deterioration of medial tibiofemoral articular cartilage and greater change in total KOOS than the nonsurgical management only patients.

The research team concluded the “results support use of medial opening wedge HTO to slow progression of structural joint damage and improve clinical outcomes among patients with medial compartment knee osteoarthritis and varus alignment.”

Funding for the research was provided by the Canadian Institutes of Health Research, Arthritis Society Canada, and Bernard and Norton Wolf Family Foundation.

***Preference arm:** Participants in a research study who choose their own treatment based on preference, rather than being randomly assigned.

Reference

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‘Ghost Organs’ May Contribute to Addressing Donor Organ Shortage

In 2023, 13 people died each day in the U.S. waiting for an organ transplant.^{1,2} Even though that number has decreased from 2021, 16 per day, every eight minutes another person is added to the transplant wait list accounting for more than 100,000 people on the wait list.^{1,2} The future of increasing the number of needed organs may rely on “ghost organs.”

Liver Ghost Organs

Approximately 86,000 patients are hospitalized in the U.S. each year with acute liver failure (ALF). ALF indicates the liver is rapidly losing function that can occur in a few days or weeks. Common causes include excessive alcohol use leading to acute alcoholic hepatitis, hepatitis viruses, and drugs such as acetaminophen.³ ALF is a medical emergency that requires the patient to be immediately hospitalized for aggressive clinical treatment. The estimated outcomes for patients are 45% experiencing spontaneous recovery, 30% death without transplantation, and 25% with liver transplantation.⁴ The last two figures could possibly be lowered with the advancements being made with liver ghost organs.

Ghost organs refer to a bioengineering process where the native cells of an organ are removed producing the transparent protein scaffold, the extracellular matrix

(ECM). The scaffold is recellularized using either new cells or stem cells from the patient or donor cells to create the organ or tissue. Recent accomplishments by bioengineering companies are changing this process from fiction to reality. On June 24, 2025, Miromatrix Medical Inc., a subsidiary of United Therapeutics Corporation, announced the world's first patient treated in a clinical study of a bioengineered external liver assist product called miroliverELAP®.³ This is a first of a kind human clinical trial of a bioengineered organ.

The miroliverELAP® system consists of a decellularized porcine liver scaffold that resides outside the human body and is connected to an external blood circuit that mimics the functions of a healthy liver to provide temporary support in patients with ALF.³ The procedure utilizes perfusion decellularization and recellularization in which the porcine cells are removed to leave the protein structure, or scaffold, in place. The blood supply of the organ is used to perfuse the organ with a series of mild detergents and enzymes that lyses all the cells including destroying the DNA so as to remove any chance of an immune rejection being elicited. The use of the blood supply assists in the cellular debris being washed out.³ The bioengineered porcine liver is manufactured by recellularizing it with human endothelial and liver cells obtained from donor human livers.³ Miromatrix Medical works with organ procurement organizations to obtain human livers that cannot be transplanted.³

The procedure was performed at Intermountain Medical Center in Murray, Utah.³ The team was led by Christopher J. Danford, MD, a transplant hepatologist and gastroenterologist. The patient who underwent the procedure was ineli-

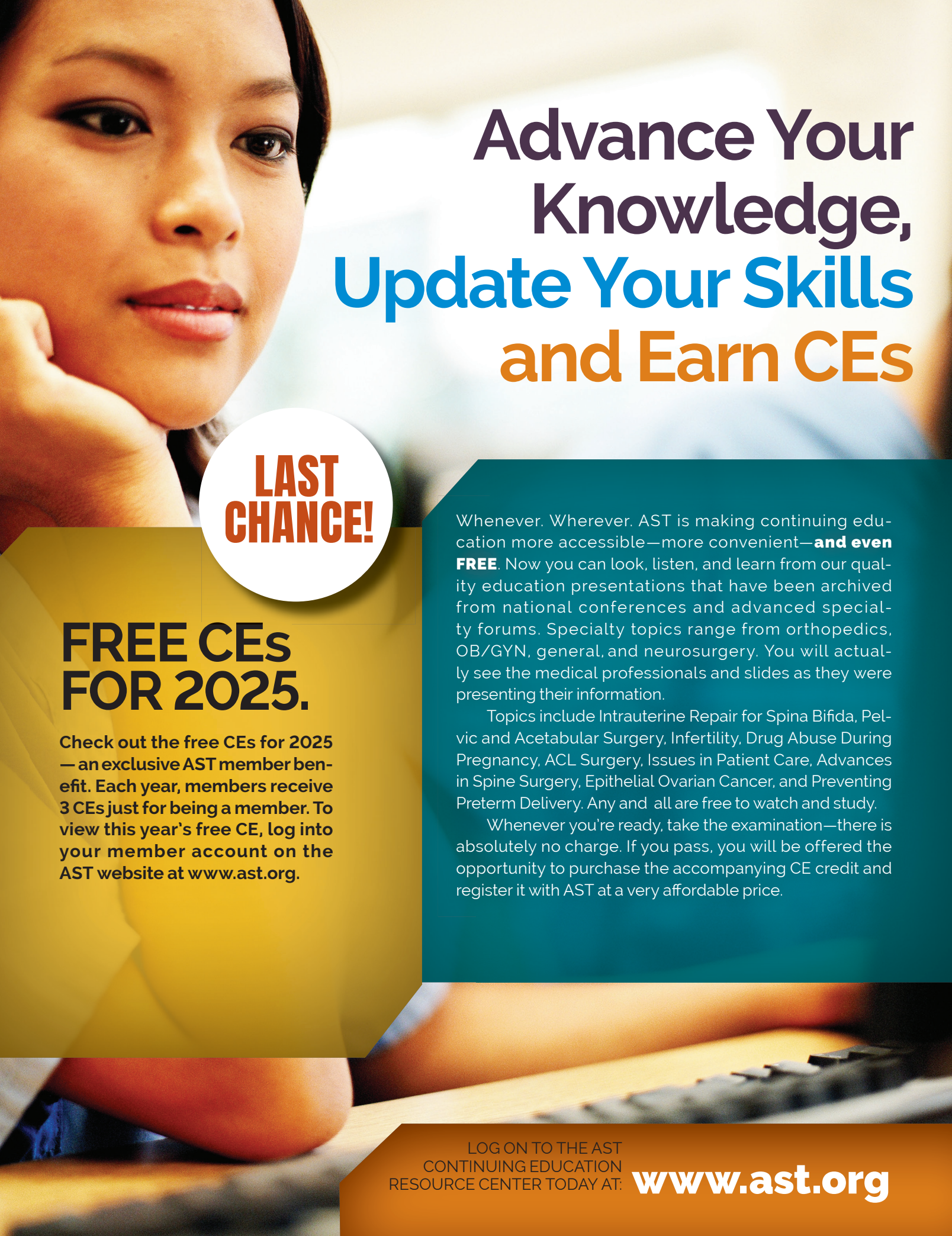
gible for a liver transplant and was suffering from ALF.³ The outcome measure was survival of the patient over a 48-hour period in which the external liver continued to be perfused similar to dialysis.⁵ No complications occurred, and the liver performed the functions of a normal healthy liver.

Miromatrix Medical initiated the phase 1 trial of miroliverELAP® in October 2024. The trial is still open to accept patients at eight facilities – Northwestern Memorial Hospital (IL), University of Michigan Medical School, University of Minnesota Medical School, Mayo Clinic (MN), Mt. Sinai Recanati/Miller Transplantation Institute, Cleveland Clinic Foundation, Intermountain Healthcare (UT), Virginia Commonwealth University Medical Center.⁵ The trial was initially only eligible for people with ALF, but since accepts those with severe acute alcohol-associated hepatitis or acute on chronic liver failure.

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FLORIDA STATE ASSEMBLY

Program Type: Workshop
Date: February 28, 2026
Title: Spring into 2026!
Location: St. Joseph's Hospital, 3001 W Dr Martin Luther King Jr Blvd, Tampa, FL 33607
Contact: Stephanie Hurst, flsastateassembly@gmail.com
CE Credits: 8 Live Planned

GEORGIA STATE ASSEMBLY

Program Type: Annual Meeting/Elections
Date: March 14, 2026
Title: Spring Forward: Advancing Surgical Technology Education
Registration: ast-gasa.com/spring-2026-meeting
Location: Chattahoochee Technical College - North Metro Campus, 5198 Ross Road SE, Acworth, GA 30102
Contact: Erin Baggett, PO Box 109, Auburn, GA 30011, 678-226-6943, gasawebmaster@gmail.com
CE Credits: 7 Live Planned

INDIANA STATE ASSEMBLY

Program Type: Workshop
Date: March 7, 2026
Title: ISA Spring Conference 2026
Registration: indianastateassembly.org/events
Location: Ivy Tech Valparaiso, 3100 Ivy Tech Dr, Valparaiso, IN 46383
Contact: Sara Velligan, 219-808-8240, svelligan@hotmail.com
CE Credits: 6 Live Planned

IOWA STATE ASSEMBLY

Program Type: Workshop
Date: April 18, 2026
Title: IASA Spring Workshop
Registration: ia.ast.org
Location: WinnMed - formerly Winneshiek Medical Center, 901 Montgomery St, Decorah, IA 52101
Contact: Tim Danico, 319-540-6008, timothy-danico@uiowa.edu
CE Credits: 8 Live Planned

NEW MEXICO STATE ASSEMBLY

Program Type: Annual Meeting/Elections
Date: February 28, 2026
Title: Spring into Wellness
Location: Domenici Center for Health Sciences Education, 1001 Stanford Dr NE, Room 3760, Albuquerque, NM 87107
Contact: Maggie Sassman, PO Box 66496, Albuquerque, NM 87193, 505-450-1457, newmexast@gmail.com
CE Credits: 5 Live Planned

OKLAHOMA STATE ASSEMBLY

Program Type: Annual Meeting/Elections
Date: March 28, 2026
Title: Fall Conference & Business Meeting 2026
Registration: OklahomaStateAssemblyofSurgicalTechnologists.eventbrite.com

Location: Canadian Valley Technology Center - Cowan Campus, 1701 S Czech Hall Road, Yukon, OK 73099
Contact: Rochelle Lewis, 918-772-8002, rochelle-lewis@cherokee.org
CE Credits: 6 Live Planned

TENNESSEE STATE ASSEMBLY

Program Type: Workshop Cruise
Date: October 2-5, 2026
Title: CE's at SEA
Location: Carnival Glory, 1492 Charles M. Rowland Dr, Cape Canaveral, FL 32920
Contact: Ellen Wood, 1344 Copperstone Lane, Knoxville, TN 37922, 865-283-5901, ellenwoodtnast@gmail.com
CE Credits: 6 Live Planned

TEXAS STATE ASSEMBLY

Program Type: Workshop
Date: January 24, 2026
Title: Port Arthur Workshop
Location: Lamar State College, 1800 Lake Shore Dr, Port Arthur, TX 77640
Contact: Kristie Cole, 806-787-8298, kcole@southplainscollege.edu
CE Credits: 8 Live Planned

Program Type: Annual Meeting/Elections
Date: March 7-8, 2026
Title: Best Little Workshop in Texas
Registration: texasstateassembly.org
Location: Radisson Hotel North Fort Worth-Fossil Creek, 2540 Meacham Blvd, Fort Worth, TX 76106
Contact: Kristie Cole, 806-787-8298, kcole@southplainscollege.edu
CE Credits: 15 Live Planned

STATE ASSEMBLY ANNUAL BUSINESS MEETINGS

Members interested in the election of officers & the business issues of their state assembly should ensure their attendance at the following meetings.

GEORGIA

Acworth
March 14, 2026
Annual Meeting
2026 BOD Elections
& 2026 Delegate
Elections

NEW MEXICO

Albuquerque
February 28, 2026
Annual Meeting
2026 BOD Elections
& 2026 Delegate Elections

OKLAHOMA

Yukon
March 28, 2026
Annual Meeting
2026 BOD Elections
& 2026 Delegate
Elections

TEXAS

Fort Worth
March 7-8, 2026
Annual Meeting
2026 BOD Elections
& 2026 Delegate Elections

Program Approvals: Submit the State Assembly Program Date Request Form A1 no less than 120 days prior to the date(s) of the program for AST approval. The form must be received prior to the first (1st) of the current month for program publication in the next month of the AST monthly journal, The Surgical Technologist. The Application for State Assembly CE Program Approval A2 must be received at least thirty (30) days prior to the date(s) of the program for continuing education credit approval. An application submitted post-program will not be accepted; no program is granted approval retroactively.

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