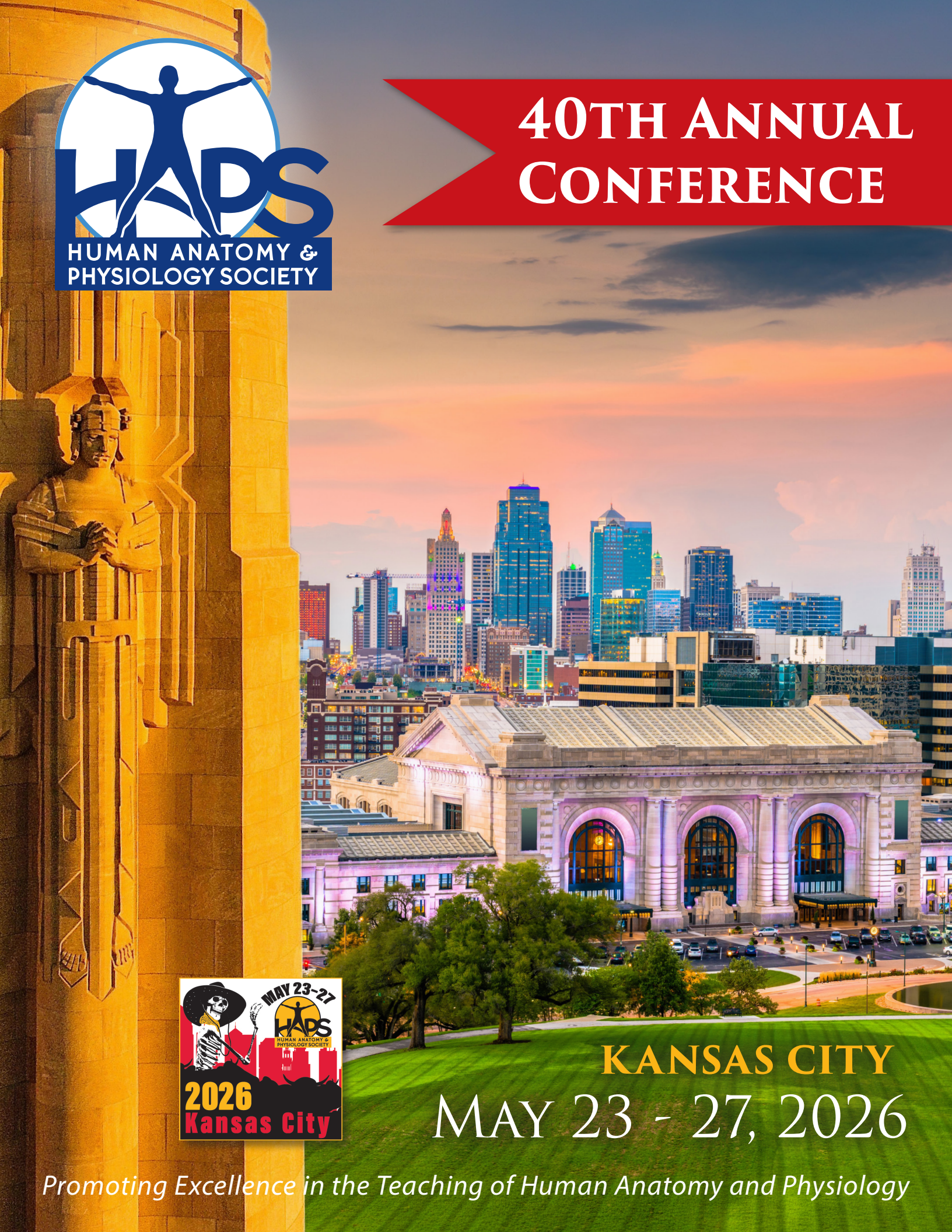
HUMAN ANATOMY & PHYSIOLOGY SOCIETY

40TH ANNUAL CONFERENCE



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Human Anatomy and Physiology Society Page and Group

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Human Anatomy and Physiology Society Page and Group

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Share your conference experience by using the hashtag below!

#Haps2026

Welcome to Kansas City!

This conference marks my second year as HAPS Executive Director, though it's my 10th year supporting HAPS. I'm excited to join you all for another four days of enjoyable, educational, and inspiring learning and community engagement. For my first time attendees – Welcome, we're so happy you're here! Second timers, we're so glad you came back! Long-timers, we appreciate your long-time support! This gathering of HAPSters from across the globe offers a wonderful opportunity for us to connect with faculty, colleagues, and friends. It's also a chance to explore the exceptional programs and products from our partner vendors who support the vital work we do in our classrooms.

We have a fantastic array of opportunities organized by our Conference Planning Committee and its Chair, Todd Gordon. A big thank you to the committee for their vision and meticulous planning of the Annual Conference. The first two days of the conference will take place at the Sheraton Crown Center (**in Missouri**) and will feature seven update speakers including a exciting panel consisting of HAPS Past Presidents. Additionally, make it a point to attend the HAPS committee meeting extravaganza at 3:15 PM on Sunday afternoon. This year we have moved the committee meetings from lunch on the first day of the workshops to the Update Seminars to encourage more facetime with folks. This is your chance to meet the chairs and existing members of the committee and get involved!

During breaks between speakers, you'll have the chance to explore over 98 poster presentations and connect with 35 dedicated exhibitors eager to engage with our members. This is a great opportunity to learn about the latest products and tools that can support your work. In addition, please be sure to check out the Membership Experience Booth at the back of the exhibit hall. This is your chance to meet members of the HAPS Leadership, Committee & Program Chairs, and win fun prizes! Don't forget to also stop by the HAPS Fundraising Booth and Silent Auction tables. There are always great items up for grabs there!

Finally, I would like to point out a few things that may get lost in the busy schedule. Please consider joining the HAPS Leadership and our members for the Annual General Membership Meeting, open to all members on Monday Morning. We'll also celebrate Award Winners at this event, so expect plenty of positive energy!

For the workshop portion of the conference, we'll be transitioning to Kansas City Community College **in Kansas**! With almost 90 workshops spanning two days, you'll have plenty of opportunities to participate in small, interactive sessions that will reignite your passion for teaching Anatomy & Physiology.

To assist with your planning, the 2026 App is once again available for your use. It's an excellent way to connect with fellow attendees, access important information, schedules, and contacts. Be sure to download it to your smartphone or tablet and explore its features! The full conference schedule is in the app, and you can use it to build your personal agenda for our four days together.

On behalf of the HAPS Leadership and staff, welcome to Kansas City! We are so excited to have you here. Please don't hesitate to connect with me in the coming days.

With much appreciation for all you do to advance excellence in education,

Caitlin Hyatt
HAPS Executive Director

OFFICE OF THE
MAYOR/CEO
CHRISTAL E. WATSON

701 North 7th St., Suite 926
Kansas City, Kansas 66101

Phone: (913) 573-5010

February 11, 2026

Human Anatomy & Physiology Society (HAPS)
2026 Annual Conference

Greetings:

As Mayor of Kansas City, Kansas, it is my distinct pleasure to welcome the Human Anatomy & Physiology Society Annual Conference to Wyandotte County and our vibrant community.

We are honored that you have selected Kansas City, Kansas as the host city for your conference. Our community is a place where innovation, education, healthcare, and research intersect in meaningful ways. Your work in advancing anatomy and physiology education plays a critical role in shaping the future of healthcare, scientific discovery, and student achievement across the nation. We are proud to host professionals whose dedication strengthens the very foundation of medical and scientific excellence.

While you are here, I encourage you to explore all that our region has to offer. Experience the rich cultural heritage of our diverse neighborhoods and enjoy the dynamic culinary and arts scenes throughout our city. Kansas City, Kansas is a community grounded in resilience, growth, and collaboration. We believe in rebuilding opportunity, renewing our people, and regaining our collective strength through partnerships like yours. Your presence here contributes to that spirit of progress.

I hope your conference is filled with meaningful dialogue, impactful learning, and lasting professional connections. On behalf of the residents of Wyandotte County and Kansas City, Kansas, I wish you a productive and memorable experience in our city.

Yours in service,

Christal E. Watson
Mayor/CEO

QUINTON D. LUCAS
Mayor

Hello,

Thank you for visiting Kansas City!

On behalf of the City of Kansas City, Missouri, I extend a warm welcome to the professors from colleges all over the U.S. as well as Canada and several other countries attending the Human Anatomy & Physiology Society conference.

Situated in the heart of America, Kansas City is an accessible city for fans traveling from any corner of the country, and certainly for those within the region who see our city as an ever-growing destination. Beyond our beautiful city, we are known for our unequivocal Midwest kindness, the diversity of our residents, and the united identity we all share and proudly display to visitors.

Our city is known for its beautiful fountains and for having many museums such as the Nelson Atkins Museum and the Kauffman Center for Performing Arts, and professional championship sports teams - the Kansas City Royals, Sporting KC, Kansas City Current, Mavericks, and the now Super Bowl LIV, LVII, & LVIII Champions, the Kansas City Chiefs. We offer several vibrant entertainment districts and cultural centers such as Power & Light District, Crossroads, Country Club Plaza, River Market, and our historic 18th & Vine Jazz District - all of which are accessible through our zero-fare public transit system.

Whether you are in the mood for the best BBQ in the country or a microbrew in a pub with a live band, I am confident your visit will be a memorable one.

It is my hope that your time in Kansas City is spent laughing and enjoying all this city has to offer you, your friends, and family. I hope you visit again soon.

Very truly yours,

Quinton D. Lucas

The Human Anatomy & Physiology Society (HAPS) was founded in 1989, after three successful national conferences promoting communication among teachers of human anatomy and physiology at the college level. HAPS is an organization of Human Anatomy & Physiology instructors who strive for excellence in undergraduate instruction in Anatomy & Physiology. Increased growth of the Society necessitated securing an Executive Director and an organizational management firm to assist in the day-to-day administration of HAPS. However, HAPS remains primarily a volunteer organization.

The **Board of Directors** makes the final policy decisions that steer the organization, but most of the work of HAPS is accomplished by the committees. All of these people (including the Conference Planning Committee) are unpaid volunteers. We encourage you to attend the HAPS Committee Meeting Extravaganza on Sunday, May 24th from 3:15-4:15 PM in the room where the General sessions will take place. This is a chance for you to learn about each of the committees in HAPS and see where you can find your HAPS-y home!

HAPS Board of Directors 2025 – 2026

President: Rachel Hopp
Past President: Melissa Quinn
President Elect: Larry Young
Secretary: Cinnamon VanPutte
Treasurer: Tracy Ediger
Central Regional Director: Kathy Burleson
Eastern Regional Director: Anya Goldina
Southern Regional Director: Soma Mukhopadhyay
Western Regional Director: Juanita Jellyman

Executive Director: Caitlin Hyatt

Standing Committees 2025 – 2026

2026 Annual Host Committee Chairs: Todd Gordon
Anatomical Donor Stewardship: Jeremy Grachan
Awards & Scholarship: Gilbert Pitts
Communications: Caitlin Burns
Conference: Beth Eischen
Curriculum & Instruction: Abbey Breckling
Diversity, Equity, and Inclusion: Jennifer Stokes
Fundraising: Stacey Dunham
Welcoming & Belonging: Chasity O'Malley & Caitlin Hyatt
Steering Committee: Chastity O'Malley

Special Committees and Programs 2025 – 2026

Educator Editor-in-Chief: Jackie Carnegie
Exam Program Leads: Janet Casagrand, Valerie O'Loughlin, Dee Silverthorn
Executive Committee: Rachel Hopp
Finance Committee: Ron Gerrits
Nominating Committee: Larry Young
Presidents Emeriti Advisory Committee: Kerry Hull

A list of contact information can be found on the governance area of the website https://www.hapsweb.org/about-us/board-of-directors/

HAPS Presidents & Conference Coordinators

Current President

Rachel Hopp, 2025-2026

President-Elect

Larry Young, 2025-2026

Past Presidents

Melissa Quinn, 2024-2025
Kerry Hull, 2023-2024
Eric Sun, 2022-2023
Kyla Ross, 2021-2022
Wendy Riggs, 2020-2021
Mark Nielsen, 2019-2020
Judi Nath, 2018-2019
Ron Gerrits, 2017-2018
Terry Thompson, 2016-2017
Betsy Ott, 2015-2016
Tom Lehman, 2014-2015
Valerie O'Loughlin, 2013-2014
Dee Silverthorn, 2012-2013
Don Kelly, 2011-2012
Caryl Tickner, 2010-2011
John Waters, 2009-2010
Kevin Petti, 2008-2009
Margaret Weck, 2007-2008
Joseph Griswold, 2006-2007
Frederic Martini, 2005-2006
Sandra Lewis, 2004-2005
Philip Tate, 2003-2004
Michael Glasgow, 2002-2003
William Perrotti, 2001-2002
Henry Ruschin, 2000-2001
Christine Martin, 1999-2000
Steve Trautwein, 1998-1999
Kevin Patton, 1997-1998
Karen LaFleur-Stewart, 1996-1997
Robert Antony, 1995-1996
Wayne Carley, 1994-1995
Sandra Grabowski, 1993-1994
Gary Johnson, 1992-1993
Virginia Rivers, 1991-1992
Richard Welton, 1990-1991
Richard Steadman, 1989-1990

This Year

2026 - Kansas City, KS & MO (Todd Gordon)

Coming Attractions

2027 - Houston, TX (Chad Wayne)
2028 - Nashville, TN (Cindy Wingert)

Previous HAPS Conferences

2025 – Pittsburgh, PA (Burhan Gharaibeh & Natasha Baker)
2024 – St. Louis, MO (Cinnamon Van Putte)
2023 - Albuquerque, NM (Mark Danley)
2022 - Fort Lauderdale, FL (Chasity O'Malley & Cheryl Purvis)
2021 – Virtual Conference (Melissa Quinn)
2020 – Virtual Conference (Jacqueline Carnegie)
2019 – Portland, OR (Jacqueline Van Hoomissen)
2018 – Columbus, OH (Jennifer Burgoon & Melissa Quinn)
2017 – Salt Lake City, UT (Mark Nielsen)
2016 – Atlanta, GA (Kyla Ross & Adam Decker)
2015 – San Antonio, TX (Anita Moss & Jason LaPres)
2014 – Jacksonville, FL (Lourdes Norman)
2013 – Las Vegas, NV (Kebret Kebede)
2012 – Tulsa, OK (Karen McMahon)
2011 – Victoria, BC, Canada (Peggy Hunter)
2010 – Denver, CO (Terry Harrison)
2009 – Baltimore, MD (Ellen Lathrop-Davis)
2008 – New Orleans, LA (Judy Venuti)
2007 – San Diego, CA (Kevin Petti)
2006 – Austin, TX (Mary Lou Percy)
2005 – St. Louis, MO (Margaret Weck)
2004 – Calgary, AB, Canada (Izak Paul)
2003 – Philadelphia, PA (Lakshmi Atchison)
2002 – Phoenix, AZ (Philip Tate)
2001 – Maui, HI (Frederic Martini)
2000 – Charlotte, NC (Nishi Bryska)
1999 – Baltimore, MD (Robert Smoes)
1998 – Fort Worth, TX (Theresa Page)
1997 – Toronto, ON, Canada (Henry Ruschin)
1996 – Portland, OR (John Martin)
1995 – St. Louis, MO (Kevin Patton)
1994 – Portsmouth, NN (Pam Langley)
1993 – Beaumont, TX (Wayne Carley)
1992 – San Diego, CA (Shirley Mulcahy)
1991 – Greenville, SC (Karen LaFleur-Stewart)

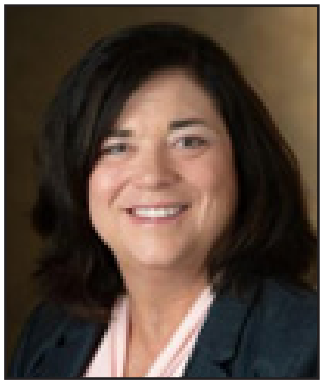
HAPS Board of Directors

2025 - 2026

President
Rachel Hopp

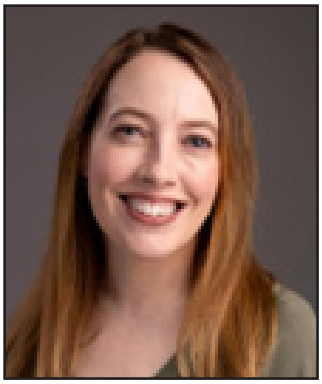
Past President
Melissa Quinn

President-Elect
Larry Young



Secretary
Cinnamon vanPutte

Treasurer
Tracy Ediger



Central Regional Director
Kathy Burleson

Eastern Regional Director
Anya Goldina

Southern Regional Director
Soma Mukhopadhyay

Western Regional Director
Juanita Jellyman

HAPS Committees

2025 - 2026 Committee Chairs

HAPS uses committees to further the goals and strategic vision of the Society. Each committee has a Chair who leads the committee, and a number of members who help make sure the work gets done. Pick a committee that interests you and come to the HAPS Committee Meeting Extravaganza on Sunday, May 24th from 3:15-4:15 PM in the room where the General sessions will take place.

2026 Annual Host Committee Chair

Todd Gordon

Our committee oversees the coordination of the 2026 Annual Conference.

Anatomical Donor Stewardship Committee

Jeremy Grachan

We are charged with developing, reviewing, and recommending policies and procedures on the use of cadavers and human tissues and address issues pertinent to the development and maintenance of cadaver labs.

Awards & Scholarships Committee

Gilbert Pitts

We administer the HAPS Awards & Scholarships Program.

Communication Committee

Caitlin Burns

We facilitate communication within HAPS, as well as outreach to non-members and potential members through various social media outlets.

Conference Committee

Beth Eischen

We actively encourage HAPS members to host an Annual or Regional Conference. We also provide advice and assistance to members who do host a HAPS conference.

Curriculum & Instruction Committee

Abbey Breckling

The C&I Committee is dedicated to enhancing anatomy and physiology education through innovative, research-based resources aligned with the HAPS Learning Goals and Outcomes. With a team of enthusiastic educators and active subcommittees, we aim to support instructors and inspire engaging, effective teaching practices. Join us to see what we're working on next!

HAPS Committees

2025 - 2026 Committee Chairs

Diversity, Equity, and Inclusion Committee

Jennifer Stokes

The Diversity, Equity, and Inclusion committee supports our membership by providing professional development opportunities for HAPS members related to equitable and inclusive teaching of anatomy and physiology, creating and sharing resources for evidence-based best practices in teaching of anatomy and physiology, and fostering a sense of belonging for diverse members of HAPS by advocating for and ensuring inclusive practices within the organization and at HAPS events.

Fundraising Committee

Stacey Dunham

The Committee organizes fundraising activities.

Welcoming and Belonging Committee

Chasity O'Malley

Caitlin Hyatt

Our goals are:

1. To help to create an environment of inclusion and promote a sense of belonging within the membership.
2. Promote outreach to engage membership throughout the organization.
3. Increase HAPS general membership.
4. Increase active participation of membership.
5. Increase membership retention.

Many of the committees will meet during the annual conference, as well as present posters with information about their activities and projects. The annual conference is a great opportunity to learn more about this aspect of HAPS. Come see what we're about!

HAPS Programs

2025 - 2026 Program Leads

Executive Committee

Rachel Hopp

We are the top administrators of HAPS, setting policies and governing the Society.

HAPS Educator

Jacqueline Carnegie

We oversee the peer-reviewed journal of HAPS, the *HAPS Educator*.

Presidents-Emeriti Advisory Board

Kerry Hull

Finance Committee

Ron Gerrits

We are responsible for reviewing HAPS' investments, disbursements and financial strategies in all programs and all accounts. Using this information, we make recommendations to the Board.

Nominating Committee

Larry Young

We assemble a list of qualified candidates for election to the HAPS Board of Directors.

Exam Program

Valerie O'Loughlin, Dee Silverthorn, & Janet Casagrand

We develop, maintain and manage the standardized HAPS exams.

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Dee Silverthorn

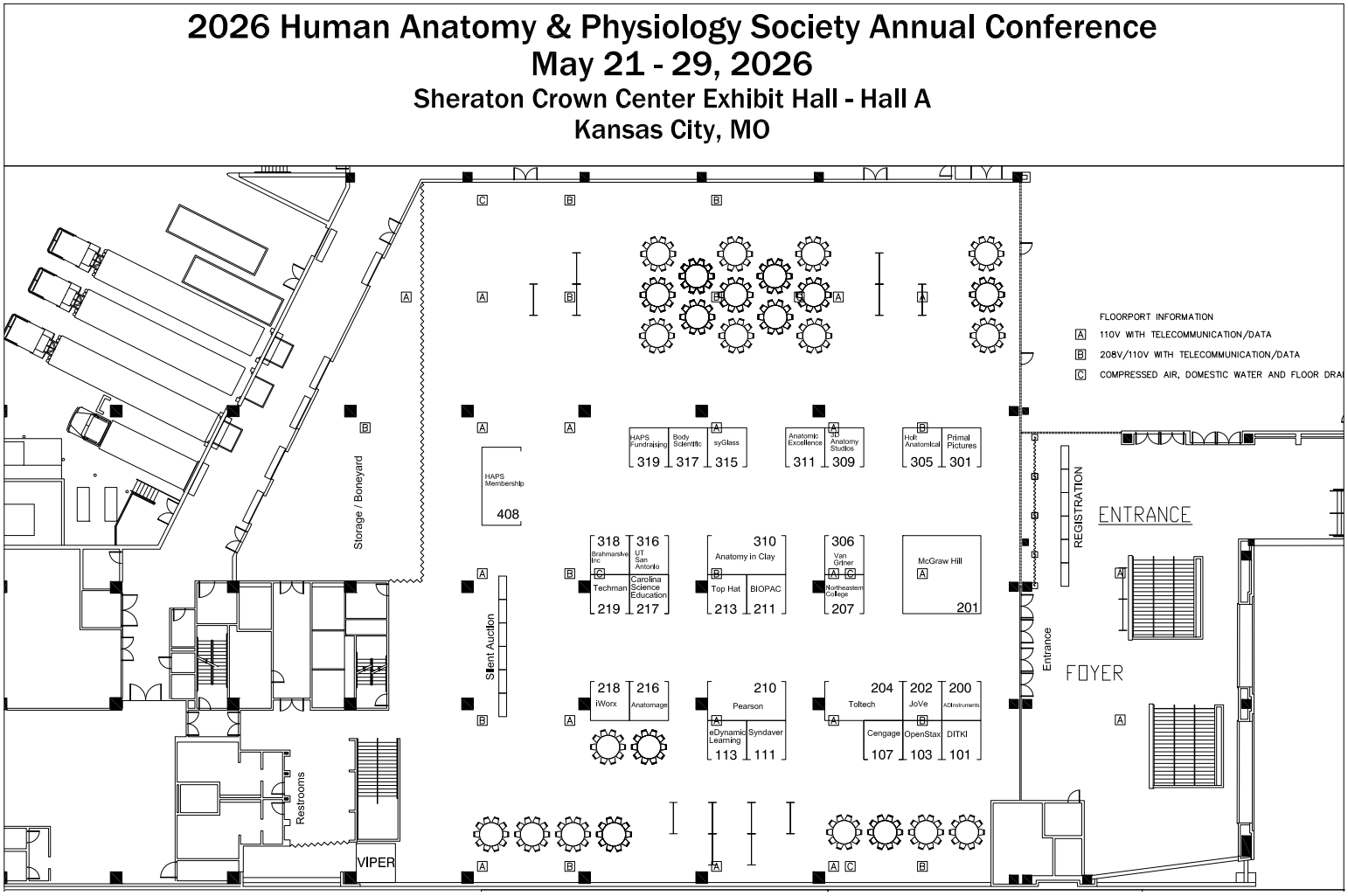
$3000+

John Martin

January - December 2025

Hotel Layout

Exhibitor Space Layout



HAPS 2026 Exhibitors

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HAPS Fundraising 319

Donations to HAPS are tax-deductible contributions to projects that support professional development programs for A&P teachers that enhance the quality of human A&P instruction. Why donate? Here's just one of many reasons: Your support of HAPS will help fund a deserving graduate student to attend and present at the HAPS Annual Conference. Awards and Scholarships include: HAPS Conference Travel Award, John Martin Second Timers Award, Sam Drogo Technology in the Classroom Award, Gail Jenkins Teaching and Mentoring Award, and the Marieb, Hoehn, and Haynes Award for Diversity, Equity, and Inclusion.

HAPS Membership Experience 408/409

Step into the Membership Experience Area—your hub for connection, engagement, and fun at the conference! Whether you're a long-time member or new to the community, this space is designed to enhance your conference experience. Discover Membership Benefits, spin a wheel and play some games for prizes, and explore committee opportunities. Chat with HAPS Board members and Steering Chairs to share your thoughts and gain insights. Stop by, say hello, and make the most of your membership experience!

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HHMI ..... No Booth

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Join us for our third HAPS Virtual Conference!

The HAPS Virtual Conference Committee is excited to host a nine-day virtual conference:

October 10-18, 2026

The event will be held in Canvas (a learning management system) where you'll have streamlined access to all activities. We are especially excited to use a flipped format with our keynote speakers and workshops, which means you can watch recorded content on your own time, and then join synchronous (and moderated) Zoom discussions with your HAPSy colleagues.

Participate in this Virtual Conference and join us for:

- Three keynote talks hosted by amazing professionals in the field
- Panel discussion on Artificial Intelligence
- Flipped workshops
- Virtual posters (a great opportunity for faculty and student presenters!)
- Opportunities to engage with and learn more about the many HAPS Committees
- Social activities for making connections and building community
- Games and prizes! (It's true!)

Registration opens in May 2026
$175 Earlybird! *($200 Regular)*

Scholarships are available!

https://www.hapsweb.org/conferences-events/conference-hub/virtual/

Join us for the HAPS *Silent Auction* and *Fun Run/Walk*

Sponsored by the HAPS FUNDRAISING Committee!

The *Silent Auction* will open on **Sunday, May 24th in the Exhibit Hall.** You'll have until **6:00 PM** to bid on your favorite item. Items can be paid for at the registration desk (Exhibit Hall Foyer) and picked up in the Exhibit Hall on Monday, May 25th from 8:00 AM until 3:00 PM. Any item not claimed by 3:00 PM will be forfeited and saved for a future Silent Auction event.

The *Run/Walk* is scheduled for **Monday, May 25th from 7:00 – 8:30 AM.** To register, please visit the HAPS Donation Table in the Exhibit Hall. Once registered, everyone will meet in the lobby of the Hotel and be given a map of the route. The Run/Walk will start and finish at the Hotel.

Additionally, Yoga will be offered at the same time as the Run/Walk, on Monday, May 25th from 7:00 – 8:30 AM. To register, please visit the HAPS Donation Table in the Exhibit Hall. Once registered, everyone will meet in the back of the Exhibit Hall to participate.

All proceeds from the auction and run/walk go towards supporting the education and awards programming of the Society!

Donations to HAPS help us provide scholarships to attend Annual Conferences! This year, HAPS awarded 13 scholarships. Eight of these awards (Conference Travel Award) are funded primarily by member donations to HAPS.

Make sure to visit the HAPS Fundraising Booth in the Exhibit Hall! Help us continue to support our colleagues by making a donation or pledge. No amount is too small (or too large). You can also donate at any time on the HAPS Fundraising webpage (**https://membership.hapsweb.org/page/HAPSFundraising**)

Here is a handy QR code>

The Human Anatomy & Physiology Society is happy to announce the following winners of the HAPS Conference Travel Award.

Abigail Johnson, M.S., ACSM-EP, is a lecturer and laboratory coordinator for Anatomy & Physiology at Georgia Southern University's Waters College of Health Professions, where she teaches both Human Anatomy & Physiology I and II lecture and laboratory courses. In her role, she oversees the day-to-day operations of laboratory spaces across two campuses and supervises a team of graduate teaching assistants. She holds certifications as an ACSM Certified Exercise Physiologist, FMS Level One, and POUND Pro instructor, and maintains CPR/AED and AACCA coaching credentials.

She is currently pursuing her Doctor of Education in Higher Education Leadership and Practice at the University of North Georgia, with dissertation research examining non-tenure track lecturer motivation during institutional change. She earned her master's degree in kinesiology with a concentration in Exercise Science from Georgia Southern University, where she also completed her bachelor's degree. Her professional interests include evidence-based teaching practices, leadership development, and TA mentorship in A&P education. Outside of the classroom, Abi enjoys fitness instruction and is planning a wedding in Savannah for summer 2027.

Poster: Applying Situational Leadership Theory to Graduate TA Development in Anatomy & Physiology Labs: A Reflective Analysis

Supervising diverse teaching assistants (TAs) in anatomy and physiology labs requires adaptive approaches. This reflective analysis applies Situational Leadership Theory (SLT) to match supervisory style to individual TA developmental needs. SLT proposes four leadership styles aligned with follower readiness, based on competence and commitment. TAs were categorized by readiness level, revealing observable patterns across data sources. This analysis demonstrates how systematic application of leadership theory enables efficient, individualized, evidence-based TA supervision in A&P laboratory settings.

Santanu De, M.Sc., PhD, is an Associate Professor of Anatomy and Physiology in the Department of Biological Sciences, Halmos College of Arts and Sciences at Nova Southeastern University, Fort Lauderdale, Florida, USA. He received a B.Sc. in Physiology (Honors) from Presidency College, Kolkata, India, an M.Sc. in Biophysics, Molecular Biology and Genetics from the University of Calcutta, India, and a Ph.D. in Physiology from Kent State University, Ohio, USA. Dr. De pursued Postdoctoral Fellowships at Purdue University, West Lafayette, Indiana, USA and at Yale-NUS College, Singapore (a collaboration of Yale University with the National University of Singapore). Besides, he was a Visiting Faculty in the Department of Biomedical Sciences at Grand Valley State University, Allendale, Michigan, USA. Dr. De has taught multiple laboratory/lecture classes for diverse Biology major and non-major courses in Anatomy, Physiology, Cell Biology, Human Biology, and General Biology via in-person, online, as well as hybrid formats. His research interests include STEM education, pedagogy, and reproductive physiology, in which he has mentored over 25 students, collaborated interdisciplinarily with faculty colleagues from across the U.S., held professional memberships at distinguished scientific societies, received notable grants/awards, published several peer-reviewed papers, and presented projects at prestigious national and international conferences. He serves as an invited peer reviewer and editorial board member for various acclaimed scholarly journals.

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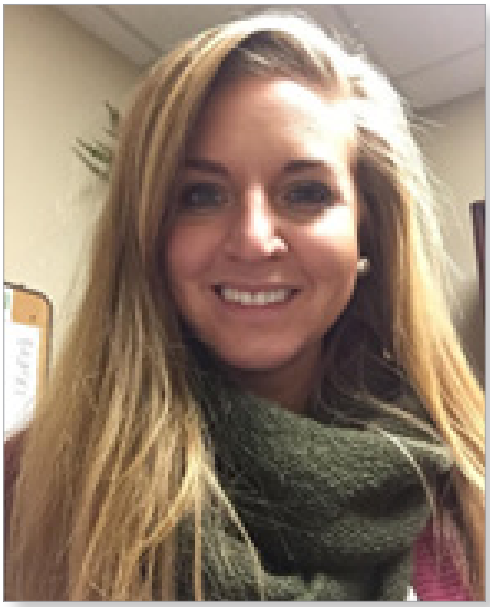
Poster: Artificial Intelligence (AI) in Active Learning and Assessment at Various Curricular Levels of Global Health Sciences and STEM: Analysis of Key Benefits and Challenges

Today's all-pervasive Artificial intelligence (AI) necessitates evaluating its post-COVID-19 implications for STEM and health-science education. This study aimed at encapsulating evidence-based roles of AI in fostering active learning and assessment within these experiential disciplines among developed countries versus developing/underprivileged communities. An extensive scoping review of 50 recent, refereed journal-publications was conducted. AI's benefits range from gamified platforms and adaptive tutoring tools at K-12, AI-powered undergraduate laboratories, and predictive analytics for graduate/postgraduate training, to AI-enhanced grading/feedback tools. Challenges include disparate global access, risk of bias, and constant instructor supervision. AI should complement, not replace, educators through culturally responsive and ethical application.



Mary Ann Sexton, is an Associate Professor of Biology at Roane State Community College with 15 years of experience teaching Anatomy and Physiology and Microbiology. Her work emphasizes high-impact teaching practices, including cooperative learning, and she is actively involved in sharing innovative approaches to Anatomy and Physiology education through HAPS as a member of the RECAPER Cohort. She also serves as Program Director for a summer study abroad program in the Galápagos Islands, where she teaches Biology. Additionally, Mary Ann serves on the Tennessee Department of Education Healthcare Sciences Advisory Council, is a Tennessee Achieves mentor, and supports student organizations such as the Pre-Allied Health Science Club and Fellowship of Christian Athletes at her home campus.

Poster: Cooperative Learning and Student Growth in Anatomy and Physiology Laboratories: Investigating the Impact of the Jigsaw Method

Students in Anatomy and Physiology must master extensive content while also developing professional skills essential for healthcare careers, including communication, teamwork, and peer teaching. This study examined the use of cooperative learning in Anatomy and Physiology I laboratory courses to support these goals. In this approach, students worked in interdependent teams, became content "experts," and taught their peers, promoting accountability, engagement, and collaboration. Implemented throughout the semester, Jigsaw activities fostered a more inclusive, student-centered learning environment. Consistent with prior research, students reported increased confidence, stronger peer connections, and higher engagement, highlighting the value of cooperative learning in STEM education.

Mindi Palmer Fried, M.S., D.C., is a college-level Anatomy and Physiology instructor with more than 16 years of experience teaching in both lecture and laboratory settings. Her work centers on helping students develop a clear understanding of core physiological principles through structured activities, case studies, and guided application. Mindi has been a member of the Human Anatomy and Physiology Society (HAPS) since 2016 and currently serves on the organization's eLearning Task Force, contributing to conversations and initiatives related to effective online and blended instruction in A&P education. Through thoughtful course design and professional service, she remains committed to steady improvement in both her teaching practice and the broader A&P community.

Workshop: Reframing A&P through a Lens of Diversity

In A&P, diversity is the rule rather than the exception. If that is true, then students who are only using rote memorization of "normal" (meaningless anyway), are not adequately being prepared for a career working with real people. This reframing requires an emphasis on pattern recognition and process understanding over rote memorization.

This year, I have attempted this reframing in my Human A&P I courses last semester, and in my Human A&P II courses this semester. I will share my experiences with this reframing in the workshop, and open up discussion on better preparing students for their future careers.

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Meaghan O'Neil, M.S., Throughout her childhood, she was heavily involved in equestrian sports, which fostered her early dream of becoming an equine veterinarian. She attended the University of Florida, where she earned a Bachelor of Science in Animal Sciences with an emphasis on animal biology. It was there that she discovered her passion for animal physiology. After working as an undergraduate research assistant on large-animal research studies and benefiting from strong mentorship, she decided to pursue graduate school in large-animal research.

She completed her Master of Science in Physiology of Reproduction at Texas A&M University–College Station, studying (1) the neuroendocrine control of reproductive seasonality in mares and (2) the effects of prenatal and postnatal nutrition on neuroendocrine and reproductive development in beef heifers. Although her studies focused heavily on large-animal agriculture, her degree program emphasized a "one-health" perspective, highlighting the importance and interrelationship among physiological disciplines.

While she enjoys research, it was during graduate school that she developed a strong passion for teaching and chose to pursue that career path. Beginning in 2019, she taught Anatomy and Physiology as well as General Biology using a variety of instructional modalities, including face-to-face lectures and labs, synchronous live courses, and fully online courses. She is currently an Instructor at Florida Southern College in Lakeland, Florida, where she primarily teaches undergraduate Anatomy and Physiology I and II.

Poster: Open labs - Is there an impact on student performance?

Academic performance in A&P is often assumed to coincide with hands-on experience. One potential resource are open lab sessions that are unstructured with access to any utilized laboratory materials. Attendance of least one hour of open lab was hypothesized to lead to higher scores on subsequent exams compared to no attendance. Scores (n = 510) in A&P1 courses from those who attended at least one hour of open lab prior to a lab exam were higher (70.2 ± 2.2%) compared to those did not attend (50.1% ± 4.4%), demonstrating the efficacy and value of attending these sessions on academic performance.

Nathaniel M. King, MS, is an anatomy & physiology educator and SoTL researcher. His work centers on designing evidence-based, argument-driven learning experiences that help students move beyond memorization and toward mechanistic reasoning in physiology. Through structured mock trials and low-cost manipulative activities, he studies how innovative assessment and active learning strategies can improve engagement and conceptual understanding across both face-to-face and asynchronous online courses. He is a participant in the CAPER initiative and continues to explore scalable approaches to rigorous, student-centered science education. Nathaniel holds master's degrees in medical sciences from the University of South Florida and in exercise physiology from Florida State University, as well as a bachelor's degree in applied and computational mathematics from Florida State University. Outside the classroom, he enjoys growing flowers, "suffering" on his bicycle during fast rides, and spending time with his wife and their two cats.

Workshop: From Memorization to Deliberation: Mock Trials as a Framework for Teaching Physiology Through Evidence and Argument

This workshop examines a shift in Anatomy & Physiology from memorization to deliberation by using structured mock trials as a central framework for course design. Longstanding practices, including content-heavy coverage, memorization-centered assessment, passive-lecture defaults, and procedurally scripted labs, are explicitly challenged and redesigned. In these trials, students work collaboratively to evaluate physiological claims, analyze shared data, and defend conclusions using evidence and argument. Participants will examine a practical, scalable framework and concrete examples of course redesign that prioritize intellectual agency, coherence, and accountability, focusing on what students can meaningfully do with physiology rather than what they recall.

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Cristy Tower-Gilchrist, PhD, is an Assistant Professor, Clinical Track within the Nell Hodgson Woodruff School of Nursing at Emory University. She currently serves as the Pre-Requisite Coordinator and the Liaison for the SON–Oxford College Pipeline. In addition, she serves as the Advisor for the Oxford Pre-Nursing Club and the Pre-Nursing Club at Emory.

She received her PhD in Cell Biology from the University of Alabama at Birmingham, where she also completed her postdoctoral training within the Cell Biology Department in the School of Medicine. She has been teaching human anatomy and physiology for more than seven years and has structured her courses to be more inclusive through evidence-based practices and the implementation of active learning strategies that promote student academic success. One of her primary goals as a professor is to meet every student where they are and establish a safe learning environment. She enjoys interacting with students in the classroom and laboratory, where there is never a dull moment during active dissections or discussions.

Poster: What a Wonderful Learning World: Implementing Inclusive Practices into A&P

Anatomy and physiology (A&P) courses are required for many health professional programs including nursing, physician assistant, and physical therapy; and are often deemed rigorous, content-heavy courses. We do not all think and learn the same. Therefore, it is important to create inclusive learning environments that encompass the diversity of students enrolled in these courses. Studies show that active learning tools improve students' academic success. Providing students with increased opportunities for intentional practice of content within the classroom can lead to equitable learning experiences. This project will focus on inclusive learning strategies and how to implement activities within A&P.

Ksenia Everton M.S., is a Biology instructor at Portland Community College, where she currently teaches Human Anatomy & Physiology and Cell Biology. Over the years, she has taught the full A&P sequence as well as prerequisite coursework, working closely with pre-nursing and allied health students as they prepare for highly competitive professional programs. Teaching multiple cohorts in sequence has allowed her to mentor students longitudinally and refine a cohesive, concept-driven approach across the curriculum.

Ksenia is passionate about reducing academic stress while maintaining high standards in rigorous science courses. She incorporates collaborative quizzes, structured active-learning strategies, and metacognitive skill-building into her classes to foster a strong sense of belonging and improve student outcomes. Her work centers on helping students move beyond memorization toward deep conceptual understanding of physiology and the interconnectedness of body systems.

Outside the classroom, Ksenia enjoys live music, traveling, and spending time outdoors in the Pacific Northwest.

Poster: Collaborative quizzes increase student sense of belonging

Students in Anatomy and Physiology courses at Portland Community College experience high academic stress. Prior research shows that a strong sense of belonging is positively associated with academic success, engagement, and retention. To promote belonging and reduce stress, collaborative quizzes were implemented as an active-learning strategy across multiple course sections during one academic year. Students completed three 15-question quizzes per quarter using a three-stage format: individual response, small-group consensus retake, and instructor-led feedback. Preliminary data from quiz and exam scores and end-of-term reflections (n = 140, across 7 sections) indicate improved belonging. This research was supported through NSF DUE 2111119.

The Human Anatomy & Physiology Society is happy to announce the following winner of the Sam Drogo Technology in the Classroom Award.

This award is sponsored by ADInstruments.

David Murray-Stoker, is an Assistant Professor of Biology at Clayton State University, where he teaches courses in anatomy and physiology, principles of biology, and evolution. He holds a B.S. in Ecology from the University of Georgia and a Ph.D. in Ecology and Evolutionary Biology from the University of Toronto. His research sits at the intersection of community ecology and evolutionary biology, with a particular focus on metacommunities and how urbanization shapes species interactions and local adaptation.

David's teaching is grounded in evidence-based pedagogy developed through formal training in course and assessment design, active learning, and universal design for learning. He employs a range of instructional strategies – including flipped classroom methods, case-based learning, and discussion-driven activities – to develop students' capacity for genuine scientific thinking, from understanding the structure and function of the human body to applying evolutionary principles to real-world biological systems. He also integrates generative AI as an assistant for instructional design and developing student-centered learning environments.

Workshop:

Generative AI and instructional design in a flipped anatomy and physiology classroom

I present a pedagogical workflow for designing activities for a flipped anatomy and physiology classroom. Using generative AI to assist instructional design, activities are aligned to learning objectives and scaffolded by Bloom's taxonomy. Activities vary in format (individual, pairs, small groups, whole) and require minimal preparation, generating a bank of 7-15 potential activities for each lecture. Student performance on pre-class quizzes guides the selection of activities during flipped sessions, allowing targeted clarification of misunderstandings and reinforcement of comprehension. With the aid of generative AI, the benefits of a flipped classroom are amplified by building student-centered learning into each class session.

About the Sam Drogo Technology in the Classroom Award:

In September 2010, HAPS lost a great friend. Our colleague Sam Drogo died shortly after doing one of the things he loved the most—teaching a lab full of Anatomy and Physiology students.

Sam's death has left an empty space at Mohawk Valley Community College, his home institution for over three decades. It has also left an empty space in HAPS. Sam was a long-time, devoted HAPS member, an active participant in the development of the HAPS Comprehensive Competency Test, and a consistent proponent of the use of technology in the classroom and laboratory.

In Sam's honor, ADInstruments established the Sam Drogo Technology in the Classroom Award. This is an annual award for a HAPS member who demonstrates the innovative use of technology to engage undergraduates in Human Anatomy and Physiology. The award is intended to encourage recipients to present a workshop at the HAPS Annual Conference on this innovative technology or on the use of technology in the classroom or laboratory.

Sam was a wonderful man. This award is a fitting tribute to him and we look forward to implementing it. Our thanks to ADInstruments for their generosity and our lasting thanks to Sam as colleague, mentor and teacher.

The Human Anatomy & Physiology Society is happy to announce the following winner of the Gail Jenkins Teaching and Mentoring Award.

This award is sponsored by Wiley.

WILEY

Jaclyn Susa, M.S., is a Professor of Biology at Collin College with a passion for transforming the traditional classroom into an engaging environment. With a background as a dual credit instructor, experimentation with active learning strategies began as a way to bridge the gap between high school and higher education.

Her fifteen-year teaching career has prioritized student engagement. With hands-on inquiry, she works to make complex physiological concepts accessible and exciting for all learners. Outside of teaching, Jaclyn is kept on her toes by two energetic children, who provide a daily masterclass in multitasking and creative problem-solving.

Workshop:

Active Anatomy: Practical Active Learning Strategies for the A&P Classroom

Struggling with silence after asking a question? Battling the "mid-lecture glaze"? Active learning is the antidote to student passivity, but moving beyond the standard lecture can be daunting. We will explore high-impact active learning strategies with inexpensive materials.

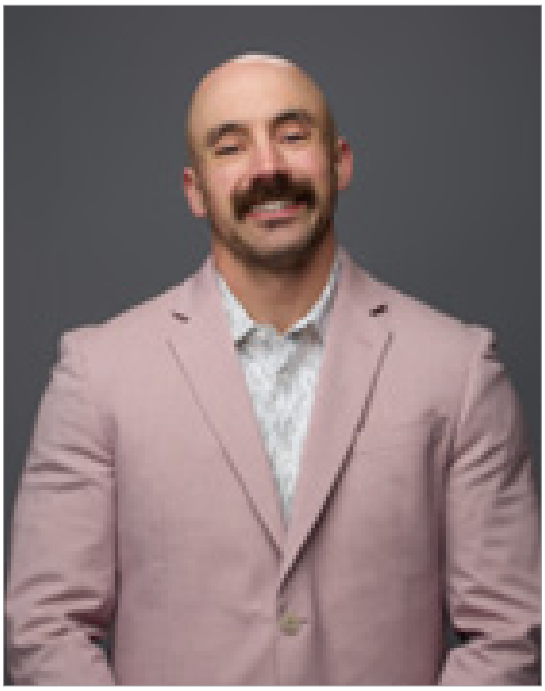
Participants will move beyond "listening" to "doing" by modeling these techniques in real-time. We will also address common friction points, including time constraints in the classroom. Attendees will leave with a toolkit of activity templates and a roadmap for transforming their classroom into a dynamic hub of engagement.

About the Gail Jenkins Teaching and Mentoring Award:

Gail was a dynamic and engaging instructor of anatomy & physiology and avid supporter of HAPS and its goals. Her death has left a hole in the hearts of many - her colleagues at Montgomery College, her publishing colleagues at Wiley, her HAPSter colleagues, her family and many friends. Gail loved teaching, and most of all, she loved being able to bring clarity to often difficult concepts for students to grasp. One of her favorite phrases with students was, "Let's ***KISS*** this". It meant - let's ***"Keep it Simple, Sweetie***." When faced with a challenging concept, Gail would help her students KISS the topic by employing everyday analogies and/or props to visualize or unpack the information. She provided a simple foundation on which the students could build and remember their newly acquired knowledge. No one got more use out of an old tube of toothpaste, a hot dog, a big red balloon, or a plate of chocolate chip cookies! Her students loved her for it.

In Gail's honor, Wiley publishers in partnership with HAPS have established the Gail Jenkins Teaching and Mentoring Award. This is an annual award for a HAPS member who demonstrates use of engaging learning activities to help students truly understand and retain the more difficult anatomy & physiology concepts with kinesthetic and active learning strategies using inexpensive everyday props. The award is also designed to recognize those willing to mentor other instructors to also incorporate active learning to benefit more students.

The Human Anatomy & Physiology Society is happy to announce the following winners of the John Martin Second Timers Award.



Peter Stordahl, PhD, graduated with his master's degree from Montana State University in Exercise Science and Nutrition, with an emphasis in Exercise Physiology and Nutrition, in 2019. Shortly after, he moved to Anchorage, Alaska, where he worked in the medical field before accepting a teaching position at the University of Alaska Anchorage. He was soon promoted to laboratory director and site lead for Anatomy and Embryology for the University of Washington School of Medicine site in Anchorage. During this time, he also taught for Creighton University as a special faculty member in their Occupational Therapy program.

In 2024, he was accepted to The Ohio State University and is currently pursuing a doctoral degree in Anatomy. His research interests focus on creating anatomy education resources, anatomy outreach, and documenting anatomical variations.

Poster:
Refining 3D Anatomical Models: Insights from the Development of BuckeyeView Website

The BuckeyeView website is an integrated medical education platform centered around cadaveric 3D models. After 18 months of interprofessional development, BuckeyeView is now beta-testing, allowing us to collect useful web analytics and direct user feedback. Data collected will allow us to continue refining and optimizing our photogrammetry protocols, platform design, and web hosting process. Analysis of this data will provide insights into users' acceptance of, and preferences for, this form of digital anatomy education. Future directions include sharing meaningful insights into digital anatomy education development and dissemination with anatomy educators at large.

Michelle Murphy, PhD, is a teacher, instructional designer, published systems thinking and modeling researcher, and an active member of HAPS. This year is her second time attending a HAPS annual conference. Her first conference was in St. Louis in 2024. Dr. Murphy's research focuses on student development of mental models of physiological integrative systems to support problem solving in pathophysiological scenarios. In addition to teaching, she has clinical experience working in corporate pharmaceutical research. A graduate of the Air Force ROTC program out of the University of Illinois, she was stationed at Minot Air Force Base in 1991 and has been a faculty member within the North Dakota University System since that time. While on active duty with the Air Force, she also taught Anatomy and Physiology night courses at Minot State University. From there she separated from the service to attend graduate school at the University of North Dakota School of Medicine and Health Sciences (UND), earning an MS degree in Physiology in 1998. While a graduate student, she taught for three years as a teaching assistant in the Department of Physiology. During that time, she also taught at Lake Region State College on Grand Forks Air Force Base. In 2000 she started teaching online with Lake Region State College, continuing in that role until 2024. In 2017 she joined the Physician Assistant program at UND as community faculty, teaching Physiology and Pathophysiology. In 2022 Dr. Murphy completed her PhD in Teaching and Learning: Instructional Design & Technology at UND. In 2024 she joined the

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UND Department of Biomedical Sciences, teaching online and SPEA (self-paced) sections of BIMD 220/221 Human Anatomy and Physiology, as well as continuing her teaching role with the Physician Assistant Department, facilitating medical student patient centered learning group sessions, and teaching physiology in the Biomedical Sciences graduate program and the medical program. Within HAPS she is a member of the Conferences Committee and is excited to explore all of the great ideas her HAPS colleagues share at this, and future, conferences!

Poster:

Study strategies as predictors of test performance in undergraduate Human Anatomy and Physiology students

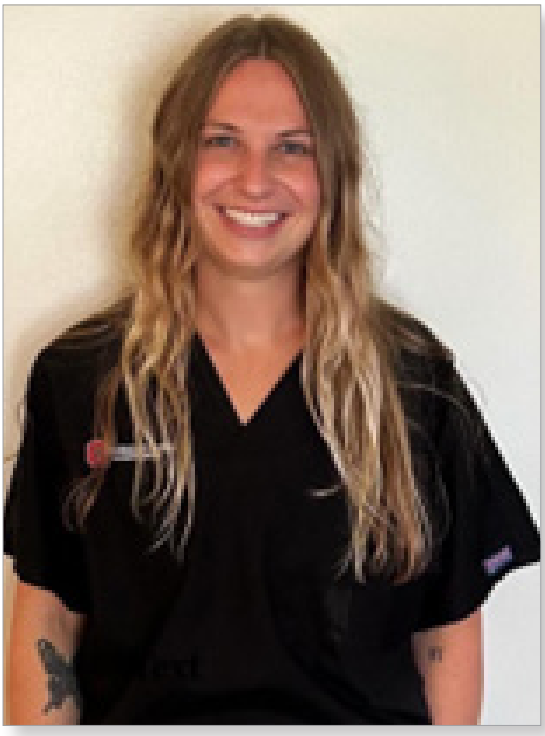
This study evaluated the impact of undergraduate Anatomy and Physiology student engagement in various study strategies with their performance on tests of associated content. The survey asked students to identify the strategies they use to study and how often their study sessions include each strategy. Student responses were matched with one course exam score, the second exam administered in the course. Changes in strategies, and test scores, were tracked through individual student progression across the two semester A&P course series. The poster provides a preliminary analysis of the results over the first year of the two year study.

Workshop:

Using functional pathway analysis as an instructional strategy to facilitate student reasoning in physiological problem spaces

As learners develop expertise, reasoning shifts from focusing on isolated structures to understanding interactions among system components. Emphasizing interactions supports mechanistic reasoning and systems thinking, which are central to physiology. Although biomedical research has historically moved from holistic to reductionist approaches, advances in pathway analysis and systems biology have renewed attention on integrative physiological networks. This presentation summarizes utility of openly available bioinformatics resources commonly used in functional pathway analysis to physiology education. It then provides a hands on opportunity to explore the tools in application to the physiological problem space of blood sugar homeostasis and its disruption in diabetes.

Jenna Kuczek, is a 3rd year PhD student at The Ohio State University where she also received her undergraduate and master's degrees. She previously completed two years of medical school, which sparked her interest in teaching and refining curricula to better integrate textbook knowledge and clinical experiences. Her current PhD focus is the creation and implementation of a clinical anatomy course for undergraduate students at OSU, along with implementing virtual reality labs and simulated surgical labs for her course. Her passion lies in bridging the gap between the classroom and the clinical realm.



Poster:

Cutting Edge Classrooms: How VR and Simulated Surgery Can Shape the Future of Undergraduate Anatomy

We have developed an undergraduate clinical anatomy course, exposing students to applications of their anatomy foundation earlier in their career. We have implemented novel lab experiences including virtual reality (VR) and simulated surgical procedures on human donors within this course. The purpose of this study was to investigate the effects of using VR as a pre-lab learning tool followed by simulated surgical procedure labs on undergraduate students' confidence, anatomical visualization, and spatial understanding of the human body. Overall, we see an increase in student confidence with progressive interventions, while differences were observed between anatomical knowledge gain in each unit.

HAPS 40th Annual CONFERENCE
May 23 – 27, 2026

Schedule of Events

Saturday, May 23 *Sheraton, Kansas City, Missouri*	
8:00 AM – 5:00 PM	**Exhibitor Set up: Exhibit Hall Section A**
8:00 AM – 12:00 PM	**Board of Directors and Steering Committee Joint Meeting: Empire C** *(Board of Directors & Steering Committee Only)*
9:00 AM – 12:00 PM	**Pre-Conference ADS Dissection Workshop – University of Kansas Medical Center Thoracic Dissection** ****(separate registration required and transportation is not provided)**
12:00 PM – 1:00 PM	**Board of Directors and Steering Committee Luncheon: Chouteau** *(Board of Directors and Steering Committee Chairs Only)*
1:00 PM – 3:30 PM	**Board of Directors Meeting: Empire B** *(Board of Directors Only)*
1:00 PM – 3:30 PM	**Steering Committee Meeting: Empire A** *(Steering Committee Chairs Only)*
1:00 PM – 4:00 PM	**Pre-Conference ADS Dissection Workshop – University of Kansas Medical Center Abdominopelvic Dissection** ****(separate registration required and transportation is not provided)**
1:00 PM – 5:00 PM	**Registration: Outside the Exhibit Hall Foyer**
5:30 PM – 6:45 PM	**Registration: Atlanta & New York**
5:30 PM – 7:00 PM	**Welcome Cocktail Hour: Atlanta & New York** Join us for a relaxed Welcome Reception with light snacks, T shirt and Book Swaps, and time to connect. Feel free to continue the fun by heading out for dinner on your own afterward.
Sunday, May 24 *Sheraton, Kansas City, Missouri*	
7:00 AM – 5:00 PM	**Registration: Exhibit Hall Foyer** (closed from 12:00 PM – 1:00 PM)
7:30 AM – 8:30 AM	**First Timer's and Second Timer's Breakfast: Terrace** *Sponsored by ADInstruments*
7:30 AM – 8:30 AM	**Continental Breakfast (for all other attendees): Exhibit Hall Section A**
7:30 AM – 6:15 PM	**Silent Auction Open: Exhibit Hall Section A**
7:30 AM – 6:15 PM	**Exhibits: Exhibit Hall Section A** (Exhibits are closed from 12:00 PM - 1:00 PM)

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8:30 AM – 9:00 AM	**Welcome and Opening Remarks: Exhibit Hall Section B**
9:00 AM – 10:00 AM	**Update Seminar I: Exhibit Hall Section B** *Sponsored by APS* **Jim Davis** ***"Variation as a Teaching Tool: What PFO Physiology Teaches Us About Systems Thinking in the Classroom."***
10:00 AM – 11:00 AM	**Refreshment Break & Exhibits: Exhibit Hall Section A**
10:00 AM – 11:00 AM	**Poster Session 1: Exhibit Hall Section A** (Posters for session 1 should be set up by 9:00 AM and taken down by 12:00 PM)
11:00 AM – 12:00 PM	**Update Seminar II: Exhibit Hall Section B** *Sponsored by HAPS* **Amy Desaulniers** ***"Developmental Origins of Male Infertility: Insights from a Translational Swine Model"***
12:00 PM – 1:15 PM	**Lunch on your own** Registration & Exhibits closed from 12:00 PM - 1:00 PM
12:00 PM – 1:15 PM	**Cafecito Event** **Burnt End BBQ Crown Center** Cafecito in person meet-up! We'll meet at the hotel lobby a little before 12-noon and walk over to the restaurant together—a short 5-7 min walk. BBQ will be provided - First come, first served! And great conversation for all who attend. See you there!
1:15 PM – 2:15 PM	**Update Seminar III: Exhibit Hall Section B** *Sponsored by HAPS* **Brian Couch** ***"Activities and Homework as Learning Tools: Encouraging Authentic Engagement in the Age of AI"***
2:15 PM – 3:15 PM	**Refreshment Break & Exhibit: Exhibit Hall Section A**
2:15 PM – 3:15 PM	**Poster Session 2: Exhibit Hall Section A** (Posters for session 2 should be set-up by 1:30 PM and taken down by 4:00 PM)
2:45 PM – 3:15 PM	**HAPS Fundraising – Chair Yoga: Exhibit Hall Section B** Attendees can participate for a small donation
3:15 PM – 4:15 PM	**HAPS Committee Meeting Extravaganza: Exhibit Hall Section B** ***"Committee Connections: A Speed Networking Experience"*** Hear from each of the HAPS Committee Chairs and learn more about how to get involved in HAPS!
4:15 PM – 5:15 PM	**Update Seminar IV: Exhibit Hall Section B** *Sponsored by AAA* **Timothy Cox** ***"Mitigating Craniofacial Malformations through Early Gestation Dietary Modulation."***
5:15 PM – 6:15 PM	**Drinks with Exhibitors: Exhibit Hall Section A**
6:00 PM	**Silent Auction Closes: Exhibit Hall Section A**
	Free Night!

continued on next page

Monday, May 25

Sheraton, Kansas City, Missouri

7:00 AM – 8:30 AM	**HAPS Fundraising Run/Walk: Foyer** Pre-registration or onsite registration required. Not included in Conference registration.
7:00 AM – 8:30 AM	**HAPS Fundraising Yoga: Back of Exhibit Hall** Pre-registration or onsite registration required. Not included in Conference registration.
7:30 AM – 8:30 AM	**Continental Breakfast: Exhibit Hall Section A**
7:30 AM – 5:00 PM	**Exhibits: Exhibit Hall Section A** (Exhibits are closed from 12:00 PM – 1:00 PM)
8:00 AM – 3:00 PM	**Silent Auction Item Collection & Payment: Registration**
7:00 AM – 5:00 PM	**Registration: Exhibit Hall Foyer** (Closed from 12:00 PM – 1:00 PM)
8:30 AM – 9:45 AM	**HAPS Annual General Membership Meeting: Exhibit Hall Section B**
9:45 AM – 10:45 AM	**Refreshment Break & Exhibits: Exhibit Hall Section A**
9:45 AM – 10:45 AM	**Poster Session 3: Exhibit Hall Section A** (Posters for session 3 should be set up by 9:00 AM and taken down by 12:00 PM)
10:45 AM – 11:45 AM	**Update Seminar V: Exhibit Hall Section B** *Sponsored by HAPS* **Panel: Ron Gerrits, Kevin Patton, Dee Silverthorn, Jonathan Wisco, Tom Lehman** **"*What to Tell Starting A&P Instructors*"**
11:45 AM – 1:15 PM	**Lunch on your own** Registration & Exhibits close for lunch from 12:00 PM-1:00 PM
1:15 PM – 2:15 PM	**Update Seminar VI: Exhibit Hall Section B** *Sponsored by HAPS* **Alan Detton** **"Fascia, What is it and Why Should I Care?"**
2:15 PM – 3:15 PM	**Refreshment Break & Exhibits: Exhibit Hall Section A**
2:15 PM – 3:15 PM	**Poster Session 4: Exhibit Hall Section A** (Posters for session 4 should be set-up by 1:45 PM and taken down by 4:00 PM)
3:15 PM – 4:15 PM	**Update Seminar VII: Exhibit Hall A near Membership Booth** *Sponsored by HAPS* **HAPS Regional Directors** ***"Ignite your Insight: Join us for an Engaging and Supportive Conversation"***
4:15 PM – 5:00 PM	**Door Prizes: Exhibit Hall Section A**
6:00 PM – 7:30 PM	**HAPS Closing Reception: Atlanta & New York** Wrap up the conference in style—mix, mingle, and toast to a great event at our lively closing reception! Enjoy heavy hors d'oeuvres, great conversation, and a relaxed vibe (this is a stand-and-savor kind of night, not a sit-down dinner).

continued on next page

Tuesday, May 26 *Kansas City Kansas Community College, Kansas City, Kansas*	
7:00 AM – 9:00 AM	**Transportation from Sheraton Crown to KCKCC**
7:30 AM – 8:30 AM	**Welcome Breakfast- Upper Jewel and extra seating in Lower Jewel**
7:30 AM – 4:45 PM	**Registration- Water Hole**
8:30 AM – 12:00 PM	**Workshops** Session A1: 8:30 – 9:30 AM Session A2: 9:45 – 10:45 AM Session A3: 11:00 AM – 12:00 PM
12:00 PM – 1:00 PM	**Lunch (lunch is provided) - Upper Jewel and extra seating in Lower Jewel**
1:15 PM – 4:45 PM	**Workshops** Session A4: 1:15 – 2:15 PM Session A5: 2:30 – 3:30 PM Session A6: 3:45 – 4:45 PM
4:45 PM - 5:45 PM	**Bus transportation back to the Sheraton Crown**
Wednesday, May 27 *Kansas City Kansas Community College, Kansas City, Kansas*	
7:00 AM – 9:00 AM	**Transportation from Sheraton Crown to KCKCC**
7:30 AM – 8:30 AM	**Welcome Breakfast- Upper Jewel and extra seating in Lower Jewel**
7:30 AM – 12:00 PM	**Registration- Water Hole**
8:30 AM – 12:00 PM	**Workshops** Session B1: 8:30 – 9:30 AM Session B2: 9:45 – 10:45 AM Session B3: 11:00 AM – 12:00 PM
12:00 PM – 1:00 PM	**Lunch (lunch is provided) - Upper Jewel and extra seating in Lower Jewel**
12:00 PM - 1:30 PM	**Bus transportation back to the Sheraton Crown Center**

HAPS 40th Annual Conference Speakers 2026

Update Seminar I

Sunday, May 24 from 9:00 AM – 10:00 AM

Jim Davis
Sponsored by APS

american physiological society

Assistant Professor
Indiana University School of Medicine, Bloomington

"Variation as a Teaching Tool: What PFO Physiology Teaches Us About Systems Thinking in the Classroom."

Abstract: Physiological variation is ubiquitous, yet we often teach as if every body works the same. Relying on a single "normal" may simplify instruction, but it can also encourage students to memorize isolated facts rather than understand the complex, integrated interactions among physiological systems. Many of these interactions become most apparent when variation is present. By intentionally embracing variation in our teaching, we can help students move from memorizing physiology to thinking like physiologists.

Bio: Jim Davis, PhD, is an Associate Professor of Anatomy, Cell Biology, and Physiology at the Indiana University School of Medicine, where he teaches large-enrollment undergraduate human physiology courses. His doctoral work at the University of Oregon examined how patent foramen ovale (PFO) influences physiological responses to environmental challenges, including hypoxia and hypercapnia. His current scholarship focuses on evidence-based course design, assessment, and the use of structured pre-class and active-learning resources to support student success. He is particularly interested in helping underprepared and first-year students build foundational physiological understanding through flipped-classroom models and open educational resources. Dr. Davis has published and presented on assessment practices and instructional design in physiology education.

Notes:

Update Seminar II

Sunday, May 24 from 11:00 AM – 12:00 PM

Amy Desaulniers

Sponsored by HAPS

Associate Professor
University of Nebraska–Lincoln

"Developmental Origins of Male Infertility: Insights from a Translational Swine Model"

Abstract: Sperm counts in men have declined by more than 50% since 1973, indicating a male fertility crisis. The causes of this decline remain incompletely understood, but mounting evidence suggests that early life exposures may reprogram testis development. Testis development is extensive and highly plastic during fetal and neonatal life, and perturbations during this critical window can have lifelong consequences for male fertility. We use swine as a translational model to determine how environmental factors shape early testis development and long-term reproductive potential, with the ultimate goal of improving fertility in men.

Bio: Amy T. Desaulniers, PhD, is an Associate Professor within the School of Veterinary Medicine and Biomedical Sciences at the University of Nebraska-Lincoln (UNL) and a reproductive physiologist specializing in testis biology and endocrinology. She received a B.S. degree in Animal Science from the University of Missouri-Columbia and graduate degrees (M.S. and Ph.D.) from UNL in swine physiology, then served as an Assistant Professor of Biology at the University of Central Missouri before returning to UNL in 2021. She has taught Human, Animal, and Reproductive Physiology to undergraduate, graduate, and veterinary students and conducts scholarships of teaching and learning projects, most recently examining how educational chatbots can augment physiology education. She has received teaching awards at the unit, college, and regional level, including a 2026 Outstanding Young Teacher Award from the American Society of Animal Science. The Desaulniers lab studies developmental programming of the mammalian testis, examining how perinatal insults disrupt normal gonadal development and lead to long-term fertility consequences. The overall goal of Dr. Desaulniers' USDA-funded research program is to improve livestock fertility to enhance the productivity of animal agriculture, a major economic driver in Nebraska, while also utilizing swine as biomedical models to enhance reproductive function in humans.

Notes:

Update Seminar III

Sunday, May 24 from 1:15 PM – 2:15 PM

Brian Couch

Sponsored by HAPS

Susan J. Rosowski Professor
University of Nebraska-Lincoln

"Activities and Homework as Learning Tools: Encouraging Authentic Engagement in the Age of AI"

Abstract: National reports have called for undergraduate STEM courses to adopt interactive teaching approaches, which provide structured opportunities for student learning. Despite their potential benefits, these activities can be challenging for instructors to develop and implement as well as for students to value and incorporate in their learning process. Building on a theoretical framework for formative assessment, we have conducted a variety of research projects to better understand how activity implementation characteristics influence student buy-in, utilization, and learning. We have also collected information on the barriers students face for completing out-of-class assignments and have developed instructional modules that use animated videos to help students reflect on and improve their homework strategies. Overall, this presentation aims to give instructors an operational framework for thinking about how their course activities can best support student engagement and success.

Bio: Brian A. Couch, PhD, is a Susan J. Rosowski Professor in the School of Biological Sciences at the University of Nebraska-Lincoln. He received a doctorate in Molecular Biophysics & Biochemistry from Yale University and completed postdoctoral training in biology education research at the University of Colorado-Boulder. Couch's education research focuses on how students and instructors can use assessment activities to promote learning, with a specific emphasis on understanding how students engage with formative assignments and how instructors can leverage student responses to guide their instruction. He also teaches a large-enrollment introductory cellular and molecular biology course for life sciences majors.

Notes:

Update Seminar IV

Sunday, May 24 from 4:15 PM – 5:15 PM

Timothy Cox

Sponsored by American Association for Anatomy

AMERICAN ASSOCIATION FOR ANATOMY

UM Curator's Distinguished Professor & Endowed Chair in
Dental & Mineralized Tissue Research
University of Missouri-Kansas City

"Mitigating Craniofacial Malformations through Early Gestation Dietary Modulation."

Abstract: Why do individuals carrying the same pathogenic mutation often present with markedly different craniofacial outcomes - or, in some cases, no detectable phenotype at all? This persistent variability challenges the traditional view that craniofacial malformations are determined solely by rare, high-impact genetic mutations.

Craniofacial development is orchestrated by genetic programs that establish the structural foundation of the face, yet both normal variation and disease expression reflect the interplay between genetic and epigenetic influences. While genome-wide studies have identified common variants associated with disease risk, these explain only a limited proportion of phenotypic diversity. In contrast, epigenetic factors - although more difficult to measure - are increasingly recognized as powerful modifiers of developmental outcomes, as demonstrated in twin studies and controlled animal models.

This perspective reframes a critical question: can modifiable environmental exposures influence developmental trajectories, even in genetically predisposed individuals? In this presentation, I will present evidence that targeted dietary optimization during early gestation can act as an epigenetic modulator, shaping gene expression and cellular behavior during key stages of craniofacial development. These findings support the possibility that prenatal nutritional interventions may reduce the penetrance and severity of certain malformations. However, their effectiveness may still depend on the specific pathways disrupted, underscoring the need for precise phenotyping and mechanistic insight to guide targeted prevention strategies - and ultimately, to explain why the same mutation does not always lead to the same outcome.

Bio: Dr. Cox, completed his undergraduate degrees and PhD from the University of Adelaide, before receiving a national medical research fellowship for postdoctoral training in human genomics at Baylor College of Medicine (Houston, Texas) and the Telethon Institute of Genetics in Medicine (Milan, Italy). He then returned to the University of Queensland, Australia, to pursue his interests in Developmental Biology, before receiving a national independence award to start his own group at his Alma Mater in 1997. During this time, he developed close ties with the internationally recognized Australian Craniofacial Unit to pursue his interest in craniofacial disorders. In 2004, he relocated to Monash University before relinquishing that in 2006 to become a founding member of the University of Washington's Division of Craniofacial Medicine (Seattle), where he quickly rose to full professor in Pediatrics and the Laurel Foundation Endowed Chair in Pediatric Craniofacial Research. In 2018, he was recruited to the Department of Oral and Craniofacial Sciences at the University of Missouri-Kansas City's Dental School as the Endowed Chair in Dental & Mineralized Tissue Research with a joint appointment in Pediatrics, School of Medicine. His research encompasses human genetics/genomics, extensive animal modeling with quantitative 3D phenotyping, and cell-based model systems for understanding the pathobiology of common craniofacial conditions, such as cleft lip and craniofacial microsomia. He has received numerous awards throughout his career, including, in recent years, the NT Veatch Award for Distinguished Research and Creativity from UMKC (2024), a University of Missouri System Curator's Distinguished Professorship (2025), and the Society for Craniofacial Genetics & Developmental Biology's highest honor, the David Bixler Distinguished Scientist Award (2025). He has published over 150 peer-reviewed articles and mentored and trained more than 40 undergraduates and 30 postgraduate trainees, many of the latter who have received national fellowships, awards, and gone on to hold senior research positions and/or head their own labs around the world.

Notes:

Update Seminar V

Monday, May 25 from 10:45 AM – 11:45 AM

Panel: Ron Gerrits, Jonathan Wisco, Dee Silverthorn, Kevin Patton, Tom Lehman

Sponsored by HAPS

"What to Tell Starting A&P Instructors"

Abstract: Some of us benefited from extensive advising and instruction on how to teach while we completed our graduate studies and some of us did not get as much. Once you are hired as an instructor, how do you learn to be a great teacher? We have gathered veteran educators from high school, 2-year, 4-year, and post-baccalaureate to share advice on how to gather the skills and abilities that will be expected of you. We will share thoughts on schedule building, lecture and lab format, exam rules, and whatever else our panel and our audience wishes to share. Join us for an engaging discussion.

Bio: **Ron Gerrits PhD** is a faculty member at the Milwaukee School of Engineering, where he has taught a wide variety of life-science courses. Recently, he has focused his teaching on physiology, pathophysiology, and pharmacology to perfusion graduate students. His interests include developing curriculum materials for physiology education and working with HAPS members to conduct educational research in physiology courses. Ron is a past president of HAPS.

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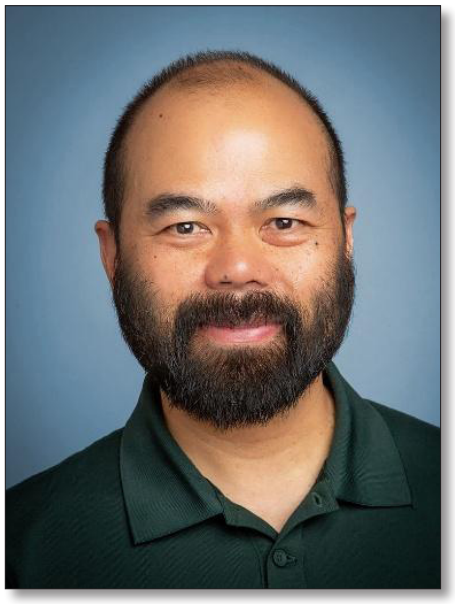

Bio: **Jonathan J. Wisco PhD** is Associate Professor at Boston University Aram V. Chobanian & Edward Avedisian School of Medicine, Department of Anatomy and Neurobiology. He is co-Director for the preclinical curriculum, Principles Integrating Science, Clinical Medicine and Equity (PISCEs); and Director of the Laboratory for Translational Anatomy of Degenerative Diseases and Developmental Disorders (TAD4). Dr. Wisco is interested in the intersection of histopathology and anatomic pathology that informs structural imaging; functional activation of the brain during active learning; and the educational scholarship of teaching and learning, notably on the topics of curriculum design, faculty development, learning tools innovation, outreach/service-learning, inclusive learning environments, and equitable access for STEMM careers.

Bio: **Dee Silverthorn PhD** is a Distinguished Teaching Professor Emerita at University of Texas-Austin, where she taught physiology and A&P to undergraduates for 30 years before becoming one of the inaugural faculty at UT-Austin's Dell Medical School. Dee was among the early adopters of active learning, response systems, and project-based student laboratory courses, and in parallel with her teaching, she mentors trainees and early-career faculty on developing teaching skills. Dee has received numerous awards for her educational work, including the American Physiological Society 9th Arthur C. Guyton Physiology Educator of the Year and the University of Texas Regents' Outstanding Teaching Award. Dee was the 2012-2013 president of HAPS and the 2022-2023 president of the American Physiological Society.

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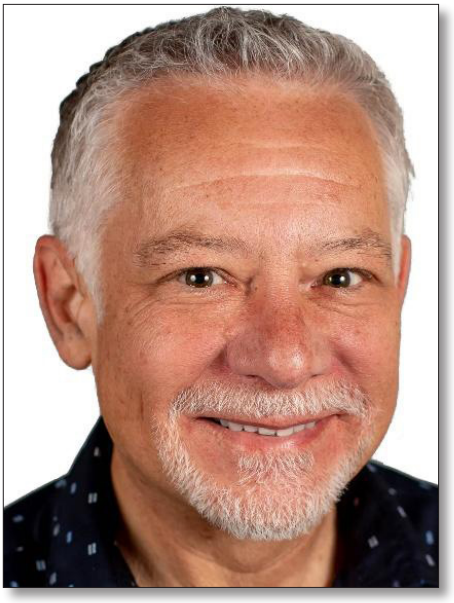

Bio: **Kevin Patton, PhD**, is a veteran anatomy and physiology professor, textbook author, and host of *The A&P Professor* podcast. With decades of experience in the classroom and creating instructional materials, Kevin specializes in translating complex concepts into engaging, accessible learning experiences. He has taught A&P at secondary, community college, and university levels—most recently in the *Human Anatomy & Physiology Instruction* master's degree program at *Northeast College of Health Sciences.* Kevin is known for blending humor, storytelling, and evidence-based teaching strategies into his professional work. He's a longtime member and President Emeritus of HAPS and is passionate about helping instructors build stronger connections with their students.

Moderator

Bio: **Tom Lehman** is a professor of anatomy and physiology at Coconino Community College in Flagstaff, Arizona. He has been teaching at 2-year colleges for over twenty-seven years in Colorado, Arizona, and Montana. As an active HAPS member since 1999, he has presented workshops on various instructional skills and topics, as well as mentored numerous part-time and full-time instructors from all over the country.

Notes:

Update Seminar VI

Monday, May 25 from 1:15 PM – 2:15 PM

Alan Detton

Sponsored by HAPS

Associate Professor of Anatomy & Neurobiology at UCI
University of California Irvine School of Medicine

"Fascia, What is it and Why Should I Care?"

Abstract: The anatomical term "fascia" has long been subject to varied definitions and interpretations across clinical, educational, and research disciplines. Despite ongoing discourse, ambiguity remains regarding which tissues qualify as fascia and how these should be categorized. To provide clarity about what is fascia, two projects from the work of the Fascia Subcommittee of the Clinical Anatomical Terminology (CAT) Committee of the American Association of Clinical Anatomists (AACA) will be discussed. The first is from a consensus project involving an extensive two-part survey aiming to assess current fascia definitions and clarify inclusion criteria for what tissues/structures should be regarded as fascia. The second will be an exploration of a paper entitled "Fascia, Eh. What Is It? What Is It Good for?" by Neumann et al. examining competing concepts from an anatomical perspective with the goal of finding a position that could lead to a consensus among anatomists, other biomedical scientists, and health practitioners with an interest in fascia. The discussion will then shift to why each of us may care about fascia covering a breadth of ideas from personal wellness and well-being, treatment and intervention considerations, and level appropriate recommendations for fascia education. It is hoped that this session will provide insight and clarity while simultaneously inspiring curiosity and uncertainty about an oft-overlooked component of ourselves, our fascia.

Bio: Dr. Alan J. Detton joined the University of California, Irvine in January as an Associate Adjunct Professor of Anatomy & Neurobiology and Director of Medical Gross Anatomy and Director of Surgical Anatomy. After receiving his Ph.D. in Anatomical Education from The Ohio State University, Dr. Detton began teaching anatomy at Stanford University and most recently concluded seven years at Columbia University's Vagelos College of Physicians and Surgeons.

Dr. Detton is the author of Grant's Dissector (16e-18e) as well as the award-winning companion series of Grant's Dissection Videos. He is currently co-authoring the next edition of Essential Clinical Anatomy (8e) and is the anatomical consulting editor of the Acland Video Atlas of Human Anatomy. Dr. Detton has additionally consulted and created content with multiple anatomical technology companies including Anatomage, BioDigital, and 3D4Medical.

Dr. Detton is the Fascia Subcommittee Chair of Clinical Anatomical Terminology (CAT) Committee and serves on Council for the American Association of Clinical Anatomists (AACA). His research and work with fascia include instruction at the Winter Fascia School in Padova, Italy, as well as summer fascia schools held at McGill University in Montreal, Canada and Colorado Springs, USA. He has been an invited speaker for Myofascial Ultrasound Imaging Courses in Padova, and Washington DC, and now at the 2026 HAPS Annual Conference in Kansas City.

Notes:

Update Seminar VII

Monday, May 25 from 3:15 PM – 4:15 PM

Panel: Kathy Burleson, Anya Goldina, Juanita Jellyman, Soma Mukhopadhyay

Sponsored by HAPS

"Ignite your Insight: Join us for an Engaging and Supportive Conversation"

Abstract: Join us for an interactive mentoring session designed to spark conversation, connection, and collaboration.

This informal, drop-in style event will feature multiple simultaneous mini-sessions focused on topics such as navigating the tenure process, building and sustaining a research program, developing new courses, balancing teaching and scholarship, and more. You're free to move between groups and participate in as many discussions as you'd like — follow your curiosity and your career goals.

Each mini-session will bring together HAPSters with shared interests and valuable experience who are eager to exchange ideas, offer guidance, and learn from you as well. Whether you are brand new to HAPS and A&P teaching or a seasoned educator, this is a welcoming space to ask questions, share insights, and build meaningful professional relationships.

Come ready to connect, contribute, and grow within the HAPS community.

Bio: **Kathy Burleson, PhD** is a Senior Lecturer of Biology and a Public Health Faculty Affiliate at Hamline University in St. Paul, Minnesota. Kathy's teaching, service, and research explore the intersection of science and society, with a focus on inclusive pedagogy and diversifying STEM. She established the HAPS Diversity, Equity, and Inclusion (DEI) Committee and is currently serving as Central Region Director.

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Bio: **Anya Goldina, PhD** is an associate professor at Elizabethtown College, in Elizabethtown, PA. She teaches undergraduate courses in Human Anatomy and Physiology (for science and non-science majors), Behavioral Endocrinology, Physiology, and Advanced Anatomy, as well as a graduate Anatomy course for students in the Physician Assistant program. In all her courses, Anya emphasizes the integration of humanities and the sciences. She develops curricula that are engaging, challenging, and encourage students to recognize the inextricable connections between science and society; past, present, and future.

Bio: **Juanita Jellyman, PhD** is a Professor and Associate Chair of Biological Sciences at California State Polytechnic University, Pomona. She teaches undergraduate courses in human physiology, systems physiology, reproductive physiology, and endocrinology, along with a graduate seminar on the developmental origins of health and disease. Her teaching emphasizes active, inclusive learning strategies that help students master complex physiological concepts. Dr. Jellyman's research focuses on maternal and fetal physiology, particularly how the intrauterine environment shapes long-term offspring health. She is also committed to mentoring undergraduate and master's students in research.

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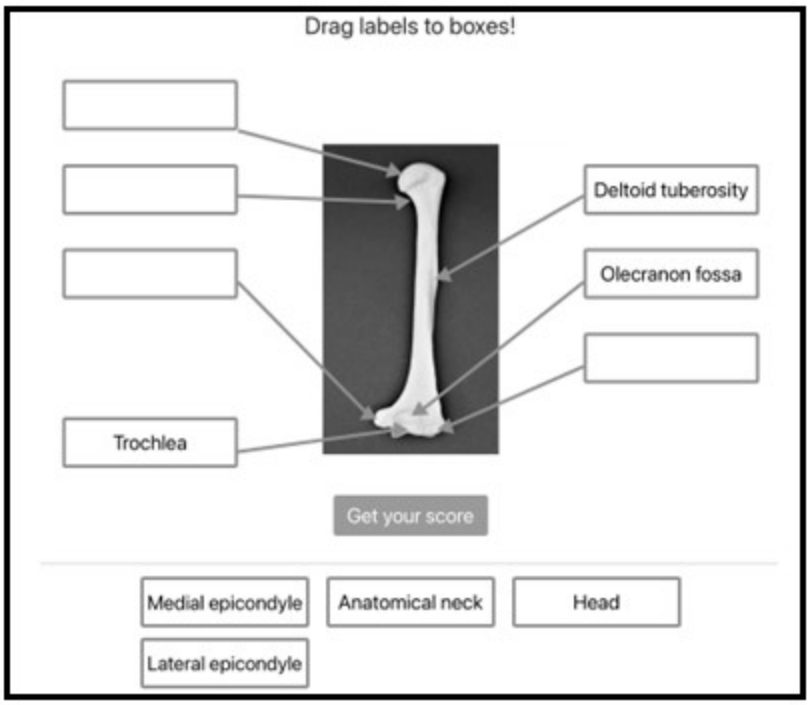
Bio: **Soma Mukhopadhyay, PhD** is an Assistant Professor at Augusta University, Augusta, Georgia. She has been teaching for more than a quarter of a century and received five teaching awards. She teaches Anatomy and Physiology, Histology and Scientific Inquiry and Critical Thinking courses and leads Study Abroad courses. She is actively involved in mentoring undergraduate students in research. Her current pedagogical research focuses on the development of Multimedia Resources, Infographics for Active Learning and Metacognition. Her passion includes painting, poetry – reading and writing, photography and music.

Notes:

Tutoring is included in this app to meet the needs of all community college students!!

Anatomy Karma Skeletal System

free download from AppStore with in-app purchases



Scan the code below to see a demo video of quiz, mini-practical, and in-app tutoring features.

Scan the code below for the inventory of bones and surface markings

HAPS Committee Posters

You can find these at the membership experience booth throughout Sunday and Monday.

Getting to Know Conferences Committee!!!
Beth Eischen, Hamilton College, beischen@hamilton.edu

The Conferences Committee's mission is to enhance HAPS members' experiences at regional and annual conferences by reimagining what these events should offer to meet evolving membership needs. This mission will be achieved through three primary goals, each overseen by a subcommittee: 1) developing policies and procedures for planning and hosting both in person and virtual meetings, 2) supporting hosts and organizers by providing access to valuable resources, and 3) reviewing and approving conference applications for submission to the Board of Directors. We invite you stop by the Conferences Committee poster to learn more about ways you can get involved!!

Getting to Know ComCom of HAPS
Caitlin Burns Kim, County College of Morris, cburnskim@ccm.edu

Co-Authors: Burhan Gharaibeh, University of Pittsburgh, burhan@pitt.edu, Shannon Kispert, Webster University, shannonkispert@webster.edu, Soma Mukhopadhyay, Augusta University, soma.mukhopadhyay.08@gmail.com

The Communications Committee (ComCom) is committed to promote activities of HAPS through multiple platforms of engagement. ComCom continues to collaborate with other HAPS committees and the Board of Directors to effectively increase communication in telling the story and sharing updates of HAPS. ComCom members actively participate in website review, social media content creation, and the HAPS blog. This poster is an effort to highlight the committee's work and opportunities for involvement!

Powering HAPS: Committees That Support and Strengthen A&P Education
Chasity O'Malley, Wright State University Boonshoft School of Medicine, comalley@hapsconnect.org

The Human Anatomy and Physiology Society (HAPS) offers committees that advance the organization's mission and support A&P educators at all levels. This poster highlights the goals, initiatives, and current projects of the following committees: Diversity, Equity, and Inclusion; Anatomical Donor Stewardship; Conferences; Curriculum and Instruction; Fundraising; Awards and Scholarships; Welcoming and Belonging; the HAPS Educator; and the Exam Program. Committee involvement provides meaningful opportunities to contribute to the profession, build leadership skills, expand professional networks, and support fellow educators. Attendees will learn how to get involved and where to find additional information through the HAPS website and at the conference.

Hot TIPS for Teaching: Practical, Peer-Reviewed, and Portfolio-Ready
Colleen Garnett, University of Alabama at Birmingham, cb28@uab.edu

Since 2003, HAPS members have shared effective teaching strategies to support instruction and learning in anatomy and physiology. These contributions have recently been rebranded as HAPS Teaching Insights and Practical Strategies (TIPS). TIPS now consist of peer-reviewed learning activities that include an instructor's guide and an accompanying formative assessment. These classroom-ready materials represent a significant benefit for all HAPS members. By submitting a TIPS activity, you not only contribute valuable resources to the HAPS community but you also generate citable scholarly work that can be included in your teaching portfolio and curriculum vitae.

Lasting Gratitude: Honoring Human Body Donors with Permanent Markers of Respect
Danielle Edwards, University of Louisville School of Medicine, dnedwa03@louisville.edu

Co-Authors: Rhiannon Robinson, Boston University Chobanian & Avedisian School of Medicine, Boston, MA, rerbnsn@bu.edu, Jeremy Grachan, Rutgers New Jersey Medical School, Newark, NJ, jg1916@njms.rutgers.edu, Kelsey Stevens, Briar Cliff University, Sioux City, IA, Kelsey.Stevens@briarcliff.edu, Lacy Cleveland, Colorado Christian University, Lakewood, CO, lcleveland@ccu.edu, Nicole Geske, Michigan State University, East Lansing, MI, geskenic@msu.edu, Burhan Gharaibeh, University of Pittsburgh, Pittsburgh, PA, Burhan@pitt.edu, Anya Goldina, Elizabethtown College, Elizabethtown, PA, anya.goldina@gmail.com, Jill Kirby, Lipscomb University, Nashville, TN, jmkirby1@lipscomb.edu, Jacqueline Phillips, Drexel University, Philadelphia, PA, jp3959@drexel.edu, Leslie Sewell, The Ohio State University College of Medicine, Columbus, OH, Leslie.Sewell@osumc.edu, J.P. Swigart, Carle Illinois College of Medicine, Urbana, IL, swigart@illinois.edu, Melissa Thompson, Louisiana State University, Baton Rouge, LA, melissathompson@lsu.edu, Trisha Waldman, University of Mary, Bismarck, ND, trisha.waldman@stmary.edu, Jonathan Wisco, Boston University Chobanian & Avedisian School of Medicine, Boston, MA, jjwisco@bu.edu, Bobbie Leeper, Seton Hill University, Greensburg, PA, bleeper@setonhill.edu

The gift of human body donation offers students hands-on anatomy experiences and plays a critical role in fostering professional skills, ethical awareness, and empathy. This gift can be memorialized through a ceremony or a permanent marker. Institutional markers, such as a physical space (e.g., garden), a website, or an item (e.g., plaque or bench) on or near campus that all can interact with, offer a more open and permanent tribute. To aid anatomy educators in the creation of memorials, the Anatomical Donor Stewardship (ADS) Ethics subcommittee provides ideas, considerations, and current examples of various tribute markers in this poster.

Unlock Benefits, Build Skills, Make an Impact! Join the HAPS Anatomical Donor Stewardship Coaching Support Team
Danielle Edwards, University of Louisville School of Medicine, dnedwa03@louisville.edu

Co-Authors: Jeremy Grachan, Rutgers New Jersey Medical School, jg1916@njms.rutgers.edu, Kelsey Stevens, Briar Cliff University, kelsey.stevens@briarcliff.edu, Bobbie Leeper, Seton Hill University, bleeper@setonhill.edu, Rhiannon Robinson, Boston University Aram V. Chobanian & Edward Avedisian School of Medicine, rerbnsn@bu.edu, Jonathan Wisco, Boston University Aram V. Chobanian & Edward Avedisian School of Medicine, jjwisco@bu.edu , Lisa Trevino, UT San Antonio, Department of Biology, Health and the Environment, lisa.trevino@utsa.edu, Molly Ostwald, Arapahoe Community College, molly.ostwald@arapahoe.edu

The HAPS ADS Support Team is a coaching based program connecting Coaches (experts in the field) and Coachees in human dissection techniques, lab design, embalming techniques, and ethics of human donors. The program aims to provide not only skills, but confidence, networking opportunities, and outside resources to members in a welcoming environment. As a member of the ADS Support Team, you have the opportunity to access an additional travel award to further your professional development and skills in the gross anatomy laboratory. Hear from Coaches and Coachees in the program and to learn more about the ADS Travel Award.

The Core Concepts of Anatomy & Physiology
James Clark, Scientific Health: Education and Human Performance, james.clark@scientific-health.org

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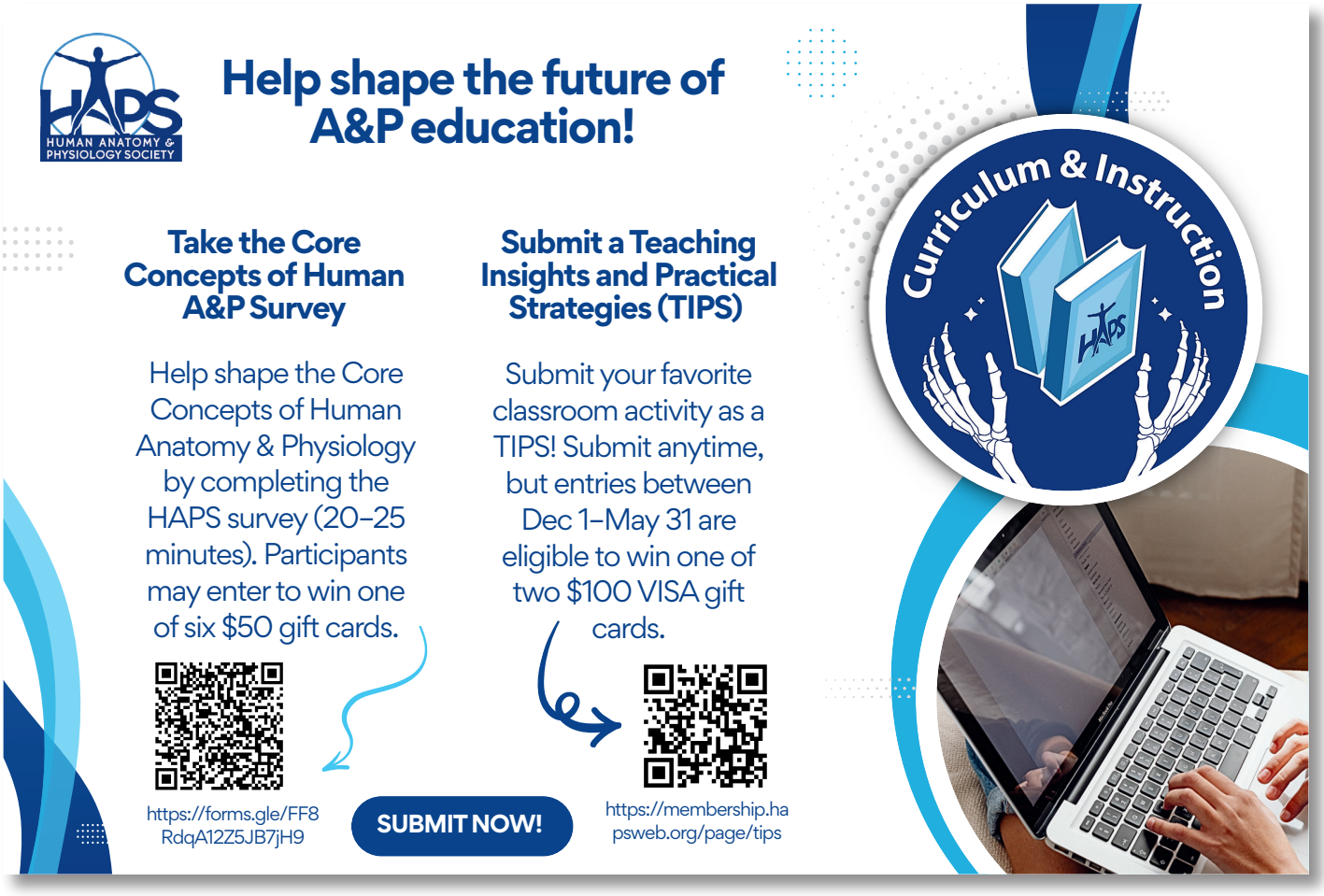
In October 2024, the HAPS Curriculum & Instruction committee began developing a proposed list of central themes for A&P. Over the 2024-2025 academic year, the Goals and Guidelines subcommittee refined this list into the core concepts, developed into 4 key domains and 15 subdomains. The proposed core concepts list was then sent (via a survey) to HAPS members and other A & P educators to solicit feedback. This poster will summarize early survey responses, present the core concepts for further feedback, and give HAPS members the opportunity to discuss the project with subcommittee members.

The HAPS Diversity, Equity, and Inclusion Committee: A Community for YOU!

Jennifer Stokes, Southwestern University, jstokes@hapsconnect.org

The Diversity, Equity, and Inclusion (DEI) committee is a community of educators committed to creating spaces of belonging and accessibility for all, through embracing diversity and promoting equity and inclusion. To support this we produce and promote professional development opportunities, share evidence-based A&P teaching resources, and advocate for and ensure inclusive practices within the organization and at HAPS events. We invite you to stop by the DEI committee poster to learn more about our community and opportunities for involvement!



Poster Presentation Abstracts

Session 1: Sunday, May 24, from 10:00 am – 11:00 am

Poster 1:

Using Concept Mapping as a Collaborative Tool to Affect Metacognition in the A&P Classroom: Year 2

Gillian Backus, Northern Virginia Community College, gbackus@nvcc.edu

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Community College Anatomy and Physiology (A&P) is a rigorous course with high failure rates (Higgins-Optiz, 2014). Students who are actively engaged in A&P are more likely to succeed (Vitali et. Al, 2020). Northern Virginia Community College A&P students were introduced to concept mapping and a collaborative whiteboard freely available through the school's learning management system (CANVAS). Students used the electronic whiteboard to build and comment on concept maps. Students were surveyed at the beginning and end of the semester to collect information on learning attitudes. These tools were effective in promoting changes in student metacognition.

Poster 2:

You're Invited to the 2026 HAPS Southern Regional Conference

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Please save the date for the 2026 HAPS Southern Regional Conference at the University of Mississippi on November 14, 2026. In addition to workshops, update speakers, and posters, we invite you to the Duff Center for Science and Technology Innovation where you can try teaching in a Technology Enhanced Active Learning (TEAL) classroom, take tours of the building and teaching laboratories, review lab safety to prevent the worst from happening, and to communicate your challenges, solutions, and proudest teaching memories by writing on our walls! Harry, our 20' tall inflatable skeleton will also be available for selfies.

Poster 3:

BioMed Focus: A Summer Research Internship Program for High School Students

Kathryn Buscher, University of Michigan, kbuscher@umich.edu

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The BioMed Focus summer program engages Ann Arbor–area high school students in an 8-week research internship at the University of Michigan focused on physiology-related biomedical research. Scholars work in medical campus laboratories, gaining hands-on experience with hypothesis-driven projects that explore normal and disease-related physiological processes. The program's goals are to build foundational understanding of human biology, develop scientific reasoning skills, and increase confidence in research and science communication. Outcomes include improved knowledge of physiological-concepts, enhanced presentation skills, and early scientific output, including conference presentations and co-authorships.

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Poster 4:

Barriers to Equitable Engagement in Out-of-Class Physiology Study Groups

Natalia Caporale, University of California, Davis, ncaporale@ucdavis.edu

Participating in study groups is widely promoted to support STEM success, yet little research examines how undergraduates (especially those from marginalized communities) form, join, and experience these groups. We conducted a mixed-methods study in a physiology course across three terms, and hereby report findings from the first term (n=284). Only 40% of students routinely joined study groups, with transfer students being 1.5 times more likely to participate than freshmen-entrants. Logistic regression identified gender, low-income, and international status as predictors of participation. PEER and self-identified female students reported significantly higher odds of discrimination. We share reported barriers, motivators, and student recommendations.

Poster 5:

Horseshoe Kidney: A case study

Mark Cook, University of Minnesota, cookx072@umn.edu

Horseshoe Kidney is the most common congenital abnormality of the upper urinary tract, affecting approximately 1 in 500 individuals. Although many cases are asymptomatic, this anomaly can lead to complications including ureteropelvic junction obstruction, recurrent UTIs, vesicoureteral reflux, hydronephrosis and impaired urinary drainage. It is typically associated with vascular, rotational, and positional anatomical abnormalities, typically resulting in a U-shaped unitary renal unit configuration in the mid-abdomen, positioned lower in position than normal kidneys. This case study describes the blood supply, venous drainage and ureteral anatomy of a horseshoe kidney discovered during routine dissection of an 81-year-old male cadaver.

Poster 6:

Artificial Intelligence (AI) in Active Learning and Assessment at Various Curricular Levels of Global Health Sciences and STEM: Analysis of Key Benefits and Challenges

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HAPS Conference Travel Award Winner

Today's all-pervasive Artificial intelligence (AI) necessitates evaluating its post-COVID-19 implications for STEM and health-science education. This study aimed at encapsulating evidence-based roles of AI in fostering active learning and assessment within these experiential disciplines among developed countries versus developing/underprivileged communities. An extensive scoping review of 50 recent, refereed journal-publications was conducted. AI's benefits range from gamified platforms and adaptive tutoring tools at K-12, AI-powered undergraduate laboratories, and predictive analytics for graduate/postgraduate training, to AI-enhanced grading/feedback tools. Challenges include disparate global access, risk of bias, and constant instructor supervision. AI should complement, not replace, educators through culturally responsive and ethical application.

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Poster 8:

Progressive, cooperative concept mapping in a Saturday session of community college AP1: impacts on student learning

Beth Eischen, Hamilton College, beischen@hamilton.edu

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Concept mapping and cooperative learning are proven methods of active learning that increase student understanding and engagement. Combining team-based learning with EBIPs, including concept mapping, in a progressive round robin style circuit has been used to determine impact on student learning. Students are guided through these exercises to break up core concepts that progress through stages and used in a single day AP1 curriculum. Students are asked to reflect on how the activities impacted their study habits, understanding, feelings of engagement and working in a team on outcomes after each exam.

Poster 9:

Further investigation into collaborative guided inquiry: Modernizing group activities

Youlonda FitzGerald, Texas Woman's University, yfitzgerald@twu.edu

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This longitudinal perspective uses new data to expound on previous study seeking to analyze differences in A&P I lecture course outcomes before and after the introduction of group activities that employ collaborative guided inquiry. While previous work using one semester of data showed significant outcomes of self-efficacy markers among students, quantitative analysis with limited data did not suggest higher outcomes on student assessments due to addition of these activities. The authors hypothesize that with a larger data set over a longer span of time, statistical significance may emerge, and seek to explore these outcomes.

Poster 10:

Evaluating factors that may impact student performance in an undergraduate anatomy and physiology course

Michele Holcombe, Purdue University, mholcom@purdue.edu

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Undergraduate Anatomy and Physiology is a rigorous course taken by a diverse student population to fulfill curricular or career preparation requirements at different stages of their undergraduate education. We have an incomplete understanding of which demographic factors influence student performance and how the intersection of these factors may contribute to differential outcomes on summative assessments. We used mixed linear regression models to examine the relationship between student demographics and performance on multiple choice questions of varying cognitive demand and topic. Results from this study may promote development of ancillary curriculum and discussions curricular sequencing and prerequisites to better support students.

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Poster 11:

Multimedia Learning Object on Negative Feedback Regulation of Hypothalamic–Pituitary Hormones

Juanita Jellyman, California State Polytechnic University, Pomona, jkjellyman@cpp.edu

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This Multimedia Learning Object (MMLO) is designed to support undergraduate anatomy and physiology learners in mastering negative-feedback regulation of hormone secretion by the hypothalamus and pituitary gland. It combines concise background content, guided animations of feedback loops, and active-learning exercises—including acronym practice for commonly used hormones (e.g., TRH, TSH, ACTH, GH). By integrating visual, textual, and interactive elements, the MMLO aims to improve conceptual understanding of endocrine feedback mechanisms, reinforce accurate recall of hormone nomenclature, and provide a reusable, accessible resource for instructors and students.

Poster 12:

Dissection lab with Photographic educational aids of the cadavers

Pil-Woo Kim, Augusta University, pikim@augusta.edu

Through the dissection lab, the students learn not only human anatomy but also the variations of human body. Either class dissection or prosection cadaver study, the students are struggled with orientation. For the solving the problem, the class added the photographic pictures with the class dissection and the labels with reference atlas pictures. Compare to the traditional anatomy education. Student outcome in the score is better and retention rate is increased. The students are more active in the open lab. It showed the better outcome in the student performance. This study helps to find effective way of anatomy lab education.

Poster 13:

Creation of an Anatomical Model Atlas

Mikayla Leighton, Fort Lewis College, mmleighton@fortlewis.edu

This study aims to create an effective anatomical model key atlas for Fort Lewis College students. The current company provided keys are rarely used as a learning tool and were identified to have multiple errors. This study will quantify the errors and create a digital resource for students. The goals of the new tool is to decrease cognitive load, increase access, and correct errors. This study creates a helpful resource for faculty and students at Fort Lewis and provides an informational analysis of anatomical model keys.

Poster 14:

Student success in accelerated Anatomy & Physiology courses

Heather Lemko, Howard Community College, hlemko@howardcc.edu

Co-Authors: Sandra Clabough, Howard Community College, sclabough@howardcc.edu

Howard Community College recently launched an initiative to convert specific high-enrollment courses from the college's standard 15-week semester to 7-week sessions. This change was instituted based on the success of this format at the other colleges in the US. In the Fall 2025 semester a subset of A&P I and A&P II sections were run in the 7-week format alongside the standard 15-week classes. This study compares the student outcomes between 7-week and 15-week classes. The advantages and challenges of offering 7-week A&P courses are also discussed from both student and faculty perspectives.

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Poster 15:

Comfort Before Content: The Effects of Early Exposure to Donors on Undergraduate Student Comfort and Exam Performance

Eva Mannino, Indiana University School of Medicine – Bloomington, emannino@iu.edu

Co-Authors: Stacey Dunham, Department of Anatomy, Cell Biology & Physiology, Indiana University School of Medicine, dunhams@iu.edu

Student performance on practical examination questions involving donors in an undergraduate introductory anatomy course has been observed to be lower than performance on questions using plastic models. To address this, a curricular change was implemented in which students were introduced to course donors in a series of observation-focused laboratory sessions before the donors were included in instructional content. This study evaluates whether structured early donor exposure improves student comfort and donor-based practical examination performance through analysis of survey responses and exam outcomes before and after the curricular change.

Poster 16:

Free, cloud-based computing and collaboration platforms for creating and sharing 3D digital morphology collections in the classroom

Christopher Noto, University of Wisconsin-Parkside, noto@uwp.edu

I will describe two free platforms aimed at educators or researchers interested in digital morphology but lacking the necessary computing infrastructure at their institutions. One provides on-demand cloud-computing with pre-installed open-source software ideal for computationally heavy digital morphology tasks, all accessible through a web browser. The other allows anyone to create public repositories of 3D scans with segmentations and terminology. Users can create, search, download, and contribute updates easily through an integrated extension. These tools facilitate remote collaborations and enhances 3D rendering documentation, fosters group comparative projects, and promotes incorporating digital morphology into classroom settings in a structured manner.

Poster 17:

Exploring the Correlation Between Catecholaminergic Activity in the Cervical Vagus Nerve and signs of Cardiac Remodeling: Implication for Vagus Nerve Stimulation therapy

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"Catecholaminergic fibers (CF) within the cervical vagus nerve (VN) challenge its parasympathetic characterization. Cardiac remodeling (CR), characterized by myocardial connective tissue (CT) accumulation, leads to ventricular dysfunction and heart failure. This study explored the correlation between CF quantity within the cervical VN and indicators of CR. Cervical VN samples from 20 cadavers (10 male, 10 female) were stained with Luxol fast blue and anti-tyrosine hydroxylase (TH) to assess TH-reactivity, and myocardium was stained with trichrome to evaluate interstitial CT. Quantitative analysis was performed and statistical analysis is ongoing. Understanding catecholaminergic involvement may help optimize vagus nerve stimulation therapy (VNS)."

Poster 18:

Neurovascular Physiology of Penile Erection: Translating Mechanistic Insights into Therapeutic Frontiers

Ojas Vijayanand Potdar, Grant Government Medical College and JJ group of Hospitals Mumbai Maharashtra India, ojaspotdar@yahoo.com

Penile erection is a finely coordinated neurovascular process involving endothelial nitric oxide release, autonomic regulation, and smooth-muscle relaxation. This prospective study of 120 men with erectile dysfunction assessed endothelial nitric oxide synthase (eNOS) activity, penile Doppler indices, and autonomic reflex latency pre- and post-intervention. Mean eNOS activity improved from 52 ± 11 to 78 ± 9 µmol/min ($p < 0.001$), with enhanced flow and rigidity correlating strongly ($r = 0.78$). Ninety-two percent achieved satisfactory function. Integrating physiological assessment into urological therapy enhances diagnostic precision and predicts recovery, bridging physiology and clinical urology.

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Poster 19:

Thinking About Thinking (and Hormones): Bridging Metacognition and the Hypothalamo-Hypophyseal Axis

Emily Reedy, University of North Georgia, EBREED4462@ung.edu

Co-Authors: Josephine Thompson, University of North Georgia, jythom1511@ung.edu

We are challenged in our roles as peer educators at UNG to develop creative group learning activities that encourage anatomy and physiology students to build their metacognitive skills as they master course content. In this presentation, we will (1) summarize the current literature outlining the impacts of collaborative learning and the importance of students moving beyond rote memorization, and (2) outline and explain a learning activity that we created to help students better understand the structure and function of the hypothalamo-hypophyseal axis.

Poster 20:

Case Study Assignments Utilizing A.I. as a Learning Resource.

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Artificial Intelligence (A.I.) and large language models are increasingly being investigated as helpful tools for anatomy and medical education. We explored using A.I. tools on A&P specific case study assignments and found 65% or our students felt A.I., "helped me learn the material we were covering in lecture" and concurrently 89% disagreed, "A.I. made it harder to learn" the material. Not surprisingly, 92% "Enjoyed using A.I.", while 72 and 71% felt A.I. "reduced workload" and "reduced the amount of time needed" respectively. Most, 82%, felt A.I. "got easier with use" and 89% disagreed using A.I. "made the assignment harder".

Poster 21:

Learning Focused or Completion Focused? Reflective Modules Provide Insight on Student Homework Approaches in Undergraduate Biology

Steven Semadeni, University of Nebraska-Lincoln, ssemadeni2@unl.edu

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College courses rely heavily on out-of-class homework assignments to facilitate learning. Given limited time and competing responsibilities, students may shift between a "learning focus" that prioritizes meaningful engagement and a "completion focus" that prioritizes rapid completion. We developed online learning modules that helped students reflect on their homework approaches. Analyzing 1,962 open-ended responses provided insights into a variety of homework behaviors and aspirations. Cluster analysis revealed four main approaches; "fully learning," "mostly learning," "mixed," and "mostly completion." Overall, this learning module approach provides a promising avenue for instructors who want to understand and support their students' approaches to out-of-class homework.

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Poster 22:

Cooperative Learning and Student Growth in Anatomy and Physiology Laboratories: Investigating the Impact of the Jigsaw Method

Mary Sexton, Roane State Community College, sextonma1@roanestate.edu

HAPS Conference Travel Award

Students in Anatomy and Physiology must master extensive content while also developing professional skills essential for healthcare careers, including communication, teamwork, and peer teaching. This study examined the use of cooperative learning in Anatomy and Physiology I laboratory courses to support these goals. In this approach, students worked in interdependent teams, became content "experts," and taught their peers, promoting accountability, engagement, and collaboration. Implemented throughout the semester, Jigsaw activities fostered a more inclusive, student-centered learning environment. Consistent with prior research, students reported increased confidence, stronger peer connections, and higher engagement, highlighting the value of cooperative learning in STEM education.

Session 2: Sunday, May 24, from 2:15 pm – 3:15 pm

Poster 23:

What a Wonderful Learning World: Implementing Inclusive Practices into A&P

Cristy Tower-Gilchrist, Emory University, Nell Hodgson Woodruff School of Nursing, cristy.tower-gilchrist@emory.edu

HAPS Conference Travel Award Winner

Anatomy and physiology (A&P) courses are required for many health professional programs including nursing, physician assistant, and physical therapy; and are often deemed rigorous, content-heavy courses. We do not all think and learn the same. Therefore, it is important to create inclusive learning environments that encompass the diversity of students enrolled in these courses. Studies show that active learning tools improve students' academic success. Providing students with increased opportunities for intentional practice of content within the classroom can lead to equitable learning experiences. This project will focus on inclusive learning strategies and how to implement activities within A&P.

Poster 24:

Use of Debate to Experience Critical Thinking in an Exercise Physiology Course

Aaron Bunker, Morningside University, bunkera@morningside.edu

This poster outlines a debate project used in an exercise physiology course that allows students to use critical thinking from the project's inception to debate itself. The debate is over what type of athlete is the most physically fit. Students work in teams to choose an athlete type to defend as being the most "physically fit" during the debate. Students must support their claims using basic textbook knowledge learned during the semester along with primary literature. The debate is formally structured and contains the following: opening statements, cross examinations, closing arguments, and questions from the audience.

Poster 25:

Is Your A&P Course Equivalent to my A&P Course?

Carol Britson, University of Mississippi, cbritson@olemiss.edu

How do you make determinations about transfer credits for human A&P courses when A&P can be taught in so many different ways and at different levels? What happens when students transfer separate lecture and lab credits but your course combines lecture and lab? What about credits when the students' institution offers separate anatomy and physiology courses rather than a combined A&P course? Do prereqs matter when transferring credits? How are student athletes affected by A&P transfer equivalencies. Using HAPS course goals and learning outcomes is an effective mechanism to build transparency in the equivalency determination process and answer these questions.

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Poster 26:

Pathway to Understanding: Visualizing Cardiac Conduction Disorders

Camilo Castiblanco, University of North Georgia, ccast9840@ung.edu

This poster explores the correlation between cardiac conduction disorders and underlying anatomical and physiological mechanisms. including conditions such as heart blocks, atrial fibrillation, arrhythmias, and bundle branch blocks. By examining how disruptions in normal electrical pathways affect cardiac rhythm, the poster aims to clarify complex concepts in cardiovascular physiology. The presentation is designed to serve as an educational resource that faculty can incorporate into their classrooms, providing clear explanations and visual tools to enhance student understanding of cardiac conduction abnormalities and their clinical relevance.

Poster 27:

Integration of Authentic Assessment to Enhance Critical Thinking and Improve Student Engagement

Sandra Clabough, Howard Community College, sclabough@howardcc.edu

Co-Authors: Heather Lemko, Howard Community College, hlemko@howardcc.edu

Undergraduate anatomy and physiology courses are foundational to health science education, but often characterized by high cognitive load and an emphasis on memorization. Authentic Assessment principles, as described by McTighe, et al, are designed to improve critical thinking while fostering creativity, communication and collaboration. This study examines the integration of authentic assessment into undergraduate anatomy and physiology classes. To enhance students' understanding of muscle actions and the application of anatomical terminology, students composed step-by-step instructional guides for moving into assigned body positions commonly used in clinical situations. This approach encouraged translating theoretical knowledge into practical, movement-based explanations.

Poster 28:

An Updated Survey of Skeletal System Coverage in Undergraduate Anatomy and Physiology Courses in the US and Canada

Cristin Dixon, Indiana University School of Medicine-Bloomington, cridixon@iu.edu

Co-Authors: Alejandra Romero, Indiana University School of Medicine-Bloomington, aleromer@iu.edu, Asmita Aryal, Indiana University School of Medicine-Bloomington, aryala@iu.edu, Valerie O'Loughlin, Indiana University School of Medicine-Bloomington, vdean@iu.edu

Undergraduate human anatomy and physiology (A&P) courses are foundational for most healthcare programs, yet the content covered in these courses is highly variable. A survey was developed by Aryal et al. (2022) to assess skeletal system content coverage in stand-alone human anatomy (HA) and combined A&P courses. We created an updated survey to collect post-pandemic data for comparison. The updated survey focuses solely on US and Canadian schools to account for differences in how undergraduate A&P is taught throughout the globe. This poster serves as a platform to recruit US and Canadian instructors to complete our survey.

Poster 29:

Grief in the Anatomy and Physiology Classroom

K Emma Emanuel, St Thomas Aquinas College, kemanuel@stac.edu

Co-Authors: **Dahiana Garcia-Atuesta, St Thomas Aquinas College, dgarciaa23@stac.edu**

Up to 25–30% of college students experience the death of a family member or close friend in a given year, and research indicates that academic performance often declines during the semester of a significant loss. Despite this, little research examines how content in undergraduate Anatomy and Physiology (non-cadaver) courses may activate or intensify grief. This exploratory survey investigates whether discussing diseases in the course functions as grief triggers. Preliminary findings explore emotional responses, concentration difficulties, and perceived academic impacts. Results will inform the development of a larger, multi-institutional study to address this gap and guide grief-informed inclusion and pedagogy.

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Poster 30:

Implementation of Concept Maps in Cooperative Learning and the Impact on Students' Sense of Belonging

Jennifer Evens, St. Cloud Technical & Community College, jevens@sctcc.edu

Co-Authors: Kamie K. Stack, Bishop's University, kstack@ubishops.ca

This study examined how cooperative concept maps influenced students' sense of belonging and academic achievement in a community college A&P course. This Evidence Based Instructional Practice (EBIP) engaged students by enabling them to build, link, and evaluate anatomical and physiological relationships. By working both individually and in groups, students discussed, reinforced, and applied their understanding of body systems. Student perspectives and data collected suggest this cooperative learning strategy enhanced academic performance while fostering a stronger sense of belonging, promoting engagement and learning in an introductory A&P course. This research was supported through NSF DUE 2111119.

Poster 31:

Teaching Immune Mechanisms Through Play: Development of the "Prodidio" Instructional Card Game

Brandon Flom, Indiana University, bflom@iu.edu

Prodidio is a metaphor-driven instructional card game designed to support learning of immunology within an undergraduate Immuno-Anatomy course. Each card rank represents a core immune component, and gameplay reinforces mechanistic interactions through scenario-based "pathogen" events aligned with course content. The game integrates active learning and metaphor-based reasoning to help students connect innate and adaptive immune processes. This poster describes the design rationale, implementation in a classroom setting, and planned evaluation methods using exam performance and student responses. ProDidio illustrates how low-cost, adaptable game-based tools can be incorporated into anatomy and physiology education to promote engagement and conceptual understanding.

Poster 32:

3D Printing to Combat Neurophobia: Utilizing Physical Models to Teach the Spinothalamic Tract

Colleen Garnett, University of Alabama at Birmingham, cb28@uab.edu

Co-Authors: David Resuehr, University of Alabama at Birmingham, resuehr@uab.edu

Neuroanatomy is a historically challenging subject, contributing to the phenomenon of "neurophobia." Concepts such as tracing sensory information from the periphery to the cortex frequently require multiple instructional approaches. We developed a 3D-printed model of the spinothalamic tract using flashing lights and clear wiring to visualize the path of pain and temperature signals through the spinal cord, brainstem, thalamus, and cortex. The model also demonstrates a hemi-cord lesion and resulting Brown-Sequard syndrome. Ultimately, this illuminated 3D model transforms an abstract neuroanatomical pathway into a tangible experience, helping diminish neurophobia by letting students see the nervous system in action.

Poster 33:

From Theory to Practice: Using Situational Leadership Theory to Support Development in Anatomy & Physiology Laboratory Graduate Teaching Assistants

Abigail Johnson, Georgia Southern University, abijohnson96@gmail.com

HAPS Conference Travel Award Winner

Supervising diverse teaching assistants (TAs) in anatomy and physiology labs requires adaptive approaches. This reflective analysis applies Situational Leadership Theory (SLT) to match supervisory style to individual TA developmental needs. SLT proposes four leadership styles aligned with follower readiness, based on competence and commitment. Multiple data sources were analyzed, including student evaluations, TA teaching evaluations, lab exam scores, email communications, and observation notes. TAs were categorized by readiness level, revealing observable patterns across data sources. Systematic application of SLT enables efficient, individualized TA supervision. This reflective analysis demonstrates how leadership theory can inform evidence-based practice in A&P laboratory teaching.

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Poster 35:

Terminology Workshop Can Help Incoming Anatomy Students Analyze Unfamiliar Terms

Stephanie MacKinnon, Albany Medical College, mackinst@amc.edu

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Many terms in the health sciences are derived from Latin and Greek, but classical language knowledge has diminished in the U.S. Understanding word morphology can enhance vocabulary and comprehension skills, and provide students with a framework for understanding new terms. A workshop focusing on interpreting classical language-based anatomy terminology using etymology and morphology was offered to incoming physician assistant students before their anatomy curriculum began, to help build the skills necessary to decode unfamiliar terms. Pre-test, post-test, and course grades were used to assess efficacy of the workshop. Post-test scores were significantly higher than pre-test scores in the preliminary data.

Poster 36:

Generative AI and instructional design in a flipped anatomy and physiology classroom

David Murray-Stoker, Clayton State University, DavidMurray-Stoker@clayton.edu

Sam Drogo Technology in the Classroom Award Winner

I present a pedagogical workflow for designing activities for a flipped anatomy and physiology classroom. Using generative AI to assist instructional design, activities are aligned to learning objectives and scaffolded by Bloom's taxonomy. Activities vary in format (individual, pairs, small groups, whole) and require minimal preparation, generating a bank of 7-15 potential activities for each lecture. Student performance on pre-class quizzes guides the selection of activities during flipped sessions, allowing targeted clarification of misunderstandings and reinforcement of comprehension. With the aid of generative AI, the benefits of a flipped classroom are amplified by building student-centered learning into each class session.

Poster 37:

Open labs - Is there an impact on student performance?

Meaghan O'Neil, Florida Southern College, moneil@flsouthern.edu

HAPS Conference Travel Award Winner

Academic performance in A&P is often assumed to coincide with hands-on experience. One potential resource are open lab sessions that are unstructured with access to any utilized laboratory materials. Attendance of least one hour of open lab was hypothesized to lead to higher scores on subsequent exams compared to no attendance. Scores (n = 510) in A&P1 courses from those who attended at least one hour of open lab prior to a lab exam were higher (70.2 ± 2.2%) compared to those did not attend (50.1% ± 4.4%), demonstrating the efficacy and value of attending these sessions on academic performance.

Poster 38:

Engaging Students in Histology Through Fluorescence Microscopy

Yoshi Odaka, University of Cincinnati Blue Ash College, odakayu@ucmail.uc.edu

Fluorescence microscopy was introduced to Anatomy & Physiology students through a supplementary hands-on group activity. In groups of two or three, over 100 students operated the microscope and imaging software to explore fluorophore-labeled mouse kidney sections. The high-contrast images revealed structures from the subcellular to tissue level, including nuclei, plasma membranes, smooth muscle of arteries and veins, glomerular capillaries, and the apical brush borders of proximal convoluted tubules, allowing students to compare and interpret structural differences. Limitations include the high cost of the microscope and histological samples, and the complexity of operating the microscope and imaging software.

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Poster 39:

Anatomical Variations of Pelvic Fascia and Their Surgical Relevance in Nerve-Sparing Radical Prostatectomy: A Urologist's

Ojas Vijayanand Potdar, Grant Government Medical College and JJ group of Hospitals Mumbai Maharashtra India, ojaspotdar@yahoo.com

A precise understanding of pelvic fascial anatomy is vital for functional outcomes after radical prostatectomy. This combined cadaveric (15 specimens) and clinical (50 patients) study analyzed fascial patterns using magnification and histology, correlating findings with intraoperative nerve-sparing planes. Three configurations—laminar (40%), reticular (38%), and compact (22%)—were identified. The laminar variant showed superior early continence (p=0.02) and potency recovery (p=0.04). Denonvilliers' fascia variations affected dissection strategy. These insights reaffirm the enduring importance of detailed anatomical knowledge in refining urologic surgical precision and patient outcomes.

Poster 40:

Guiding Ethical and Effective A.I. Use in A&P Education

Luis Rosado, Worcester State University, lrosado@worcester.edu

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The rapid growth of generative artificial intelligence (A.I.) presents both opportunities and challenges for A&P education. The A.I. Task Force examined emerging policy trends, copyright guidance, and instructional implications to support responsible integration aligned with HAPS' mission of teaching excellent. We discuss a contemporary policy framework emphasizing preservation of human authorship, transparent disclosure, data privacy, accuracy verification, and bias mitigation. This poster will highlight how educators can utilize these adaptive guidelines to promote ethical engagement, protect professional integrity, and ensure A.I. enhances, rather that compromises, student learning and professional development.

Poster 41:

Neural Tissue Distribution in the Human Filum Terminale: Implications for Surgical and Educational Practice

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Co-Authors: Muzamil Jafry, Missouri Southern State University, Mary Kilmer, Missouri Southern State University, Alla Barry, Missouri Southern State University

The filum terminale (FT), traditionally described as an anchoring extension of pia mater, contains both connective and neural tissue (NT). FT samples from six cadavers were analyzed histologically. NT was present in all intradural samples and declined proximodistally (F1: 28.6%, F2: 7.4%, F3: 2.9%), with absence in the extradural segment. Statistical analysis demonstrated significant regional differences. These findings confirm a proximodistal gradient and suggest distinct neural-rich and fibrous regions within FT. Recognition of this distribution may have implications for surgical sectioning procedures.

Poster 42:

Finding our voice: Creating an integrative anatomy figure for teaching phonation

Kristin Stover, The Ohio State University, stover.353@osu.edu

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Anatomy instructors across curricula rank their instructional comfort in head and neck anatomy as 4.61±0.71 on a 5-point Likert scale. However, when asked their comfort level teaching phonation, the processes of sound production, their self-reported comfort level fell to 3.24±1.24. To address this instructional confidence gap, we attempted to create an illustrated figure, combining the elements of the larynx and thorax to integrate the systems involved in sound production. Our primary objective is to provide an educational resource that can be utilized at all levels of anatomy curricula. Here we present the creation process and components of the phonation figure.

continued on next page

Poster 43:

Learning by Teaching: Effects of Repeated Peer Demonstrations in Anatomy Lab

Mary Towner, Oklahoma State University, mary.towner@okstate.edu

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This study explores a learning-by-teaching strategy in an undergraduate anatomy lab. Student groups were assigned responsibility for subsets from a full list of anatomical structures to demonstrate to other groups. Students first practiced identification of their structures and then presented their demonstrations to the lab TA for formative feedback. Students then delivered brief presentations to each of their peer groups, providing an opportunity for repeated demonstrations. This repetition appears to strengthen understanding and confidence with the material. We investigate whether this leads to greater retention on practicals, comparing outcomes according to demonstration status by student group.

Poster 44:

Peer-Led Simulation-Based Education for the Pathophysiology Curriculum

Jonathan Uebelhor, Dominican University, juebelhor@dom.edu

Co-Authors: Maureen Emlund, Dominican University, memlund@dom.edu

A persistent challenge in pathophysiology education is linking theoretical concepts to clinical application. This pilot study evaluated a 1-hour, peer-led simulation workshop implemented in an undergraduate pathophysiology course at a single institution. Following participation, students completed the voluntary National League for Nursing Student Satisfaction and Self-Confidence in Learning Scale to assess their perceptions of the experience. Survey results indicated strongly positive responses, with students reporting high satisfaction and increased self-confidence. Findings suggest that peer-led simulation is a valuable instructional strategy for enhancing engagement and learner confidence in pathophysiology. Future research should examine its impact on knowledge acquisition and academic performance.

Session 3: Monday, May 25, from 9:45 am – 10:45 am

Poster 45:

Vertical Integration of Laparoscopic and Robotic Surgical Experiences in the Pre-Clerkship Medical Curriculum

Emily Bradshaw, University of Central Florida, emily.bradshaw@ucf.edu

Co-Authors: Maureen Emlund, Dominican University, memlund@dom.edu

Vertical integration is sequencing of basic science and clinical science content throughout pre-clerkship curriculum. This study examines pre-clerkship student perceptions of laparoscopic and robotic surgical training (n=40 participants). Students were invited to complete a post-survey which shows that 89% of students reported increased preparedness for surgery and 82% report increased confidence. Students reported that both robotic trainer experiences were very helpful (3.8/4, they enjoyed this robotic simulation (4.9/5), and this experience will be helpful in their future (4.5/5). Surgical simulations appear to be an engaging learning opportunity, and future research should examine if this has lasting impacts to clerkships.

Poster 46:

A course-long approach to teaching clearance using the core concept of mass balance

Michael Chirillo, Univ of Rhode Island, michael.chirillo@uri.edu

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The principle of clearance is one of the more difficult physiology concepts. Clearance is usually introduced late, with renal physiology, leading students to associate clearance exclusively with kidney function and excretion. We teach clearance early as an illustration of mass balance and a basic component of pharmacokinetics. We then present key examples of clearance and mass balance during the standard "march through the systems." Introducing clearance early and clarifying its presentation in multiple systems allows us to revisit the core concept of mass balance throughout the course and to ensure student understanding of clearance.

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Poster 47:

Combining illness scripts and case study teaching to promote undergraduates' knowledge of the diagnostic process

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We examined if using case studies and illness scripts with undergraduates (n=27) could improve their understanding of the diagnostic process over a semester. Qualitative surveys were conducted before, during, and after interventions. Surveys included modified illness-scripts that reinforced content and assessed students' evolving understanding of the diagnostic process. At mid- and end-points students were presented with unfamiliar diseases and asked to use the knowledge and skills gained from this process to suggest potential diagnoses and methods to confirm them. Visit this poster to learn how undergraduates' view the diagnostic process and the impact of illness scripts on their knowledge.

Poster 48:

A case study in exercise for teaching integrative physiology

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Exercise physiology lends itself to teaching coordination of multiple human body systems. We present a case study that helps students learn about the physiological changes associated with acute and chronic exercise and familiarizes them with both somatic and mental benefits of physical activity. Students explore the responses of cardiovascular, respiratory and skeletal muscle systems of twins, where the effects of genetics are reduced, and phenotypic differences can be isolated. The major task of the students is to make predictions about physiological responses to exercise. This encourages achievement of higher-level learning objectives such as application and analysis.

Poster 49:

Impact of collaborative quizzes on student motivation and learning in an introductory Anatomy and Physiology course

Heather Evans, Advent Health University, heather.evans@ahu.edu

Student motivation in Anatomy and Physiology courses is challenging to maintain, especially in a community college setting. Collaborative quizzes are an active learning strategy that has been successful at promoting student engagement and knowledge retention. Collaborative quizzes were implemented in an introductory course to determine the impact on student motivation and learning. Motivation was measured using an online MSLQ survey and student learning was determined by performance on exams. Analysis of data on student motivation is ongoing; however, student performance on exams was improved after implementation of collaborative quizzes. Moreover, student collaboration in and outside of the classroom increased.

Poster 50:

Collaborative quizzes increase student sense of belonging

Ksenia Everton, Portland Community College, ksenia.everton@pcc.edu

HAPS Conference Travel Award Winner

Students in Anatomy and Physiology courses at Portland Community College experience high academic stress. Prior research shows that a strong sense of belonging is positively associated with academic success, engagement, and retention. To promote belonging and reduce stress, collaborative quizzes were implemented as an active-learning strategy across multiple course sections during one academic year. Students completed three 15-question quizzes per quarter using a three-stage format: individual response, small-group consensus retake, and instructor-led feedback. Preliminary data from quiz and exam scores and end-of-term reflections (n = 140, across 7 sections) indicate improved belonging. This research was supported through NSF DUE 2111119.

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Poster 51:

Hormonal Contraceptive Use and Depressive Symptoms in Young Adult Women: A Synthesis of the Evidence

Kemily Giron, Nova Southeastern University's Dr. Kiran C. Patel College of Allopathic Medicine (NSU MD), kg1996@mynsu.nova.edu

Major depressive disorder disproportionately affects young adult women, raising concern regarding the neurophysiological effects of hormonal contraceptive use. This review synthesizes epidemiological, clinical, and neuroscientific evidence examining associations between HC use and depressive outcomes among women aged 18–25. Synthetic contraceptive hormones may influence mood regulation through effects on neurotransmitter signaling, inflammatory pathways, and stress-response circuits. Although population-level findings are mixed, evidence suggests age-dependent vulnerability, with increased depressive symptoms observed among younger and first-time users. HC use does not appear to significantly increase MDD risk but may contribute to depressive symptoms in susceptible subgroups, underscoring the importance of individualized contraceptive counseling.

Poster 52:

Leveraging Concept Maps to Encourage Meaningful Learning - A Student's Perspective

Tyler Hagy, University of North Georgia, tchagy9735@ung.edu

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Concept mapping is a visual, diagram-based technique for organizing, structuring, and representing knowledge by showing relationships between concepts. Constructing these visual tools deepens understanding, aids memory, and fosters critical thinking by highlighting connections. In this presentation, I will summarize current research on the use of concept mapping in physiology education, outline an effective approach to teaching students how to concept map, and describe strategies for overcoming the obstacles that instructors face when implementing concept mapping as a learning tool. Additionally, I will share the impact of concept mapping on my own academic journey as both a student and a peer-educator.

Poster 53:

Draw-A-Heart: Comparing Cadaveric and Illustration-Based Learning of Cardiovascular Anatomy

Pilard Hanna, The Ohio State University College of Medicine, pilardhanna@gmail.com

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This study evaluates how different teaching modalities affect high school students' understanding of cardiovascular anatomy. The study compares a cadaver-based anatomy experience with an illustration-based learning activity in which students draw and label the human heart under the guidance of a professional medical illustrator. Using a randomized pre-test/post-test design, the study measures advancement in anatomical knowledge and explores whether each modality influences students' confidence, interest in anatomy, and motivation to pursue science or medical careers. The goal is to determine which approach—or combination of approaches—is most effective for anatomy education and to inform future outreach and educational programs.

Poster 54:

Undergraduate Research within Reach

Sabrina (Sin Man) Mak, Dallas College, smak@dallascollege.edu

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Undergraduate research has become increasingly important for our students planning to apply for post baccalaureate programs. The major question many have is how will they get this experience? Undergraduate research can be incorporated at any level and, many times, at a low budget. We aim to share our experience and methodology for introducing students to research at the community college level.

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Poster 55:

The Butterfly Rash: Lupus Written on the Face

Megan Malur, MCPHS University, mmalu1@stu.mcphs.edu

Co-Authors: Nalini Broadbelt, MCPHS University, nalini.broadbelt@mcphs.edu

This case study was developed to enable anatomy and physiology students to understand the immune system via the exploration of Systemic Lupus Erythematosus (SLE). The story is about a 21-year-old woman that present with the malar rash and other findings that leads to an SLE diagnosis. Students will explore symptoms, interpret test results, and explain how the innate and adaptive systems overlap in disease presentation. In addition, students will examine treatment and preventative measures that can be taken to minimize symptoms of flare-ups. Collectively, this will allow for application and interpretation of knowledge about the immune system.

Poster 56:

Is Seeing Believing?: Instructor Presence and Student Preference in Post-Pandemic High-Structure Flipped Classrooms

Zachary Murphy, St. John Fisher University, zmurphy@sjf.edu

The high-structure flipped classroom is a powerful tool in modern pedagogy. This pilot study investigates student preferences between two common recording formats: those featuring the instructor's face versus those featuring only audio over content. While there was an initial split preference, following exposure to both formats saw a shift with a majority of students preferring the instructor visible. Further, to address student choice compared to outcomes, we will present student performance metrics aligned with their video selections. These preliminary results question if social presence should be a metric in selection of video type.

Poster 57:

Study Strategies as Predictors of Test Performance in Undergraduate Human Anatomy and Physiology Students

Michelle Murphy, University of North Dakota, michelle.murphy@und.edu

John Martin Second Timer Award

This study evaluated the impact of undergraduate Anatomy and Physiology student engagement in various study strategies with their performance on tests of associated content. The survey asked students to identify the strategies they use to study and how often their study sessions include each strategy. Student responses were matched with one course exam score, the second exam administered in the course. Changes in strategies, and test scores, were tracked through individual student progression across the two semester A&P course series. The poster provides a preliminary analysis of the results over the first year of the two-year study.

Poster 58:

An Anatomy-based Mini-CURE: You Don't Need to Work Yourself to the Bone to Implement Research-based Learning

Gideon Ney, Johnson County Community College, gney1@jccc.edu

Chemistry, microbiology, and general biology courses have led the way in the development of course-based undergraduate research experiences (CUREs), while Anatomy and Physiology courses have been much slower to adopt research-based learning models. Here we propose a CURE project of a scope obtainable in most Anatomy based courses. JCCC students, using forensic anthropology techniques, investigated the biological profile of six human skeletons in JCCC's anatomical collection. Using multiple peer-reviewed quantitative and qualitative methods students estimated either their skeletons' sex, stature, ancestry, or age. Students then presented their findings at a campus wide poster symposium at the end of each semester.

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Poster 59:

Chill or Thrill?! The Effects of Cold-Water Consumption on Parasympathetic Reactivation Post-Exercise

Zee Njikam, Dallas College, ZNjikam@Student.DallasCollege.edu

Parasympathetic reactivation can be measured using heart rate recovery (HRR1) following exercise. This research examined the effects of post-exercise water temperature on heart rate recovery. Twenty-eight healthy individuals completed stair exercise followed by ingestion of 150 ml of cold, warm, room-temperature, or no water in randomized order. HRR1 and full recovery were recorded. Cold water produced the fastest early and full heart rate recovery, while warm water resulted in slower recovery patterns. Any water conditions improved early heart rate recovery compared to no water. These results suggest that cold water ingestion may enhance autonomic recovery after moderate exercise.

Poster 60:

Completing the Community College Anatomy and Physiology Education Research (CAPER) Project: Key Findings, Reflections, and Lessons Learned

Chasity O'Malley, Wright State University Boonshoft School of Medicine, chasity.omalley@wright.edu

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The Refinement and Expansion of the Community College Anatomy and Physiology Education Research (RE-CAPER) project is concluding its final year. Four cohorts of instructors are in stages of conducting, analyzing, and presenting findings from individual projects. This mixed-methods study combines instructor interviews with student learning data. Analyses identified eight major themes: (1) impact of the model, (2) community, (3) pedagogical reflections and shifts, (4) online settings, (5) educational research in community colleges, (6) students' motivation, (7) active learning, and (8) STEM identity. This poster showcases findings from all 4 cohorts. Support from NSF #2111119.

Poster 61:

Group Dynamics: A Closer Look at Individual Strengths and Character Types in Lab Groups and Societies

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Recognizing and respecting different personalities is a crucial life-long lesson. Personality clashes undermine engagement and participation. Creating positive group dynamics is key to career success. Optometry students work together in lab groups throughout their training. Students are also assigned to "Societies". First year students (N=130) took a strengths inventory and personal preference profile test. A substantial percentage identified as Emotional Helpers with Empathy, regardless of lab group or society. Our approach revealed individual strengths and personalities within specific groups. Students gained valuable awareness of their own and classmates' core characteristics empowering them to appreciate each other, faculty and future patients.

Poster 62:

Hormone Havoc: A Gamified Approach to Reinforcing Endocrine Physiology

Haneen Salhieh, Chamberlain University, hsalhieh@chamberlain.edu

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Hormone Havoc is a gamified formative assessment activity designed to reinforce endocrine physiology concepts in undergraduate anatomy and physiology courses. The activity engages students in applying knowledge of hormone sources, targets, mechanisms of action, and feedback regulation to scenario-based physiological disruptions, including hormone excess and deficiency. Implemented during lecture reinforcement and exam review sessions, Hormone Havoc promotes collaborative problem-solving and low-stakes participation while providing instructors with real-time insight into student understanding. Informal student feedback and instructor observations suggest increased engagement, improved conceptual clarity, and greater confidence with endocrine regulation and hormonal feedback mechanisms.

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Poster 63:

GUESS WHO-istology: a Template for Gamifying Course Content Requiring Visual Identification

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Learning to identify structures based on their physical and visual characteristics rather than memorizing a type specimen from a book of course materials is a major hurdle for students, especially when learning to identify tissues in histology. We developed an easily modifiable template for a 20-questions-style game to help students learn to use visual characteristics to facilitate identification. This template is compatible with the Hasbro Guess Who 2.0 gameboard, which adds a tactile and competitive aspect for learners motivated by gamified learning practices. Students who participated during class and supplemental sessions with the game reported higher confidence in their learning.

Poster 64:

Refining 3D Anatomical Models: Insights from the Development of BuckeyeView Website

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John Martin Second Timer Award Winner

The BuckeyeView website is an integrated medical education platform centered around cadaveric 3D models. After 18 months of interprofessional development, BuckeyeView is now beta-testing, allowing us to collect useful web analytics and direct user feedback. Data collected will allow us to continue refining and optimizing our photogrammetry protocols, platform design, and web hosting process. Analysis of this data will provide insights into users' acceptance of, and preferences for, this form of digital anatomy education. Future directions include sharing meaningful insights into digital anatomy education development and dissemination with anatomy educators at large.

Poster 65:

Duodenal Papilla Morphometrics: A Multi-year Quantitative Analysis

Mary Tracy-Bee, University of Detroit Mercy, marybeeanatomy@gmail.com

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The duodenum plays a critical role in digestion and contains the major and minor duodenal papillae, key landmarks for biliary and pancreatic drainage. This multi-year quantitative cadaveric study measured distances from the pyloric sphincter to the major papilla and from minor to major papillae using digital calipers (n=116). The mean pylorus-to-major papilla distance was 7.82 cm, consistent with published values (~8.0 cm). However, the mean minor-to-major papilla distance was 1.94 cm, significantly shorter than the commonly cited 2.4 cm ($p<0.05$). Females exhibited slightly longer pylorus-to-major papilla distances. These findings refine anatomical data relevant to endoscopic and surgical procedures, including ERCP.

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Poster 66:

Cardio Physiology and Neuro-Response are Improved by Music and Aromatherapy during Stress

Kim Bao Truong, Dallas College, KTruong5@Student.DallasCollege.edu

Exposure to aromatherapy and/or music can affect your cardio physiology such as heart rate, blood pressure, and hence, stress levels. This study examined whether classical music and aromatherapy can reduce those cardio physiology levels while improving neural physiology – focus and memory. 24 participants were given a visual hand-eye coordination assessment and numeric memory test while being exposed to classical music, essential oils, or both. Heart rates, which can be influenced by the parasympathetic or sympathetic nervous system depending on the body's needs and emotional state, were monitored during the tests as an indirect measurement of stress. Upon analysis, we have learned that music, essential oils, and their combination were shown to impact cardio physiology by significantly lowering heart rate in conjunction with improved neural performance in response rate and memory capacity.

Poster 67:

Artificial Intelligence Tool Use and Exam Preparation in an Introductory Anatomy and Physiology Course

Kristen Winter, Fairmont State University, kristen.winter@fairmontstate.edu

Co-Authors: Thomas Moore, Fairmont State University, Thomas.Moore@fairmontstate.edu, Derek Nuzum, Fairmont State University, Derek.Nuzum@fairmontstate.edu

Artificial intelligence (AI) tools are increasingly adopted by students; however, educators currently have limited guidance on their appropriate use in Anatomy and Physiology courses. This research will investigate how students enrolled in an introductory Anatomy and Physiology course use AI tools during exam preparation and will evaluate their perceptions of how these tools affect learning. Participants will complete a voluntary post-exam survey detailing their use, frequency, and purpose of AI tools. Exam results will be analyzed using de-identified data. The findings seek to inform evidence-based instructional practices and provide additional guidance on integrating AI tools into undergraduate science education.

Session 4: Monday, May 25, from 2:15 pm – 3:15 pm

Poster 68:

Changes in High School Student Attitudes Toward Health Sciences Following a Hands-on Outreach STEM Program

Lucas Ettinger, Willamette University, lettinge@willamette.edu

This study investigated changes in high school students' health science interest following a single exposure, hands-on anatomy laboratory visit. 188 high school students participated in a single day visit to a human anatomy laboratory. Using a STEM-CIS questionnaire, interest was quantified. Overall, health science STEM interest increased significantly from pre- to post-visit ($p < 0.001$), and these gains were greater in minority students ($p < 0.05$). This indicates that a single visit to an anatomy laboratory with hands-on activities can engage high school aged students in STEM and may be particularly beneficial for minority students.

Poster 69:

Using Concept Maps to Increase Student Learning in Human Anatomy & Physiology

Marianne Baricevic, Raritan Valley Community College, marianne.baricevic@raritanval.edu

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The creation and use of concept maps encourages students to recruit critical thinking skills to engage with and recall information while making connections between related terms and topics. Concept maps were created by students in traditional in-person and asynchronous online sections of Human Anatomy & Physiology to determine the effect of concept map creation on achievement of student learning outcomes and perceptions of learning. Initial results presented here indicate that concept maps increase achievement of student learning outcomes as well as student perceptions of learning.
This research was supported through NSF DUE 2111119.

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Poster 70:

Impact of Curricular Sequencing on Student Confidence in Ultrasound Training

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Horizontal integration of gross anatomy laboratory and ultrasound (US) clinical imaging sessions can be an ideal strategy to increase student anatomical knowledge and understanding of clinical imaging. To improve first-year medical student preparation and confidence for US sessions, first-year medical students were instructed to place a 3D-printed US probe on the anterior chest wall on their anatomical donors in the gross anatomy lab prior to cardiovascular US sessions. Pre-post survey analysis shows that students who practiced echocardiography in the gross anatomy laboratory reported significantly higher confidence and preparedness compared to those who did not practice.

Poster 71:

Effect of Collaborative Quizzes on Students' Academic Performance and Social Interaction in Anatomy Classes

Patricia Butterworth, Antelope Valley College, patricia.butterworth@avc.edu

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Research has shown that collaborative quizzes can improve students' performance and sense of belonging by turning assessments into an active, shared learning experience, rather than a solitary task. Collaborative quizzes can also promote communication, peer collaboration, and a deep understanding of complex topics, which builds confidence and sense of belonging. Thus, we conducted a study to explore this. Specifically: How do collaborative quizzes impact students' understanding and confidence? And how are students' social interactions and sense of belonging related to collaborative quizzes? This study was conducted in a community college human anatomy class This research supported by NSF DUE 2111119

Poster 72:

Everything You Wanted to Know about Publishing in the HAPS Educator

Jacqueline Carnegie, University of Ottawa, jcarnegi@uottawa.ca

Co-Authors: Brenda del Moral, Southern Illinois University Edwardsville, bdelmor@siue.edu, Carol Britson, University of Mississippi, cbritson@olemiss.edu, Tracy Ediger, Georgia State University, tediger@gsu.edu, Elizabeth Granier, St. Louis Community College, egranier@stlcc.edu, Joanne Savory, University of Ottawa, Joanne.Savory@uottawa.ca

Have you recently tried out a teaching innovation inside or outside the classroom and perhaps collected student feedback? Are you conducting educational research or are you interested in writing a literature update on a topic pertaining to anatomy and/or physiology education? We want to hear from you! This poster introduces the HAPS Educator team, describes the three categories of HAPS Educator articles, and provides guidance on the submission, review, and revision processes that can lead to manuscript publication. The HAPS Educator is published three times annually, links articles with DOIs, and is indexed with the Education Resource Information Center (ERIC).

Poster 73:

Evaluating the Impact of Immersive Virtual Reality on Anatomy Education and Student Engagement

Rishan Chakraborty, Jesuit High School Portland, rishan.chakraborty11234@gmail.com

Co-Authors: Soma Datta, University of Houston Clear Lake, datta@uhcl.edu, Laura Dyer, University of Portland, dyer@up.edu

Current immersive VR anatomy labs often lack curriculum-specific organization or optimal technical performance. This study examines the impact of a VR Anatomy Lab on knowledge retention and academic engagement compared to traditional study methods. The lab was designed around required skeletal knowledge for nursing students at a local university and uploaded to VR headsets. Nineteen nursing students completed Qualtrics surveys & quizzes before and after accessing the VR lab, with practicum scores also tracked. Preliminary findings indicate improved academic performance, higher practicum scores, and enhanced student engagement. Findings show that VR demonstrates strong potential as a complementary tool to anatomy education.

continued on next page

Poster 74:

Virus Versus Vaccine: An Exploration of the Mechanics of the Immune System

Lacy Cleveland, Colorado Christian University, lcleveland@ccu.edu

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Are you searching for an interactive way to connect immune system physiology to real-world health decisions? This case study follows Margaret, a 71-year-old woman whose COVID-19 illness guides students through key immunology concepts. Students (1) identify viral infection symptoms, (2) compare innate and adaptive immune responses, (3) analyze inflammation, (4) interpret rapid antigen tests, (5) trace T-cell maturation and activation, (6) explain antibody production and immunological memory, and (7) evaluate vaccine function and public health implications. Designed for undergraduate anatomy, physiology, and microbiology courses, this resource promotes clinical reasoning, critical thinking, and evidence-based discussion on vaccination and prevention.

Poster 75:

Transformation of an Anatomy and Physiology Lab Manual into an Open Educational Resource Using Experiential Learning Activities

Caroline Hanson, Georgia Gwinnett College, chanson@ggc.edu

Our team is transforming undergraduate Anatomy and Physiology education by redesigning traditional labs into an innovative Open Educational Resource (OER) focused on experiential learning and critical thinking. Instead of rote memorization, the new manual features skill-based, clinically relevant activities that reflect real-world healthcare scenarios. This approach strengthens conceptual understanding and essential competencies like teamwork, communication, and problem-solving—critical for health careers. What makes this project unique is its collaborative design process, incorporating student and faculty feedback through structured focus groups as well as feedback from piloted course sections to create labs that are both pedagogically effective and personally meaningful.

Poster 76:

Cutting Edge Classrooms: How VR and Simulated Surgery Can Shape the Future of Undergraduate Anatomy

Jenna Kuczek, The Ohio State University College of Medicine, kuczek.7@osu.edu

Co-Authors: Claudia Mosley, The Ohio State University College of Medicine, claudia.mosley@osumc.edu, Dena Mossad, The Ohio State University College of Medicine, mossad.6@buckeyemail.osu.edu, Kristin Stover, The Ohio State University College of Medicine, stover.353@osu.edu

John Martin Second Timer Award Winner

We have developed an undergraduate clinical anatomy course, exposing students to applications of their anatomy foundation earlier in their career. We have implemented novel lab experiences including virtual reality (VR) and simulated surgical procedures on human donors within this course. The purpose of this study was to investigate the effects of using VR as a pre-lab learning tool followed by simulated surgical procedure labs on undergraduate students' confidence, anatomical visualization, and spatial understanding of the human body. Overall, we see an increase in student confidence with progressive interventions, while differences were observed between anatomical knowledge gain in each unit.

continued on next page

Poster 77:

Active Learning in Anatomy and Physiology: Comparing Guided Portfolios and Collaborative Worksheets

Kim Loscko, Capital University, kloscko@capital.edu

This study examines the effects of two active-learning strategies—dissection-based learning portfolios and in-class collaborative worksheets—on student motivation and academic performance in an undergraduate human anatomy and physiology course. Dissection portfolios incorporate guided learning, structured pre-lab preparation, anatomical illustration, and analysis of structural and developmental relationships, while worksheets emphasize guided, collaborative application of concepts during class. Pre- and post-course motivation surveys and course performance measures were analyzed using multiple linear regression. Results indicate that both strategies support student learning but differ in their effects on motivation and performance. These findings inform evidence-based instructional practices in anatomy and physiology education.

Poster 78:

Implementing High-Impact Practices in A&P Lecture via High-Structure Flipped Design

Zachary Murphy, St. John Fisher University, zmurphy@sjf.edu

Implementation of high-impact practices in the Anatomy and Physiology classroom is easily attainable through a high-structured flipped model. We will introduce our classroom design to enhance student learning. By replacing passive lecturing with retrieval practice, active learning, among additional classroom best practices, instructors can equitably facilitate student learning. Further, incorporation of reflection and recovery mechanisms empowers students to identify knowledge/skill gaps and demonstrate competency. Since use of evidence-based strategies can foster a deeper understanding of complex biological systems, we will highlight our classroom approach and provide clear examples of active learning in Anatomy and Physiology.

Poster 79:

Designing a Custom Anatomy Lab Manual That Students Will Read

Allison Nesbitt, University of Missouri, nesbitta@health.missouri.edu

Co-Authors: Kevin Flaherty, University of Missouri, flahertyk@health.missouri.edu, Sean Greer, University of Missouri, sygreer@health.missouri.edu, Deborah Neidich, University of Missouri, dlnkyc@health.missouri.edu, Cheryl Hill, University of Missouri, hillche@health.missouri.edu

Anatomy dissection courses often follow sequences that differ from published laboratory manuals, necessitating that instructors create course-specific handouts. This misalignment can cause student confusion, frustration, and reduced engagement during lab. Additionally, published dissection lab manuals frequently include excessively labeled illustrations that increase cognitive load, highlight nonessential structures for the course, or lack labeled human donor images. This poster describes the design, implementation, and key features of interactive, modular, custom regional anatomy labs adapted for physical therapy and medical gross anatomy courses. Features include short dissection instructions, tips, key relationships, review questions, donor-based and radiographic images, tables, and clinical cases.

continued on next page

Poster 80:

MRI-Based Morphometric Study of the Corpus Callosum in Nigerian Adults

Beryl Ominde, Aga Khan University, berylominde@gmail.com

Co-Authors: Mamerhi Enaohwo, 2Department of Human Anatomy and Cell Biology, Delta State University, Abraka, Nigeria, enaohwotani@gmail.com, Joyce Ikubor, 3Department of Radiology, Delta State University Teaching Hospital, Oghara, Nigeria, joyceikuborjune12@yahoo.com, Denise Ogholoh, 3Department of Radiology, Delta State University Teaching Hospital, Oghara, Nigeria, ogholohoghenetejiri@gmail.com, Ogheneyole Jeremiah, 2Department of Human Anatomy and Cell Biology, Delta State University, Abraka, Nigeria, jeremaihjoel40@gmail.com, Orovwoghene Omoro, 2Department of Human Anatomy and Cell Biology, Delta State University, Abraka, Nigeria, faithfulomoro@gmail.com, Patrick Igbigbi, 2Department of Human Anatomy and Cell Biology, Delta State University, Abraka, Nigeria, pigbigbi@gmail.com

Alterations in the corpus callosum morphometry have been linked to neurological conditions like Alzheimer's. This study aimed at establishing normal cut-off values of the corpus callosum using Magnetic Resonance scans of 199 Nigerian adults (91 males, 108 females) after obtaining institutional authorization. Sexual dimorphism was observed in the distance of the callosum's genu and splenium from the frontal and occipital poles of the brain respectively ($p<0.05$). The corpus callosum's measurements exhibited significant association with age and disparities across age-groups ($p<0.05$). The findings will aid in the follow-up of neurodegenerative and psychiatric conditions besides planning for corpus callosotomy in epileptic patients.

Poster 81:

Examining Atypical Palmaris Longus Muscles Patterns Within a Donor Body Population: A Case Study Led by DPT Students

Summer Ostrowski, University of Wisconsin – Milwaukee, ostrowsk@uwm.edu

Co-Authors: Micah Dennis, University of Wisconsin - Milwaukee, mldennis@uwm.edu, Aaron Krause, University of Wisconsin - Milwaukee, krauseaa@uwm.edu, Dayna LeClair, University of Wisconsin - Milwaukee, leclaird@uwm.edu, Mohamed Nasef, University of Wisconsin - Milwaukee, manasef@uwm.edu

We present a case of a novel variant of the palmaris longus (PL) muscle and examine the presence of variation of atypical PL within a sample of 38 donor bodies (76 limbs) from the Medical College of Wisconsin Body Donor Program. We collected data including presence/absence, origin, insertion, muscle belly-tendon ratio, and muscle fiber type. We discovered that of donors with unilateral presence of PL, 44% of those muscles had an atypical muscle-tendon relationship. This correlation has not been documented in the literature. We will briefly spotlight how short, anatomical exploration projects can benefit science and clinically focused graduate students.

Poster 82:

Impact of Persistence Project and Exam Wrappers in a First Semester Community College Human Anatomy and Physiology Course

Nicole Perry, Oakton College, nperry@oakton.edu

Co-Authors: Kanchana Mendes, Oakton College, kmendes@oakton.edu, Kamie K. Stack, Bishop's University, kstack@ubishops.ca, Sherrie Gallipeau, San Joaquin Delta College, sherrie.gallipeau@deltacollege.edu, Ron Gerrits, Milwaukee School of Engineering, gerrits@msoe.edu, Murray Jensen, University of Minnesota - Twin Cities, msjensen@umn.edu, Chasity O'Malley, Boonshoft School of Medicine, Wright State University, chasity.omalley@wright.edu

Oakton College's Faculty Persistence Project (PP), piloted in Fall 2015, engages faculty in four intentional classroom practices. Over the past decade, sections implementing these practices have demonstrated significantly higher student retention and graduation rates than non-supported sections. In Fall 2025, exam wrappers were added as an active learning metacognitive strategy to integrate the CAPER project with the PP. This poster examines the impact on students in their first semester of a cadaver-based human anatomy and physiology course. This research was supported through NSF DUE 2111119.

continued on next page

Poster 83:

Effectiveness of Interactive Artificial Intelligence Conversational Learning Tool in Enhancing Learning Outcomes of Postgraduate Anatomy Education – A Pilot study

Kalpana Ramachandran, Sri Ramachandra Medical College & RI, Sri Ramachandra Institute of Higher Education & Research (SRIHER), Chennai, Tamilnadu, India, kalpanasriram@sriramachandra.edu.in

An interactive artificial intelligence (AI) conversational tool was developed, incorporating faculty-authored content, aligned with postgraduate anatomy education. This study evaluated its effectiveness in improving learning outcomes among 55 anatomy postgraduates in gross anatomy. Following baseline assessment, learners engaged with the tool for six weeks through inquiry-driven, self-directed learning. Scores improved significantly from Pre-test (Mean±SD:51.8±8.6) to Post-test (74.9±7.2), mean difference 23.1 ($p<0.001$; 95% CI: 20.4–25.8). The effect size was large (Cohen's $d=2.87$). Reliability was excellent (Cronbach's alpha=0.91). Majority of learners rated high usability. This pilot study demonstrates the conversational AI tool is highly-effective, evidence-based adjunct enhancing postgraduate anatomy education outcomes.

Poster 84:

Plastic Brains: Accumulation of NMPs in the Brain

Nardeen Sharbatoghlie, MCPHS, Nshar2@stu.mcphs.edu

Co-Authors: Nevila Jana, MCPHS, Nevila.jana@mcphs.edu, Nalini Broadbelt, MCPHS, Nalini.Broadbelt@mcphs.edu

This case-based learning activity was developed to introduce undergraduate Anatomy and Physiology students to evidence linking Nano/Micro-plastics (NMPs) to neurodegeneration via blood–brain barrier (BBB) disruption. Students evaluated a hypothetical patient with worsening Alzheimer's disease and correlated clinical progression with post-mortem findings demonstrating cerebral NMP accumulation identified through latest spectroscopy and spectrometry methods. Through guided group-based questions, students were required to integrate BBB physiology, neuroinflammation, and analytical detection methods to explain disease progression.

This case enabled students to reason backward from clinical findings and integrate patient presentation with underlying mechanisms, while introducing contemporary concepts in environmental neurotoxicology.

Poster 85:

Normal Isn't Neutral: How Health Education Shapes Body Bias in Future Health Care Providers

Megan Spurlock, Utah Valley University, megan.spurlock@uvu.edu

Co-Authors: Elyse Vaccaro, Utah Valley University, evaccaro@uvu.edu

This study examines how pre-health courses and textbooks shape students' perceptions of a "healthy, normal" body. Textbooks favor lean, Eurocentric, male bodies, while students rate larger bodies as unhealthy, revealing strong positive correlations among the terms healthy, fit, normal, and typical. Findings highlight implicit bias formation and underscore the need for an inclusive curriculum to foster equitable health education and prepare students for bias-aware, person-centered care. This study can make a significant contribution to understanding how our current pedagogy can impact pre-health education and outcomes and inform improvements to anatomy and physiology curriculum.

Poster 86:

Utilizing Bullfrogs for Compound Action Potential Investigation in the Sciatic Nerve Provides a Viable Alternative to Leopard Frogs in Physiology Teaching Laboratories

Nanette Tomicek, Thomas Jefferson University, nanette.tomicek@jefferson.edu

Rana pipiens (leopard frog) is commonly used in teaching labs to demonstrate physiology experiments in excitable tissues. However, leopard frog populations have experienced a decline and replacement organisms, Lithobates catesbeianus (bull frog), may be a viable option to preserve experiential learning in physiology teaching labs. Moreover, updates to guidelines for amphibian euthanasia require the use of the anesthetic, tricaine (MS-222). MS-222 is a sodium channel blocker, which prevents signaling in excitable tissues. Herein we demonstrate that adjusting amphibian protocols to include a sufficient washout period post-harvesting rescues sciatic nerve function to adequately demonstrate signaling function in bullfrogs.

continued on next page

Poster 87:

Metacognitive Strategies for Physiology Students: Using Reflection and Self-Assessment to Support Learning and Retention

Johnny Vang, Chamberlain University, jvang1@chamberlain.edu

Anatomy and physiology (A&P) courses require students to integrate complex concepts under significant cognitive load. This presentation introduces an embedded, low-burden metacognitive framework that integrates structured reflection and self-assessment into lecture and laboratory experiences in an undergraduate A&P I course. Students engage in brief, discipline-specific reflection activities focused on confidence calibration, key concept identification, unresolved questions, and application to nursing and healthcare contexts. This approach promotes self-regulated learning, supports structure–function integration, and normalizes productive struggle without reducing instructional time. Attendees will receive adaptable reflection prompts and implementation strategies to enhance learning across A&P courses.

Poster 88:

From Gross Anatomy to Microscopy: Incorporating Donor-Derived Histology into A&P Curriculum

Lucas Whitcher, The University of Montana - Missoula College, lucas.whitcher@mso.umt.edu

Co-Authors: Ava Samuelson, University of Montana, ava.samuelson@umconnect.umt.edu, Sierra Dennison, University of Montana, sierra.dennison@umconnect.umt.edu

Cadaver donation is foundational to anatomy education, yet instructional use is limited to the allotted time the bodies retained. Moreover, the scope of study is usually restricted to gross anatomy. To expand the educational impact of body donation, students involved in The Legacy Project developed histological microscopic slides from biopsy of cadaver tissue. The Legacy Project's efforts resulted in 100 slide specimens, representing a complete catalog of bodily tissues. Variations in slide quality existed among tissue type and differences in histological processing. Selected specimens were then digitally processed, a histology index gallery compiled, and this resource made available to students.

Poster 89:

Discoveries of Thomas Willis and How History of Medicine Can Be Incorporated into a Teaching Approach in Physiology

Yuri Zagvazdin, Nova Southeastern University, yuri@nova.edu

Thomas Willis is best known for his groundbreaking studies of cerebral anatomy, including the description of the arterial anastomoses at the base of the brain, eponymously named the Circle of Willis. Yet his contributions to medicine extend beyond this discovery. They include a pioneering report of a patient with myasthenia gravis and observations on the taste of urine that helped to lay the foundation for distinguishing diabetes mellitus from diabetes insipidus. I will outline an approach that integrates Willis' original descriptions, illustrations and humor injections to advance understanding of the physiological concepts developed with notable contributions from this famous physician.

Poster 90:

Case-Based Learning (CBL) Promotes Critical Thinking in Asynchronous Online Anatomy & Physiology Classes

Hollie Leavitt, College of Western Idaho, hollieleavitt6@cwi.edu

Case-based learning (CBL) improves critical thinking in face-to-face courses, but research on its effectiveness in online asynchronous settings is limited. This study examined an Anatomy and Physiology course using CBL activities completed independently by students. Quantitative and qualitative analyses assessed changes in critical thinking skills. Initial analysis indicates that students showed significant gains in inductive reasoning overall. Among lower-performing students (bottom 50%), significant increases in deductive reasoning, identifying assumptions, making observations, and evaluating credibility were also observed. These findings suggest that CBL can promote critical thinking in asynchronous online courses, particularly for students who begin with lower performance.

Kansas City Kansas Community College.

Office of the President
7250 State Avenue : Kansas City, KS 66112
Phone 913.288.7123 : Fax 913.288.7680

May 23, 2026

Dear Conference Attendees and Esteemed Guests,

On behalf of *Kansas City Kansas Community College*, it is my sincere pleasure to welcome you to the 40th annual Human Anatomy and Physiology Society conference. We are delighted that you have chosen to gather in the Kansas City region for this significant opportunity to learn, collaborate, and share insights that shape excellence in anatomy and physiology education.

For more than a century, KCKCC has been deeply committed to inspiring individuals and enriching our community one student at a time. Our mission is reflected in a broad range of academic programs, innovative instructional practices, and meaningful community partnerships that support learners at every stage of their educational journey.

As you engage in presentations, discussions, and sessions over the coming days, I encourage you to explore not only the intellectual rigor of this conference but also the unique character of our region and our institution.

We are especially proud to share that KCKCC is returning to the heart of downtown *Kansas City, Kansas* (KCK), with the development of the **KCK Community Education, Health and Wellness Center** — a 100,000-square-foot facility that embodies our long-standing commitment to accessible, community-centered education and services. Through collaborative partnerships with *CommunityAmerica Credit Union*, *Swope Health*, and *KCK Public Schools*, this center will bring educational programs, health and wellness resources, financial literacy support, and workforce development opportunities directly to the urban core.

This transformational project underscores KCKCC's belief that education and community wellbeing are inseparable. When completed, it will serve as a vibrant hub of learning and community engagement — enhancing access to career pathways, technical training, and life-changing opportunities for students and families throughout eastern Wyandotte County.

Whether you are here to present your work, gain fresh insights, or connect with colleagues from across the country, your presence enriches this conference and contributes to the collective advancement of anatomy and physiology education.

Thank you for joining us in Kansas City. We are honored to host you and wish you an inspiring and rewarding conference experience.

Sincerely,

Dr. Scott Balog
Executive Vice President

"Learn, Lead, Achieve"

Kansas City Kansas Community College Campus Map

ROOMS WHERE WORKSHOPS OCCUR

2325/26 - Lower Jewell
3398 (one workshop) - Upper Jewell
3502, 3503, 3505/06, 3508/09 - Upper Math
2602 - Lower Flint
2703, 2705, 2708 - Lower Nursing
3719 - Upper Nursing

Rooms beginning with a "2" are lower level
Rooms beginning with a "3" are upper level
The second number in the room number is the "building" (or wing)
"3" is the Jewell Student Center
"4" is Science
"5" is Mathematics
"6" is The Flint technology wing
"7" is Nursing
The last two numbers are room numbers within each "building"
Room numbers ascend from south to north, so Jewell is southernmost (of what we're using) and nursing is northernmost.

Workshop Shuttle Schedule

The hotel is roughly 30 minutes from the University.
Please keep that in mind when planning your travel to and from the various locations.

Tuesday, May 26:
Morning Shift: 7:00 – 9:00 am – 3 shuttles running from the Sheraton to the Kansas City Kansas Community College (KCKCC).
Afternoon Shift: 4:00 – 6:00 pm – 3 shuttles running from KCKCC to the Sheraton.
All Day Shift: 7:00 am – 6:00 pm – 1 shuttle running between the Sheraton to the KCKCC.

Wednesday, May 27:
Morning Shift: 7:00 – 9:00 am – 2 shuttles running from the Sheraton to the KCKCC.
Afternoon Shift: 11:45 – 1:30 pm – 2 shuttles running from KCKCC to the Sheraton.
All Day Shift: 7:00 am – 1:30 pm – 1 shuttle running between the Sheraton to the KCKCC.

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The Core PowerLab Sensors Bundle enables you to investigate a wide range of biological signals. It contains six sensors, a PowerLab T1, as well as accessories and consumables needed for data acquisition across many of our human physiology labs.

Products included:

- PowerLab T1
- Finger Pulse Sensor
- Skin Temperature Sensor
- Respiratory Belt Sensor
- Biopotential Sensor
- Grip Force Sensor
- Tendon Hammer Sensor

Labs and Signals: 19 DAQ labs, 10 signals

Advanced Bundle

The Advanced PowerLab Sensors Bundle enables you to investigate all of the biological signals we offer. It contains nine sensors, a PowerLab T1, as well as the necessary accessories and consumables for data acquisition across our human physiology labs.

Products included:

- PowerLab T1
- Finger Pulse Sensor
- Skin Temperature Sensor
- Respiratory Belt Sensor
- Cardio Microphone Sensor
- Biopotential Sensor
- Grip Force Sensor
- Tendon Hammer Sensor
- Blood Pressure Sensor
- Spirometer Sensor

Labs and Signals: 27 DAQ labs, 13 signals

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Workshop Overview

Workshop number = Letter; three-digit number.
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<u>Rooms Where Workshops Occur</u>
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3398 (one workshop) - Upper Jewell
3502, 3503, 3505/06, 3508/09 - Upper Math
2602 - Lower Flint
2703, 2705, 2708 - Lower Nursing
3719 - Upper Nursing

Tuesday May 26th
8:30AM

A101 Room 3502	Guided Concept Narration: Shawn Macauley
A102 Room 3503	Designing and Implementing Specifications Grading in an Upper-Level Anatomy Course: Grace Garner
A103 Room 3505/6	Hands-on, Active Learning with a Fully Functional Physical Knee Model: Aaron Olsen **Sponsored by: 3D Anatomy Studios**
A104 Room 3508/09	Undergraduate Research Within Reach: Megan Romeo
A105 Room 2703	Promoting Equity Through High-structure Course Design: Jennifer Stokes
A106 Room 2705	Podcasting 101 - Reinforcing Content on the Go: Steve Sullivan
A107 Room 2325/26	Regular and Substantive Interaction: Intent and Implementation: Heather Armbruster
A108 Room 2708	Integrating Neuroethics and Open Science Into Human Anatomy and Physiology Using Authentic Datasets: Nouran Amin
A109 Room 3719	The Oral Cavity is a Window to Systemic Pathologies: Brenda Del Moral
A110 Room 2602	Simple, Interactive and Inclusive Learning Strategies in Anatomy and Physiology Courses: Ben Ondimu

Tuesday May 26th
9:45AM

A201 Room 3502	Using an Equity Critical Lens to Quantitatively Examine Course Disparities: Natalia Caporale
A202 Room 3503	Update!! Using Progressive Team Based Concept Mapping to Increase Student Engagement, Feelings of Belonging and Understanding of Core Concepts in an Introductory AP1 course: Beth Eischen
A203 Room 3505/6	Incorporating nutrition case studies and HHMI BioInteractive's How to Read a Nutrition Label Interactive in Anatomy and Physiology: Holly Basta **Sponsored by: HHMI**
A204 Room 3508/09	"Um, Actually": Adapting the Internet Game Show into a Classroom Review Game: Jacques Guillot
A205 Room 2703	Flipping the Script: Students as lecturers: Chad Wayne
A206 Room 2705	Teaching Tissues: Tips, Tricks & Tools: Tracy Ediger
A207 Room 2325/26	The Anatomy & Physiology of AI: Kathleen Ahles
A208 Room 2708	Lab Practicals: Gold Standard of Assessment or Bane of Your Existence?: Carol Britson
A209 Room 3719	Bridging the Gap Between Online Lectures and Lab Learning in Anatomy & Physiology: Nahel Awadallah
A210 Room 2602	Piecing Together the Leukocyte Puzzle: Using Augmented Reality and Jigsaw Pedagogy to Differentiate White Blood Cells: Ranya Taqieddin
A211 Room 3398	Body of Evidence: Implementing a High-Impact Practice in Anatomy and Physiology: Kathy Burleson
A212 Room 3507	Engaging Students in a Classroom and Preparing them for an AI-driven Future: Murray Jensen

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Tuesday May 26th
11:00AM

A301 Room 3502	Crafting Your Teaching Philosophy: Strategies for Motivating All Students to Learn: Marisol Lopez
A302 Room 3503	HAPS Exam Program 2026 Update: Learn More about HAPS Comprehensive A&P and Stand-alone Anatomy Exams: Janet Casagrand
A303 Room 3505/6	Active Anatomy: Practical Active Learning Strategies for the A&P Classroom: Jaclyn Cobb-Susa **Gail Jenkins Teaching and Mentoring Award Winner**
A304 Room 3508/09	From Memorization to Deliberation: Mock Trials as a Framework for Teaching Physiology Through Evidence and Argument: Nathaniel King **HAPS Conference Travel Award Winner**
A305 Room 2703	Interactive "Dungeon Crawl" Case Studies: Susan Weiner
A306 Room 2705	A.I. in Anatomy & Physiology: Practical Ethical, and Effective Implementation: Juanita Jellyman
A307 Room 2325/26	Lights, Camera, A&P: Using Cinematic Clips to Reinforce Anatomy and Physiology Concepts: Jeffery Speth
A308 Room 2708	Classic Concepts Re-visited (and Does it Matter?): Patricia Brady **Sponsored by: Pearson**
A309 Room 3719	Bodies Under Stress: Science and Strategies: Liz Co **Sponsored by: Cengage**
A310 Room 2602	Alt Text – What, Why, When, Where, & How: Youlonda FitzGerald

Tuesday May 26th
1:15PM

A401 Room 3502	Reframing A&P Through a Lens of Diversity: Mindi Fried **HAPS Conference Travel Award Winner**
A402 Room 3503	Designing Case Studies from Pathohistology Database for Classroom or Research: Sharada Gollapudi
A403 Room 3505/6	An Active Learning Approach to Urine Formation: Lori Fetter
A404 Room 3508/09	A Hands-On, Active Learning Approach to Teaching Anatomy Using Multiple Resources: Lynne Ross **Sponsored by: Anatomy in Clay**
A405 Room 2703	Head Cases: How to Curate, Edit, and Design Clinical Case Studies for A&P Courses: John Neisser
A406 Room 2705	Writing for the HAPS Educator: Promote Your Work and Add to Your Teaching Portfolio: Brenda Del Moral **Sponsored by: HAPS**
A407 Room 2325/26	From Memorization to Meaning: Active Learning Strategies for Anatomy and Physiology: Morgan Castiblanco
A408 Room 2708	Innovative Use of 3D Printed Structures (3DPS) in the Undergraduate Classroom: Elita Partosoedarso
A409 Room 3719	Reducing Student Withdrawals in Asynchronous Online Courses: Implementing the RESILIENT Student Success Framework: Nahel Awadallah
A410 Room 2602	From Visualization to Application: Activating 3D Anatomy for Deeper Learning: January Schultz

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Tuesday May 26th
2:30PM

A501 Room 3502	Feel the Phys! Get Hands-on with the Latest Sensor Technology: Sophie Duong **Sponsored by: ADInstruments**
A502 Room 3503	Practice and Feedback are Essential for Learning: Michael Koot **Sponsored by: McGraw Hill**
A503 Room 3505/6	Scaffolding Success in A&P Lecture: Active Learning Modules for Neuron Physiology and the Cardiac Physiology: Kaitlin Bonner
A504 Room 3508/09	PowerPoint Accessibility for Classroom Presentations: Amanda Rosenzweig
A505 Room 2703	Modern Anatomy & Physiology: Digital Curriculum, Case Studies, and Active Learning: Kelly Griesbach **Sponsored by: eDynamic**
A506 Room 2705	HAPS Best Practices for Teaching Anatomy & Physiology Online: Kathleen Ahles
A507 Room 2325/26	Wikipedia Editing as an Ancillary Learning Modality to Teach Critical Thinking Around Information Sources, Formal Writing for a General Audience, and the Peer Review Process in the Life Sciences: Tanya Cupino
A509 Room 3719	Skin: A Holistic Model to Study Human Evolution, Health and Culture: Soma Mukhopadhyay
A510 Room 2602	Using Building Blocks to Build an Understanding of Excitation-Contraction Coupling: Christopher Donnelly

Tuesday May 26th
3:45PM

A601 Room 3502	Reviewing Manuscripts for the HAPS Educator: A Valuable Scholarly Activity to Add to Your Teaching Portfolio: Jacqueline Carnegie
A602 Room 3503	The Circadian Audit: Bridging Unani Medicine and Modern Chronobiology to Teach Homeostasis: Ubaidullah Khan
A603 Room 3505/6	From Passive to Participatory: Integrating Live Physiological Data and Guided AI Prompts in Anatomy and Physiology Lectures: Kaushik (Kash) Dutta **Sponsored by: ADInstruments**
A604 Room 3508/09	Virtual Anatomy and Physiology Courses: Jill Feinstein
A605 Room 2703	Beyond the Structures List: The Evolution of the Body Builder Project: Ann Raddant **Sponsored by: McGraw Hill**
A606 Room 2705	Converging in the Classroom II: A Deeper Dive Into Supporting Your Neurodivergent Students: Erin Amerman
A607 Room 2325/26	From Dissection to Direction: Applying Self-Directed Learning in the Anatomy Lab: Grace Pinhal-Enfield
A608 Room 2708	The Neurophysiology of Making Memory Stick: Adam Fisch **Sponsored by: Draw It To Know It**
A609 Room 3719	From Core Concepts to Competencies, Developing A&P Curriculum to Encourage Mastery: James Clark
A610 Room 2602	The Integration of Social Determinants of Health in Anatomy Case Studies: Eva Mannino

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Wednesday May 27th
8:30AM

B101 Room 3502	Success Scrapbooking: Promoting Resilience and Authenticity: Karen Goodwin
B102 Room 3503	The Anatomy of Belonging: Utilizing Student Feedback and Climate Data to Drive Meaningful Change: Shannon Kispert
B103 Room 3505/6	Active Learning in the College Classroom: A Practical Tool to Help with Lesson Design: Zachary Murphy
B105 Room 2703	Anatomy of a Multiple Choice Question: Brian Hill
B106 Room 2705	Generative AI and Instructional Design in a Flipped Anatomy and Physiology Classroom: David Murray-Stoker **Sam Drogo Technology in the Classroom Award Winner**
B107 Room 2325/26	The First Day of Class: They'll Want to Come Back for More!: Tom Lehman
B108 Room 2708	"Where Am I?" Using Anatomical Rosettes and 3D Models to Address Dissection Video Disorientation: Alison Camero
B109 Room 3719	When Being Wrong Can Make Things Right: Showing students how to learn from mistakes: Jeanette Ferguson
B110 Room 2602	Planning and Implementing a Donor Memorial Ceremony: Bobbie Leeper

Wednesday May 27th
9:45AM

B201 Room 3502	It's All in Your Head: Exploring the Brain in Radiology with Applications in the Anatomy Classroom: Danielle Edwards
B202 Room 3503	Unmasking Preconceptions: A Critical Audit of Anatomy Textbooks: Elyse Vaccaro
B203 Room 3505/6	Flex Your Pedagogy Muscles: Building Educational Escape Rooms and Games for the Anatomy and Physiology Classroom: Jeremy Grachan
B204 Room 3508/09	Promoting Student Engagement through Active Learning Experiences; Tackling Physiological Mechanisms through Groupwork and Peer Discussions: Kristi Zenchak
B205 Room 2703	MCAT Self-Study Program: Brian Hill
B206 Room 2705	The Fascial System; A Missing Link in A&P Education: Kate Oland-Galligan
B207 Room 2325/26	What Were Those Students Thinking? Using Exam Autopsies in Real Time to Improve Students' Metacognitive Processing During Examinations and Improve Exam Item Creation: Edgar Meyer
B209 Room 3719	Using Functional Pathway Analysis as an Instructional Strategy to Facilitate Student Reasoning in Physiological Problem Spaces: Michelle Murphy **John Martin Second Timer Award Winner**
B210 Room 2602	From the Human Body to the Bench: Building Scientific Thinking in Physiology Labs: Luke Kinsey **Sponsored by: ADInstruments**

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Wednesday May 27th
11:00AM

B301 Room 3502	Making Neuroanatomy Stick: A Creative, Hands-On Approach to Teaching the Brachial Plexus: Renee Samardak
B302 Room 3505/6	De-Patholgizing Anatomy & Physiology: Matt Rushford
B303 Room 3505/6	Beyond the Comfort Zone: Strategies for Professors to Avoid Pedagogical Complacency: Sultan Jenkins
B304 Room 3398	Employing Causality to Avoid Brittle Knowledge when Teaching Physiology: Deriving the Wiggers Diagram: Erik Silldorff
B304 Room 3508/09	The Value of Learning Assistants at Two-Year Colleges: Perspective From Learning Assistants (LAs): Dakota Weise
B305 Room 2703	Hormone Havoc: A Gamified Approach to Reinforcing Endocrine Physiology: Haneen Salhieh
B306 Room 2705	Unlocking A&P Engagement: A Workshop on Implementing High Impact Lab Activities: Caroline Hanson
B307 Room 2325/26	Visual A&P: Draw It. Record It. Post It: Jordan West
B308 Room 2708	Reflecting Real Bodies: Incorporating Anatomical Variation and Influencing Factors into A&P Education: Daheen Lee **Sponsored by: Primal Pictures**
B309 Room 3719	Simple Methods to Improve Audio Quality in Recorded Lectures: Kevin Flaherty
B310 Room 2602	Incorporating Feedback from an Artificial Intelligence (AI) Assistant into Undergraduate Laboratory Writing Assignments: Nicole Squyres

Workshop Abstracts

Session 1: May 26 @ 8:30 AM – 9:30 AM

A101 - Guided Concept Narration
Shawn Macauley, Muskegon Community College, shawn.macauley@muskegoncc.edu

Guided Concept Narration is an active-learning strategy that helps students master difficult anatomy and physiology concepts by creating a detailed narration for a provided video. In this workshop, participants will experience the activity exactly as students do. You will work in small groups with a brief anatomy video and a required list of key terms, then craft a concise narration that accurately integrates every term while explaining the concept with structure-function reasoning. We will model how to apply this strategy to challenging topics. You will leave with a ready-to-use template, scoring rubric, and implementation tips.

A102 - Designing and Implementing Specifications Grading in an Upper-Level Anatomy Course
Grace Garner, Indiana University School of Medicine - Bloomington, gtgarner@iu.edu

Specifications grading has been increasingly adopted in higher education as an alternative to traditional points-based grading. This presentation examines the redesign of an upper-level anatomy course (ANAT-A480/580) using specifications-based grading and analyzes student experiences after course completion. Key design elements, including assignment bundles, revision policies, and alignment with course learning objectives, are described. Survey responses, student reflections, and student interviews are used to examine student perceptions of workload, stress, and learning. The presentation will focus on patterns in student perceptions and instructional insights gained during implementation. This work offers practical considerations for instructors considering specifications grading in STEM courses.

A103 - Hands-on, Active Learning with a Fully Functional Physical Knee Model
Aaron Olsen, 3D Anatomy Studios, aolsen@3danatomystudios.com

Sponsored by 3D Anatomy Studios

In this sponsored workshop, participants will have the opportunity to test out 3D Anatomy Studios' newest product: a Knee Active Learning Kit. The kit consists of a fully functional physical knee model and open-source activities designed to engage students in hands-on, higher-order learning. Activities that participants can try out include: "Connective tissue scavenger hunt", "How many ways can you move your knee?", "What are the functions of the knee ligaments? (A Knock-out Experiment)", and "How do muscles work together?" The workshop will be run by the founder of 3D Anatomy Studios and designer of the kit, Aaron Olsen, PhD.

A104 - Undergraduate research within reach
Megan Romeo, Dallas College, meganromeo@dallascollege.edu, Sabrina (Sin Man) Mak, Dallas College, smak@dallascollege.edu

Undergraduate research has become increasingly important for our students planning to apply for post baccalaureate programs. The major question many have is how will they get this experience? Join us in this workshop to explore how we as faculty have been able to introduce research to our community college students. Participants will experience samples of previous projects and begin the process of planning your own undergraduate research project at a low budget.

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A105 - Promoting equity through high-structure course design
Jennifer Stokes, Southwestern University, stokesj@southwestern.edu, Pat Clark, Indiana University School of Medicine, patclark@iu.edu, Archana Indira, Mercy College of Health Sciences, archana.indira@mercyoneiowa.org, Marisol Lopez, Boston University Chobanian & Avedisian School of Medicine, mlopez@bu.edu, Zachary Murphy, St. John Fisher University, zmurphy@sjf.edu, Cristy Tower-Gilchrist, Emory University, cristy.tower-gilchrist@emory.edu

High-structure course design supports all students but is especially beneficial to underrepresented students, first-generation students, and students from lower-resourced high schools. The pedagogical approach of high-structure course design incorporates intentional "scaffolding" to guide students through course mechanics, the learning process, and course content. By providing consistent course structure, students experience course predictability, and information scaffolding promotes mastery of base content before application and synthesis. In this workshop participants will: 1) learn how high-structure courses promote equity; 2) reflect on their own course design; and, 3) draft a teaching activity or curriculum outline that includes high-structure elements.

A106 - Podcasting 101 - Reinforcing Content on the Go
Steve Sullivan, Bucks County Community College, stephen.sullivan@bucks.edu

Podcasts can be a powerful learning tool for A&P students by extending instruction beyond the classroom and supporting repeated, flexible exposure to core concepts. In an audio-first format, complex concepts can be explained through narrative structure, analogies, and clinical context that improve comprehension and retention. Podcasts also promote spaced repetition, reinforce key vocabulary, and help students study during commutes or exercise, increasing total time-on-task. Used strategically, podcasts can enhance engagement, confidence, and exam readiness. In this workshop, I'll talk about my podcast, others out there, and how to make your own podcast.

A107 - Regular and Substantive Interaction: Intent and Implementation
Heather Armbruster, Southern Union State Community College, harmbruster@suscc.edu

Regular, substantive interaction (RSI) is required to differentiate distance education from correspondence courses. There are conflicting guidelines on what constitutes interaction and how frequently we should interact. Join me for a discussion on the definition and guidelines of RSI. We will reflect on the goals of RSI and brainstorm how to accomplish RSI effectively and efficiently. I hope to address the question, "Can crocheting a sweater be a starting point for RSI in an online class?"

A108 - Integrating Neuroethics and Open Science into Human Anatomy and Physiology Using Authentic Datasets
Nouran Amin, Ball State University, nouran.amin@bsu.edu

This interactive workshop presents a classroom-tested neuroethics module designed for undergraduate anatomy and physiology. Participants will engage with authentic neuroscience datasets while exploring ethical reasoning, responsible data use, and open science principles. The session models a complete instructional sequence, including pre-assessment strategies, guided worksheet prompts, and structured discussion techniques that promote data literacy and neuroethical engagement. Attendees will leave with adaptable, ready-to-implement materials and practical strategies for incorporating ethical analysis into A and P courses without sacrificing core physiological content.

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A109 - The Oral Cavity is a Window to Systemic Pathologies
Brenda Del Moral, Southern Illinois University Edwardsville, bdelmor@siue.edu

Oral diseases are not limited to the oral cavity. Oral pathogens have been found in the brain, nerves, blood and heart, lungs, liver, spleen, digestive tract, bones and joints, and even in the placenta and developing fetus. This matters, given that in the United States, 70% of 65-year-olds are diagnosed with some form of oral disease. This workshop will provide an update on this research and the interconnections of the oral cavity with other body systems. A discussion about ways to incorporate this information into A&P courses in the form of case studies and concept maps will be discussed.

A110 - Simple, Interactive and Inclusive Learning Strategies in Anatomy and Physiology Courses
Ben Ondimu, Harford Community College, bondimu@harford.edu

Are engagement and retention challenges in your anatomy and physiology class? Join our lively workshop to discover easy-to-implement strategies and hands-on activities that will energize your students and enhance their attention, comprehension, and community. Take away practical strategies and hands-on activities to help transform your classroom into a fun and student-centered environment!

Session 2: May 26 @ 9:45 AM – 10:45 AM

A201 - Using an Equity Critical Lens to Quantitatively Examine Course Disparities
Natalia Caporale, University of California, Davis, ncaporale@ucdavis.edu

This workshop will introduce concepts of critical quantitative theory (QuantCrit) and how they can be implemented to promote a more nuanced, just and equitable analysis of student outcomes in physiology courses. The workshop will also engage participants in discussions on: (1) the meaning of equity from a quantitative perspective, (2) the challenges of working with institutional student data, (3) the importance of intentional definition of student demographics and (4) the responsibility of communicating outcome data using an equity lens. Attendees will see examples of how to apply these frameworks when considering the data to use and research questions.

A202 - Update!! Using Progressive Team Based Concept Mapping to Increase Student Engagement, Feelings of Belonging and Understanding of Core Concepts in an Introductory AP1 course
Beth Eischen, Hamilton College, beischen@hamilton.edu

Concept mapping and cooperative learning are proven methods of active learning that increase student understanding and engagement. In my classroom, I have found success in combining team based learning with EBIPs, including concept mapping, in a progressive round robin style circuit. In this workshop, attendees will be guided through a few exercises that progress in stages (think progressive dinner!!) that have worked with AP1 curriculum to increase student understanding and engagement through team based learning and have potential to improve outcomes in an all day course format.

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A203 - Incorporating Nutrition Case Studies and HHMI BioInteractive's How to Read a Nutrition Label Interactive in Anatomy and Physiology

Holly Basta, Rocky Mountain College, holly.basta@rocky.edu, Sam Loftus, Oregon Coast Community College, sam.loftus@oregoncoast.edu

Sponsored by HHMI

Concept mapping and cooperative learning are proven methods of active learning that increase student understanding and engagement. In my classroom, I have found success in combining team based learning with EBIPs, including concept mapping, in a progressive round robin style circuit. In this workshop, attendees will be guided through a few exercises that progress in stages (think progressive dinner!!) that have worked with AP1 curriculum to increase student understanding and engagement through team based learning and have potential to improve outcomes in an all day course format.

A204 - "Um, Actually": Adapting the Internet Game Show into a Classroom Review Game

Jacques Guillot, Indiana University School of Medicine—Bloomington, jaguillo@iu.edu

Um, Actually is the internet game show where nerds do what they love best—correcting other nerds. This is a quiz show where contestants read a statement about pop/nerd culture, find the one incorrect part, and correct it. I have adapted this gameshow into a review game in a medical-level anatomy classroom. The format is suitable for any subject! In this workshop, I will demonstrate the format to participants, teach them how to use digital buzzers, and give them tools and resources to host the game in their own classrooms.

A205 - Flipping the Script: Students as Lecturers.

Chad Wayne, University of Houston, cwayne@uh.edu

A student who can think and communicate clearly is well prepared to enter the scientific or health-associated professions community where they will need to use these skills regularly. The flipped classroom forces students to engage course material more deeply than the standard lecture format, but finding a cooperative, active learning strategy to develop student engagement, teach critical thinking, build communication skills, and encourage student accountability can be a challenge. This talk will focus on how to design and implement a flipped classroom environment that attempts to do just that through group discussion and student presentations.

A206 - Teaching Tissues: Tips, Tricks & Tools

Tracy Ediger, Georgia State University, tediger@gsu.edu

In a two-semester A&P course, histology is the first topic covered that is likely to be completely new to our students. In addition, tissue identification is a deeply visual skill. Because of these factors, histology is an exciting and possibly challenging topic to teach. In this workshop, we will first review fundamental principles of tissue identification appropriate for introductory students. We will then discuss a variety of different histology activities, assignments, and games that may be used with students in either lecture or lab. Come to discuss your favorite activities or pick up something new!

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A207 - The Anatomy & Physiology of AI
Kathleen Ahles, Tarrant County College, kathleen.ahles@tccd.edu

We already teach about the human body in terms of what's there and how it works - so why not apply that same approach to artificial intelligence (AI)? In this workshop, we'll explore practical ways to introduce students to the anatomy of effective prompts and the physiology of biased or inaccurate outputs. We'll explore several different learning activities, each highlighting a different aspect of AI literacy, and we'll even review some student submissions. You'll leave this workshop with actionable ideas of how to help your students engage with AI more critically… even if you aren't an AI expert!

A208 - Lab Practicals: Gold Standard of Assessment or Bane of Your Existence?
Carol Britson, University of Mississippi, cbritson@olemiss.edu, Carla Carr, University of Mississippi, cbcarr@olemiss.edu, Josh Schmerge, University of Mississippi, jdschmer@olemiss.edu

Do your students dread taking lab practicals? Do you procrastinate about setting up lab practicals because it takes so much time? Are you wondering how many ways 'sternocleidomastoid' will be spelled this term? Join us as we share the evolution of lab practicals at our institution and how we can prepare, conduct, grade, and dismantle lab practicals for 650+ students across three lab spaces, two buildings, and three courses in less than one week. Our process is easily scalable, resistant to attempted cheating, and allows for multiple versions of the same practical, even within the same testing group!

A209 - Bridging the Gap Between Online Lectures and Lab Learning in Anatomy & Physiology
Nahel Awadallah, Nash Community College, nwawadallah755@nashcc.edu

As A&P classes begin to transition to hybrid formats, many students have difficulty connecting their on-line lectures to the hands-on lab experience. The purpose of this workshop is to share a variety of practical strategies that can be used to develop "bridge" activities as well as use virtual tools to help prepare students for the lab experience while maintaining both the rigor, alignment and engagement across the asynchronous lecture and in-person lab experiences.

A210 - Piecing Together the Leukocyte Puzzle: Using Augmented Reality and Jigsaw Pedagogy to Differentiate White Blood Cells
Ranya Taqieddin, Saint Charles Community College, rtaqieddin@stchas.edu

This session presents an interactive activity integrating augmented reality (AR) with a jigsaw pedagogy to teach leukocyte morphology in Anatomy and Physiology. Using personal mobile phones, students engage with augmented images to examine distinguishing features like nuclear shape and granulation. The jigsaw structure operationalizes active learning by positioning students as content experts responsible for peer instruction, fostering accountability and collaboration. This innovation addresses visualization challenges inherent in microscopy-based hematology education. Assessment data demonstrates improved student ability to accurately identify and differentiate leukocytes. The activity is adaptable for AR-enhanced or traditional instruction, maximizing accessibility and supporting broad adoption of evidence-based practices.

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A211 - Body of Evidence: Implementing a High-Impact Practice in Anatomy and Physiology

Kathy Burleson, Hamline University, kburleson01@hamline.edu

High-impact education practices (HIPs) have substantial benefits for students who complete them, particularly those from historically underserved groups. In this workshop, I will share what I learned from piloting a HIPs collaborative project - Body of Evidence - in an undergraduate anatomy & physiology course. Students developed a research-based proposal that analyzed a health disparity linked to historical injustices in biomedical science, and recommended evidence-based interventions in a public-facing presentation. I will describe the successes and challenges of scaffolding, implementing, and grading these open-ended, long-term, creative projects, as well as present evidence that the experience increased student empathy.

A212 - Engaging Students in a Classroom and preparing them for an AI-driven Future

Murray Jensen, University of Minnesota, msjensen@umn.edu

The session will be co-facilitated by a Collaborative Learning Guru and a Learning Solutions architect. Together, they will lead a workshop on what faculty can do right now to engage students in their class as artificial intelligence continues to evolve rapidly. Participants are encouraged to bring a laptop, tablet, or smartphone so they can join an AI-enhanced cooperative quiz.

Session 3: May 26 @ 11:00 AM – 12:00 PM

A301 - Crafting Your Teaching Philosophy: Strategies for Motivating All Students to Learn

Marisol Lopez, Boston University Chobanian & Avedisian School of Medicine, mlopez@bu.edu, Brenda Del Moral, Southern Illinois University School of Dental Medicine, bdelmor@siue.edu

Starting a teaching journey can be both exciting and challenging. A clear and strong teaching philosophy reflects your values as an educator and approach to student learning. This interactive workshop aims to help participants shape their teaching philosophy through the exploration of a variety of pedagogical approaches that contribute to designing a well-structured and engaging course. At the end of the workshop participants will: 1) Identify and draft key elements of a teaching philosophy that supports all learners; 2) Develop awareness of student-centered teaching strategies; and, 3) Create a draft of a teaching activity to use in their own classroom.

A302 - HAPS Exam Program 2026 Update: Learn More about HAPS Comprehensive A&P and Stand-alone Anatomy Exams

Janet Casagrand, University of Colorado Boulder, janet.casagrand@colorado.edu, Valerie O'Loughlin, Indiana University School of Medicine - Bloomington, vdean@iu.edu, Dee Silverthorn, University of Texas at Austin, silverthorn@utexas.edu

The HAPS Exam Program leadership will provide information about the HAPS Comprehensive A&P and stand-alone anatomy exams. These exams allow you to compare your class performance with other schools, assess learning gains, and/or examine equity and diversity issues in learning. Learn about these validated exams with their secure online testing platform and proctoring options! We explain exam purchases and provide examples of ways to utilize and fund them at your institution. We also will update you on development of two additional A&P exam versions, which will have a balance of lower and higher order questions focused on global concepts.

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A303 - Active Anatomy: Practical Active Learning Strategies for the A&P Classroom
Jaclyn Cobb-Susa, Collin College, jcobb@collin.edu

The Gail Jenkins Teaching and Mentoring Award Winner

Struggling with silence after asking a question? Battling the "mid-lecture glaze"? Active learning is the antidote to student passivity, but moving beyond the standard lecture can be daunting. We will explore high-impact active learning strategies with inexpensive materials. Participants will move beyond "listening" to "doing" by modeling these techniques in real-time. We will also address common friction points, including time constraints in the classroom. Attendees will leave with a toolkit of activity templates and a roadmap for transforming their classroom into a dynamic hub of engagement.

A304 - From Memorization to Deliberation: Mock Trials as a Framework for Teaching Physiology Through Evidence and Argument
Nathaniel King, professornmking@gmail.com

HAPS Conference Travel Award Winner

This workshop examines a shift in Anatomy & Physiology from memorization to deliberation by using structured mock trials as a central framework for course design. Longstanding practices, including content-heavy coverage, memorization-centered assessment, passive-lecture defaults, and procedurally scripted labs, are explicitly challenged and redesigned. In these trials, students work collaboratively to evaluate physiological claims, analyze shared data, and defend conclusions using evidence and argument. Participants will examine a practical, scalable framework and concrete examples of course redesign that prioritize intellectual agency, coherence, and accountability, focusing on what students can meaningfully do with physiology rather than what they recall.

A305 - Interactive "Dungeon Crawl" Case Studies
Susan Weiner, Roosevelt University, sweiner02@roosevelt.edu

Most case studies present a complete picture: choices are already made in the story. Students just answer questions about what it means and what to do next. In "dungeon crawl" case studies, the patient presents the way they would in an office visit: with specific complaints, but very little additional information. The students request tests and do treatments and get responses based on those. In this workshop, I will show an example interactive case study, and then groups will outline one with tips on creating it from scratch, adapting a case study, or with the aid of AI.

A306 - A.I. in Anatomy & Physiology: Practical Ethical, and Effective Implementation
Juanita Jellyman, California State Polytechnic University Pomona, jkjellyman@cpp.edu, Luis Rosado, Worcester State University, lrosado@worcester.edu, Zach Murphy, St. John Fisher University, zmurphy@sjf.edu, Brenda del Moral, Edgewood University, bdelmoral@edgewood.edu

Generative AI is rapidly influencing higher education, creating both opportunities and challenges for anatomy and physiology instruction. This interactive workshop provides a practical framework for responsible AI use within the society, in course preparation, and classroom practice aligned with HAPS' mission of teaching excellence. Participants will examine discipline-specific scenarios and discuss risks such as inaccuracy and bias. Together, we will consider ways to guide ethical and effective AI use that supports our profession and student learning while preserving academic integrity and human expertise.

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A307 - Lights, Camera, A&P: Using Cinematic Clips to Reinforce Anatomy and Physiology concepts

Jeffery Speth, Weber State University, jefferyspeth@weber.edu, Justin Burr, Weber State University, justinburr1@weber.edu, Maddison Johnston, Weber State University, maddisonjohnston@weber.edu

Certain research suggests that utilizing content-adjacent clips from film or television may increase learner engagement and help students make memorable connections to course material. In this workshop, our team will share and dissect a sampling of pop-culture cinematic sequences that we have found useful as lesson hooks, memory aids, or critical thinking activities in anatomy and physiology instruction. Session attendees will be invited to observe how we leverage these sample scenes for their educational value and to reflect on opportunities for replicating this practice in their own courses where suitable.

A308 - Classic Concepts Re-visited (and Does it Matter?)

Patricia Brady, Johnson & Wales University, pmbrady@jwu.edu, Matthew Abbott, Des Moines Area Community College, mabbott1@dmacc.edu

Sponsored by Pearson

There are many concepts in A&P that are truly classic, long held understanding of structure and function. Some of these classics have been challenged or revised due to new evidence. This interactive workshop has two goals: 1) To present an overview of the revised understanding of some classic concepts (motor homunculus, dermatome maps, respiratory mechanics, derivation of leukocytes, the bicarbonate buffer system) and 2) To promote discussion of how new information might alter what we teach our students (i.e. does it matter). How important is it to include these changes in our teaching?

A309 - Bodies Under Stress: Science and Strategies

Liz Co, Boston University, eco@bu.edu, Hilary Engebretson, Whatcom Community College, 237 Kellogg Road Bellingham WA 98226

Sponsored by Cengage

In this interactive workshop we will frame stress as a physiological phenomenon in the body, not in your head! Stress can be either helpful or harmful to performance in stressful environments (like taking an exam). We use an activity/game to help illustrate to students how the choices they make during a stressful time can be helpful or harmful. All materials covered in the workshop are yours to take back to your classroom to facilitate conversations or lectures with students about both physiology and their own wellness.

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A310 - Alt Text – What, Why, When, Where, & How

Youlonda FitzGerald, Texas Woman's University, yfitzgerald@twu.edu, Heather Armbruster, Southern Union State Community College, harmbruster@suscc.edu, Pat Clark, Indiana University, patclark@iu.edu, Jenna Jarvis, State College of Florida, jarvisj@scf.edu, Jennifer Stokes, Southwestern University, stokesj@southwestern.edu, JP Swigart, Carle Illinois College of Medicine, swigart@illinois.edu, Diane Tice, SUNY Morrisville, ticedg@morrisville.edu

Web Content Accessibility Guidelines (WCAG) 2.1 are now in effect for public education, meaning course content and materials made available to students should meet these criteria. One area of concern is the alternative text (alt text) required for all figures. In this workshop, the HAPS Curriculum and Instruction Accommodations subcommittee will review WCAG compliance guidelines and suggestions for appropriate alt text. Presenters and participants will discuss alt text examples of varying quality and will practice creating alt text for a variety of A&P images, including: histology, tables and diagrams, and labeled images.

Session 4: May 26 @ 1:15 PM – 2:15 PM

A401 - Reframing A&P through a Lens of Diversity

Mindi Fried, Springfield College, mfried@springfieldcollege.edu

HAPS Conference Travel Award Winner

In A&P, diversity is the rule rather than the exception. If that is true, then students who are only using rote memorization of "normal" (meaningless anyway), are not adequately being prepared for a career working with real people. This reframing requires an emphasis on pattern recognition and process understanding over rote memorization. This year, I have attempted this reframing in my Human A&P I courses last semester, and in my Human A&P II courses this semester. I will share my experiences with this reframing in the workshop, and open up discussion on better preparing students for their future careers.

A402 - "Designing Case Studies from Pathohistology Database for Classroom or Research"

Sharada Gollapudi, San Jacinto College, south campus, sgollapudi@sjcd.edu, Deborah Merritt, University of Hawaii, dmerritt@hawaii.edu, Hiranya Roychowdhury, NMSU-DACC, hroychow@nmsu.edu, Soma Mukhopadhyay, Augusta University, soma.mukhopadhyay.08@gmail.com, Steven Semadeni, University of Nebraska-Lincoln, ssemadeni2@huskers.unl.edu, Tiffany McFalls-Smith, Elizabethtown Community & Technical College, tmcfalls0001@kctcs.edu

Since 2023, the Histology Taskforce has been cataloging and curating HAPS' vast repository of histological images. Current Taskforce efforts include the development of user-friendly pedagogical tools for classroom or research. Under the guidance of experienced case study developers, workshop participants will explore these members-only, pathologist-curated resources and work to create their very own clinically and pedagogically meaningful tools to connect tissue-level abnormalities to organ function, clinical presentation, and underlying pathophysiology. The goal is to strengthen understanding of microscopic structure–function relationships while scaffolding case studies from basic descriptive prompts to higher-order analytical questions aligned with HAPS learning outcomes.

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A403 - An Active Learning Approach to Urine Formation
Lori Fetter, Dayton School of Medical Massage, lkfetter@gmail.com

The formation of urine in the nephron can be a very intimidating concept to A&P students. This workshop explores an active learning exercise facilitated by a faculty member to assist in re-enforcing the morphological and physiological interrelationships involved in the process.

A404 - A Hands-On, Active Learning Approach to Teaching Anatomy Using Multiple Resources
Lynne Ross, Retired - Pueblo Community College, lynneross719@gmail.com

Sponsored by Anatomy in Clay

Pueblo Community College centralized its anatomy education resources into the Human Anatomy Learning Center (HALC), a hands-on learning facility utilizing Anatomy In Clay™, cadavers, Anatomage Tables, and traditional models. The HALC provides engaging, customized learning activities for students in health professions and biology programs. Students rotate through collaborative learning stations guided by "Think sheets" to meet curriculum objectives while receiving instructor support. This active learning approach has improved critical thinking skills, as shown by student learning assessments. Over eight years, student satisfaction surveys consistently rate the HALC experience between 4.8 and 5.0 on a five-point scale.

A405 - Head Cases: How to Curate, Edit, and Design Clinical Case Studies for A&P Courses
John Neisser, Penn State, jxn418@psu.edu

Case studies are an invaluable tool in A&P instruction, especially since the majority of our students are interested in health care careers. This workshop will review common types of medical records, offer tips on designing your own case studies, and will discuss utilizing case study databases and artificial intelligence to curate/design cases.

A406 - Writing for the HAPS Educator: Promote Your Work and Add to Your Teaching Portfolio
Brenda Del Moral, Southern Illinois University Edwardsville, bdelmor@siue.edu, Jacqueline Carnegie, University of Ottawa, jcarnegi@uottawa.ca, Carol Britson, University of Mississippi, cbritson@olemiss.edu, Tracy Ediger, Georgia State University, tediger@gsu.edu , Elizabeth Granier, St. Louis Community College, egranier@stlcc.edu, Joanne Savory, University of Ottawa, jsavory@uottawa.ca

Sponsored by HAPS

Join us for this workshop where we will explore categories of manuscripts published by the HAPS Educator, brainstorm ideas with editors and colleagues for your publishable work, and discuss how our reviewers and editorial staff work together to enhance your manuscript. We want to help you share your ideas, data, and expertise with fellow educators. The HAPS Educator is published 3 times annually with no cost for authors, has a short turn-around time, provides helpful guidance for manuscript revision, links each article with a DOI, and is indexed with the Education Resource Information Centre (ERIC).

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A407 - From Memorization to Meaning: Active Learning Strategies for Anatomy and Physiology

Morgan Castiblanco, University of North Georgia, thecastiblancos@outlook.com,
Catherine Whiting, University of North Georgia, cathy.whiting@ung.edu

Applying anatomy and physiology knowledge requires the use of higher-order cognitive skills, yet many students rely more heavily on lower-order skills such as remembering and understanding when preparing for exams. This interactive workshop is designed to support A&P educators in moving students beyond memorization through the implementation of active learning strategies. Join us as we engage in hands-on activities that model classroom-tested strategies aimed at promoting higher-order thinking by challenging students to identify gaps in their understanding and test the limits of their knowledge. Leave with an implementation plan for incorporating activities that elevate student thinking and support effective learning.

A408 - Innovative Use of 3D Printed Structures (3DPS) in the Undergraduate Classroom

Elita Partosoedarso, OntarioTech University, elita.partosoedarso@ontariotechu.ca

We bulk printed 3DPS to use in our A&P classes, including a 2-piece heart, adult and fetal skulls, vertebrae, bones of the knee and elbow joints and of the pectoral and pelvic girdles because we had easy access to a 3D printing lab. Students worked in established groups of 2-3 manipulating the 3DPS using guided handouts. An in-depth literature search revealed that use of 3DPS is still uncommon in general undergraduate A&P classes, despite the increasing affordability of this interactive tool. In this workshop, we will showcase the 3DPS and printed materials and solicit feedback for future iterations.

A409 - Reducing Student Withdrawals in Asynchronous Online Courses: Implementing the RESILIENT Student Success Framework

Nahel Awadallah, Nash Community College, nwawadallah755@nashcc.edu

The results of this workshop are based on a case study done at Nash CC that examined withdrawal rates in asynchronous online courses. The workshop will be conducted using the Student Engagement framework developed by George Kuh to identify both student, faculty, and institutional variables that contribute to a student's withdrawal. Participants will see the results of the use of the RESILIENT student support modules to reduce the number of students withdrawing from courses (a 34.2% reduction) and they will also engage with practical strategies to help all learners persist in their pursuit of success in online learning.

A410 - From Visualization to Application: Activating 3D Anatomy for Deeper Learning

January Schultz, University of Central Arkansas, jschultz@uca.edu

Three-dimensional visualization tools are increasingly common in anatomy classrooms, yet many instructors struggle to move beyond passive demonstration toward meaningful engagement. This interactive workshop presents a structured framework for integrating 3D anatomy platforms with movement analysis, case-based reasoning, and structured peer-to-peer lab activities. Using examples from undergraduate and graduate anatomy courses in health science programs, participants will experience adaptable exercises that promote spatial reasoning, critical thinking, and application beyond memorization. Select activity templates and adaptable design frameworks will also be shared to demonstrate scalable approaches to active anatomy instruction.

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Session 5: May 26 @ 2:30 PM – 3:30 PM

A501 - Feel the Phys! Get Hands-on with the Latest Sensor Technology
Sophie Duong, ADInstruments, s.duong@adinstruments.com, Jessica Nguyen, ADInstruments, j.nguyen@adinstruments.com

Sponsored by ADInstruments

Providing students with high-quality, real-time physiological data is essential for mastering complex concepts. This hands-on workshop introduces the new PowerLab T1 and PowerLab Sensors, demonstrating their application in undergraduate laboratories. Participants will engage in two live demonstrations: spirometry to quantify respiratory volumes and Hoffman's reflex to explore monosynaptic reflex arcs. We will discuss pedagogical strategies for using these streamlined tools to reduce technical troubleshooting, allowing students to focus on data analysis and physiological mechanisms. Attendees will gain practical experience in setup and data acquisition, leaving with innovative ideas to modernize their physiology curricula and improve student learning outcomes.

A502 - Practice and Feedback are Essential for Learning
Michael Koot, McGraw Hill Education, michael.koot@mheducation.com

Sponsored by McGraw Hill

This workshop will focus on the essential role of spaced practice, retrieval practice, feedback, and metacognition for learners in anatomy and physiology courses. We will explore how different assignment types in McGraw Hill's Connect courseware leverage these evidence-based techniques. Robust reporting for both instructors and learners make it clear which concepts are the most challenging and require remediation. When effectively applied, these strategies enhance teaching and learning, and ultimately student success.

A503 - Scaffolding Success in A&P Lecture: Active Learning Modules for Neuron Physiology and the Cardiac Physiology
Kaitlin Bonner, St. John Fisher University, kbonner@sjf.edu, Zachary Murphy, St. John Fisher University, zmurphy@sjf.edu

We know that evidence-based approaches like high-structure course design and active learning can significantly close achievement gaps in STEM courses. Yet, incorporating these practices are particularly challenging in Introductory Human Anatomy and Physiology courses due to the vast amount of content. In this interactive workshop, participants will engage with two scaffolded modules - neuron physiology and cardiac physiology, exploring how deliberate hands-on engagement, peer collaboration, and application exercises promote deep learning across diverse student populations. We will highlight how we implement these modules in our flipped classroom, but these "plug-and-play" strategies are easily adaptable to a traditional lecture format.

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A504 - PowerPoint Accessibility for Classroom Presentations
Amanda Rosenzweig, Delgado Community College, arosen@dcc.edu

This workshop provides essential guidelines for designing accessible PowerPoint documents (or Google Slides) that meet diverse user needs, including individuals with disabilities. Participants will learn best practices for structuring documents with titles, reading order, using alternative text for images, and formatting hyperlinksfor screen readers. The session will also cover built-in accessibility tools in Microsoft PowerPoint to check and enhance document accessibility. By the end of the workshop, attendees will have practical skills to create presentations that are clear, navigable, and inclusive for all users.

A505 - Modern Anatomy & Physiology: Digital Curriculum, Case Studies, and Active Learning
Kelly Griesbach, eDynamic Learning/Pearson, kelly.griesbach@edynamiclearning.com

Sponsored by eDynamic Learning

Anatomy & Physiology can feel overwhelming for students—especially when it's taught from a massive textbook. This session introduces a modern, interactive, and immersive digital curriculum where students learn by doing and apply concepts through real-world investigation. This 60-minute workshop showcases a digital, systems-based curriculum that teaches anatomy, physiology, and pathophysiology through chunked, digestible lessons designed for today's device-based learners. Teachers will explore a curriculum that weaves in animations, videos, diagrams, and hands-on modeling activities to increase student comprehension. Participants will receive access to a demo account to explore embedded activities, lesson plans, discussions, cumulative projects, assessments, and labs.

A506 - HAPS Best Practices for Teaching Anatomy & Physiology Online
Kathleen Ahles, Tarrant County College, kathleen.ahles@tccd.edu, Chinenye Anako, Nightingale College, ccanako@gmail.com, Heather Armbruster, Southern Union State Community College, harmbruster@suscc.edu, Cailtin Burns Kim, County College of Morris, cburnskim@ccm.edu, Mindi Fried, Springfield College, mfried@springfield.edu, Mary Schilling, Northern Kentucky University, schillingm2@nku.edu

Do you teach online or blended A & P courses? Or, are you interested in learning the best practices for teaching A&P online? Join HAPS' eLearning subcommittee as we introduce the forthcoming HAPS Best Practices for Teaching Anatomy & Physiology Online. We'll offer research-backed principles for creating high quality virtual learning experiences and provide practical examples of how we've integrated them into our own courses. You will also have the opportunity to contribute your feedback to help us develop this resource.

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A507 - Wikipedia Editing as an Ancillary Learning Modality to Teach Critical Thinking around Information Sources, Formal Writing for a General Audience, and the Peer Review Process in the Life Sciences

Tanya Cupino, College of Western Idaho, tanyacupino@cwi.edu

Since 2001, Wikipedia has grown from experimental free encyclopedia to an essential resource for university students, search developers, junior doctors and LLM trainers. In 2010, the Wiki Education Foundation was founded to support educators interested in improving academic content on Wikipedia. This presentation introduces Wikipedia's content assessment scale using the "Anatomy" and "Physiology" articles as case studies, summarizes the WikiEdu training modules available to educators that support critical thinking, formal writing and peer review skills, and presents diverse classroom applications that can be adapted to your curriculum while providing meaningful improvements to the public-facing Anatomy and Physiology content on Wikipedia.

A509 - Skin: A Holistic Model to Study Human Evolution, Health and Culture

Soma Mukhopadhyay, Augusta University, soma.mukhopadhyay.08@gmail.com

The skin, our body's largest organ, acts as a dynamic barrier protecting against environmental threats, regulating different body physiology and Vit D synthesization. The history of our evolution shows human skin evolved traits such as varied pigmentation to protect against UV exposure. Normal skin architecture shows combination of cell varieties, intricate layering and wonderfully designed adhesion complexities involving protein fibers and serves as a crucial indicator of internal health and remain as an organ of debate. This workshop will show how to use skin as a model to teach anatomy and histology from introductory classes to upper-level histopathology courses.

A510 - Using Building Blocks to Build an Understanding of Excitation-Contraction Coupling

Christopher Donnelly, Loyola University Chicago, cdonnely4@luc.edu, Matthew Bruder, Loyola University Chicago, mbruder@luc.edu

Are you looking for an interactive hands-on activity you can do in your course to help students understand Excitation-Contraction coupling? This interactive workshop will introduce a hands-on Lego-based activity that works in both the lab and lecture setting. You will use building blocks to see how your students will use this activity to build the axon terminal, T-tubules filaments and more, at a low cost and learn practical strategies for implementation. This engaging approach promotes visual-spatial understanding and kinesthetic learning, for both the attendees and their future students.

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Session 6: May 26 @ 3:45 PM – 4:45 PM

A601 - Reviewing Manuscripts for the HAPS Educator: A Valuable Scholarly Activity to Add to Your Teaching Portfolio

Jacqueline Carnegie, University of Ottawa, jcarnegi@uottawa.ca, Brenda del Moral, Southern Illinois University Edwardsville, bdelmor@siue.edu, Carol Britson, University of Mississippi, cbritson@olemiss.edu, Tracy Ediger, Georgia State University, tediger@gsu.edu, Elizabeth Granier, St. Louis Community College, egranier@stlcc.edu, Joanne Savory, University of Ottawa, Joanne.Savory@uottawa.ca

Please join us to explore the steps involved in reviewing manuscripts for the HAPS Educator. Reviewing manuscripts, be they educational research articles, literature updates pertaining to A&P education, or descriptions of novel teaching approaches, is an excellent way to become familiar with advances in A&P education made by HAPS members. This scholarly activity can support promotion applications and your contribution is acknowledged in each journal edition. Guidance is provided when undertaking your first review; you will be asked to review maximum 2-3 manuscripts annually. Manuscript review can promote collaborations in A&P teaching and/or inspire you to write your own submission!

A602 - The Circadian Audit: Bridging Unani Medicine and Modern Chronobiology to Teach Homeostasis

Ubaidullah Khan, Aligarh Muslim University, Aligarh, U.P., INDIA, ubaidullahkhan91@gmail.com

This classroom activity, the "Circadian Audit," makes abstract regulatory concepts like homeostasis tangible by bridging Unani medicine's Asbab-e-Sitta Zarooriya with modern chronobiology. Students log three days of personal habits, analyzing them through a Dual-Framework. They compare ancient concepts like "innate heat" (Hararat-e-Ghariziya) to modern SCN function and peripheral clock synchronization. Supporting HAPS Learning Outcomes 1.1.6, 1.1.7, and 2.3, the audit transforms students into active investigators of their own physiological rhythms. This interdisciplinary approach fosters deep conceptual understanding while celebrating the multicultural roots of science.

A603 - From Passive to Participatory: Integrating Live Physiological Data and Guided AI Prompts in Anatomy and Physiology Lectures

Kaushik (Kash) Dutta, University of New England, kdutta@une.edu

Sponsored by ADInstruments

Gateway A&P courses are adopting blended learning for diverse learners, yet lectures often remain siloed from labs, particularly in large classes. This workshop enhances an established blended approach by incorporating in-lecture live physiological recordings from portable sensors, accompanied by guided AI prompts to reinforce comprehension. Rather than searching for answers, students use prompts to connect concepts with real-time data. Biological signal recordings, like muscle EMG, offer visualization of complex physiology and meaningful learning context. The focus is on strategies that integrate seamlessly into existing courses, even those with limited lab space and resources, ensuring effective and accessible education.

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A604 - Virtual Anatomy and Physiology Courses
Jill Feinstein, Richland Community College, jfeinste@richland.edu

This workshop will provide strategies to develop and successfully deliver A&P 1 and A&P 2 courses in a fully virtual format. Participants will learn best practices to deliver content engaging content, and strategies for making cost-effective home-use lab kits for these courses.

A605 - Beyond the Structures List: The Evolution of the Body Builder Project
Ann Raddant, University of Wisconsin-Milwaukee, raddant@uwm.edu

The Body Builder Project began during emergency online instruction as I sought to engage students in drawing, labeling, narrating, and synthesizing anatomical content. This session traces the project's progression and showcases its newest iteration, integrating Anatomy & Physiology Revealed (APR) assignments and digital resources. This workshop will showcase how the project has evolved to provide clearer guidance, stronger scaffolding, and more authentic demonstrations of learning that can be adapted to a variety of instructional scenarios.

A606 - Converging in the Classroom II: A Deeper Dive Into Supporting Your Neurodivergent Students
Erin Amerman, Florida State College at Jacksonville, ecamerman@aol.com, Elise Amerman, Arizona State University, eliseamerman@aol.com

Did you know that your neurodivergent students are about half as likely to graduate as your neurotypical students? At the last HAPS, we explored why neurodivergent students may struggle. Now, we'll do a deeper dive into how you can be a key part of improving this statistic. Join two neurodivergent presenters to learn how to overcome the double empathy problem, improve communication, and reach out to this often misunderstood population. And if you missed our previous workshop, don't worry, as we'll start with a short recap!

A607 - From Dissection to Direction: Applying Self-Directed Learning in the Anatomy Lab
Grace Pinhal-Enfield, Rutgers Robert Wood Johnson University, pinhalgr@rwjms.rutgers.edu, Gail Elliott, Rutgers Robert Wood Johnson Medical School, ge111@rwjms.rutgers.edu

Self-directed learning (SDL) is essential for fostering independent learning during training and in professional practice. This workshop introduces an SDL activity designed to encourage learner curiosity while incorporating structured communication and collaboration strategies commonly used in clinical settings to promote accountability, shared understanding, and professionalism. The approach supports the development of core competencies and aligns with common accreditation expectations related to self-directed learning and narrative assessment. Participants will engage in and then design a case-based exercise assessed with a rubric evaluating knowledge, clinical reasoning, collaboration, and professionalism, alongside strategies for delivering effective formative narrative feedback.

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A608 - The Neurophysiology of Making Memory Stick
Adam Fisch, Ditki, Medical & Biological Sciences, fisch@ditki.com

Sponsored by Draw It To Know It

This talk explores the neurophysiology behind why drawing as an active learning strategy makes memories stick, focusing on how dual coding theory links visual and verbal representations to strengthen encoding. It will highlight how the act of drawing recruits prefrontal task-sequencing networks, increasing attention, organization, and meaningful engagement with new information. Together, these mechanisms explain how drawing transforms passive content into durable, retrievable memories.

A609 - From Core Concepts to Competencies, Developing A&P Curriculum to Encourage Mastery.
James Clark, Scientific Health: Education and Human Performance, james.clark@scientific-health.org, Chinenye Anako, Creighton University School of Medicine Phoenix, ccanako@gmail.com, Kristen Metzler-Wilson, University of Kentucky (Department of Physical Therapy, College of Health Sciences), kristen.metzler@uky.edu, Kathleen Ahles, Tarrant County College, kathleen.ahles@tccd.edu, Rachel Hopp, University of Louisville, rachel.hopp@louisville.edu

Developing an effective curriculum requires purposeful scaffolding and mapping of course concepts across topics, a daunting task for A&P educators given the volume of content to cover. But what if one could link everything based on core concepts and an overarching set of competencies? This workshop provides HAPS members a chance to discuss the forthcoming core concepts and updated HAPS curriculum guidelines to map to learning goals for your course. By the workshop's end, attendees will have a greater understanding of how to encourage all learners to achieve meaningful mastery of course material.

A610 - The Integration of Social Determinants of Health in Anatomy Case Studies
Eva Mannino, Indiana University School of Medicine - Bloomington, emannino@iu.edu, Stacey Dunham, Department of Anatomy, Cell Biology & Physiology, Indiana University School of Medicine, dunhams@iu.edu

Social determinants of health (SDOH) are vital to health professional education, yet curricular and time constraints often confine them to isolated sessions. What if they were woven into core science courses instead? This interactive workshop invites participants to reimagine gross anatomy case studies through an SDOH lens. Attendees will explore the rationale for integration, examine practical design strategies, and begin developing their own socially informed cases. Participants will leave with adaptable tools and concrete examples to create engaging gross anatomy cases that deepen student understanding of SDOH, health disparities, core anatomical concepts, and clinical relevance.

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Session 7: May 27 @ 8:30 AM – 9:30 AM

B101 - Success Scrapbooking: Promoting Resilience and Authenticity
Karen Goodwin, Texas Woman's University, KGoodwin2@twu.edu

As noted by authors Matsuo (2022) and Healy & Murphy (2023), reflections on success are a key aspect to developing competent individuals who produce authentic work–in our case, students. Research notes the importance of fostering meaningful, purposeful reflections that are not highly formalized as a tool for guiding the development of resilience. This workshop intends to demonstrate such an activity through "success scrapbooking" in the A&P lecture classrooms. Healy N, Murphy CE. Case reports, reflective practice and learning to succeed. Anaesth Rep. 2023… Matsuo, M. (2022). Reflection on success in promoting authenticity and proactive behavior: A two-wave study. Current Psychology…

B102 - The Anatomy of Belonging: Utilizing Student Feedback and Climate Data to Drive Meaningful Change
Shannon Kispert, Webster University, shannonkispert@webster.edu

Undergraduate persistence, engagement and success in STEM are strongly influenced by a student's sense of belonging within their academic environment. To better understand student experiences within our own programs, we conducted a climate survey to evaluate student perceptions of belonging and community. While students reported positive experiences with faculty, responses indicated comparatively lower scores in areas related to community, belonging, and connection. This session will explore intentional interventions to strengthen belonging in anatomy and physiology classrooms and departments, with emphasis on relational teaching approaches and community-building strategies that support student connection, engagement, and long-term persistence in STEM.

B103 - Active Learning in the College Classroom: A Practical Tool to Help with Lesson Design
Zachary Murphy, St. John Fisher University, zmurphy@sjf.edu

This workshop will provide you with a practical tool and a variety of resources to design and implement active learning in your classroom. We will demonstrate a lesson planning framework that helps you move beyond traditional lectures and create engaging, student-centered activities. During the session, you'll work through real-world examples and get a chance to apply the tool to your own course content. We will provide you with new ideas, innovative resources, and a clear method for structuring your lessons. You'll leave the workshop with an active learning lesson plan and the confidence to create more.

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B105 - Anatomy of a Multiple Choice Question
Brian Hill, Via College of Osteopathic Medicine, bhill@vcom.edu

As A&P instructors, we test our students regularly, often utilizing multiple choice exams. Many of us merely imitate our former instructors in terms of constructing multiple choice questions (MCQs) as we have had no formal training in this area. The literature says that this lack of formal training results in poor construction quality and an abundance of MCQs written to test lower cognitive levels or obscure, unimportant factoids. This workshop will focus on correcting the most common technical flaws and how to write MCQs that test to higher cognitive function.

B106 - Generative AI and Instructional Design in a Flipped Anatomy and Physiology Classroom
David Murray-Stoker, Clayton State University, DavidMurray-Stoker@clayton.edu

Sam Drogo Technology in the Classroom Award Winner

I present a pedagogical workflow for designing activities for a flipped anatomy and physiology classroom. Using generative AI to assist instructional design, activities are aligned to learning objectives and scaffolded by Bloom's taxonomy. Activities vary in format (individual, pairs, small groups, whole) and require minimal preparation, generating a bank of 7-15 potential activities for each lecture. Student performance on pre-class quizzes guides the selection of activities during flipped sessions, allowing targeted clarification of misunderstandings and reinforcement of comprehension. With the aid of generative AI, the benefits of a flipped classroom are amplified by building student-centered learning into each class session.

B107 - The First day of Class: They'll Want to Come Back for More!
Tom Lehman, Coconino Community College, tom.lehman@coconino.edu

First impressions set the tone for the entire course. Make the most of that first day. Come learn some simple techniques for the integration of group collaboration, terminology usage, and microscopy and model experience. Stations include "Clay anatomy", "How to slice a banana", "Circle the osteocyte", "Which way is lateral", and "Which jar is pseudostratified." Your students will leave that day with applicable knowledge, an idea of what to expect in the course, and the desire to come back for more.

B108 - "Where Am I?" Using Anatomical Rosettes and 3D Models to Address Dissection Video Disorientation
Alison Camero, University of Nebraska Medical Center, acamero@unmc.edu

Close-up dissection videos often trade spatial context for detail, leaving students struggling to discern orientation. When the camera rotates, anatomical perspective vanishes. This workshop introduces an e-module concept that solves "dissection disorientation" by pairing video footage with a synchronized anatomical rosette and a 3D virtual model. Participants will explore the prototype module and engage in a discussion regarding technical feasibility, pedagogical impact, and feature refinement. We will evaluate workflows for integrating these tools into existing resources. Join us with your laptop to contribute to this design-thinking session aimed at providing the constant spatial awareness students need to master anatomy.

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B109 - When Being Wrong Can Make Things Right: Showing students how to learn from mistakes

Jeanette Ferguson, Columbus State Community College, jfergus1@cscc.edu

Students often come from backgrounds in which making mistakes is frowned upon. They don't realize that struggling and making mistakes is the best way to learn new information. This presentation will discuss ways in which assessments and in-class activities can be designed to help students embrace mistakes in order to increase course success. By the end of this session, participants will: 1. Recall background research connecting mistakes to better learning, 2. Recognize the importance of teaching students how to learn from mistakes, and 3. Understand real-life applications of how to encourage students to learn from their mistakes.

B110 - Planning and Implementing a Donor Memorial Ceremony

Bobbie Leeper, Seton Hill University, bleeper@setonhill.edu, Lacy Cleveland, Colorado Christian University, Lakewood, CO, lcleveland@ccu.edu, Danielle Edwards, University of Louisville School of Medicine, Louisville, KY, dnedwa03@louisville.edu, Kelsey Stevens, Briar Cliff University, Sioux City, IA, Kelsey.Stevens@briarcliff.edu, J.P. Swigart, Carle Illinois College of Medicine, Urbana, IL, swigart@illinois.edu, Burhan Gharaibeh, University of Pittsburgh, Pittsburgh, PA, Burhan@pitt.edu, Trisha Waldman, University of Mary, Bismarck, ND, trisha.waldman@stmary.edu, Jeremy Grachan, Rutgers New Jersey Medical School, Newark, NJ, jg1916@njms.rutgers.edu

Donor memorial ceremonies provide an opportunity to honor and reflect on the generous gift of human body donation. The Anatomical Donor Stewardship (ADS) Ethics Subcommittee invites you to attend an interactive workshop focused on planning and implementing a donor memorial ceremony. Presenters will share insights from a variety of institutional contexts, including secular and religious settings, undergraduate and graduate programs, and private and public institutions. Participants will learn best practices, engage in guided discussion, and begin drafting key components of a memorial service. Attendees will leave with a practical planning checklist and a rough draft of a memorial service agenda.

Session 8: May 27 @ 9:45 AM – 10:45 AM

B201 - It's All in Your Head: Exploring the Brain in Radiology with Applications in the Anatomy Classroom

Danielle Edwards, University of Louisville School of Medicine, dnedwa03@louisville.edu

Radiology continues to be essential in identifying normal and abnormal gross anatomy within preclinical and clinical gross anatomy training. Unfortunately, training and/or confidence in reading radiologic images is not freely available to anatomy educators and can create barriers to their use in the classroom. This workshop intends to build the skills of anatomy educators by 1) introducing them to key concepts in CT and MR imaging, 2) use these key concepts to work through images of normal and abnormal anatomy of the brain, and 3) participate in a clinical case of the brain using the two different modalities.

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B202 - Unmasking Preconceptions: A Critical Audit of Anatomy Textbooks
Elyse Vaccaro, Utah Valley University, evaccaro@uvu.edu, Megan Spurlock, Utah Valley University, megan.spurlock@uvu.edu

Traditional anatomy resources often present a "standard" body that fails to reflect human clinical variation. In this interactive workshop, we will examine how narrow representations impact student empathy and professional competency. Participants will conduct a comprehensive audit of popular textbooks, evaluating visual imagery, terminology, and textual coverage. We will move beyond graphics to analyze how language and written descriptions reinforce disparities related to gender, age, race, disability, and body composition. Attendees will gain a practical rubric for evaluating materials and discuss strategies for integrating representative narratives into their curricula, preparing students for the multifaceted reality of clinical healthcare.

B203 - Flex Your Pedagogy Muscles: Building Educational Escape Rooms and Games for the Anatomy and Physiology Classroom
Jeremy Grachan, Rutgers New Jersey Medical School, jg1916@njms.rutgers.edu

Although many anatomy and physiology instructors use basic gamification (e.g., adding game elements to traditional instruction), more complex approaches like serious games, escape rooms, or adapted commercial games are used less often. Barriers often include limited time, confidence, funding, or curricular flexibility, despite strong evidence that game-based learning enhances motivation, knowledge retention, and engagement. In this session, participants will collaboratively develop the foundations for a curricular game, explore free or low-cost tools and supplies, and discuss practical strategies for implementing engaging, game-based activities within existing curricula. Attendees will also share their own approaches to game-based learning in their classrooms.

B204 - Promoting Student Engagement through Active Learning Experiences; Tackling Physiological Mechanisms through Groupwork and Peer Discussions
Kristi Zenchak, Oakton College, zenchak@oakton.edu, Christina Zhang, Oakton College, christinahqzhang@gmail.com

The momentum for active learning continues to rise with the goal of it becoming the gold standard for student learning of challenging concepts and application. Within the A&P curriculum, there are numerous examples of challenging concepts including feedback loops, action potential, cardiac cycle, regulation of blood pressure among others. I developed many active learning experiences that promote a high level of student engagement and interaction. When students work together actively and collaboratively, challenging concepts are brought to life. Several of these activities will be shared to engage participants from the student perspective. Participants can access a collection of activities.

B205 - MCAT Self-Study Program
Brian Hill, Via College of Osteopathic Medicine, bhill@vcom.edu

Although not directly related to teaching Human Anatomy and Physiology, many of us also act as academic advisors and therefore have students who seek guidance in preparing for the Medical College Admissions Test (MCAT). This workshop will describe a self-study method of MCAT preparation that is modelled after how medical schools instruct their students to study for boards. This program has been used for a number of years in a pre-med master's program, and student improvements of 10+ points are common.

B206 - The Fascial System; A Missing Link in A&P Education
Kate Oland-Galligan, Illinois Central College, kv011@icc.edu

It is only in the past 50 years that we have had the technology to observe the fascial system in vivo. This new perspective on this dense, irregular connective tissue has inspired scientists to put more efforts into understanding the importance of the fascial system. At the clinical level, body work therapists have been applying fascia treatments with incredible results. This presentation will walk you through the clinical aspects of treating fascia, what is happening at the cellular level of fascia during myofascial release treatment, as well as take a gross look at the whole body through the lens of an expert level myofascial release therapist. There is a call to make the medical community more aware of the clinical presentation of fascial dysfunction in the forms of fibromyalgia, endometriosis, and many of the autoimmune diseases as well as to generate interest in future research projects.

B207 - What Were Those Students Thinking? Using Exam Autopsies in Real Time to Improve Students' Metacognitive Processing During Examinations and Improve Exam Item Creation
Edgar Meyer, University of Mississippi Medical Center, emeyer@umc.edu

Increases in students' artificial intelligence use has undermined their critical thinking abilities. Exam autopsy tools provide students with frameworks for analyzing rationales behind challenging and incorrectly answered exam items. When these tools are used in real time during and after anatomy and physiology examinations, students analyze their exam thought processes and devise problem-solving strategies to approach exam items and study content more efficiently. This workshop will provide attendees with tips for modifying and incorporating exam autopsy tools into their course examinations to explore and improve students' metacognition for exams and improve their own instruction, assessment administration, and exam item creation.

B208 - Using Functional Pathway Analysis as an Instructional Strategy to Facilitate Student Reasoning in Physiological Problem Spaces
Michelle Murphy, University of North Dakota, michelle.murphy@und.edu

The John Martin Second Timers Award Winner

As learners develop expertise, reasoning shifts from focusing on isolated structures to understanding interactions among system components. Emphasizing interactions supports mechanistic reasoning and systems thinking, which are central to physiology. Although biomedical research has historically moved from holistic to reductionist approaches, advances in pathway analysis and systems biology have renewed attention on integrative physiological networks. This presentation summarizes utility of openly available bioinformatics resources commonly used in functional pathway analysis to physiology education. It then provides a hands on opportunity to explore the tools in application to the physiological problem space of blood sugar homeostasis and its disruption in diabetes.

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B209 - From the Human Body to the Bench: Building Scientific Thinking in Physiology Labs

Luke Kinsey, Western Michigan University, luke.j.kinsey@wmich.edu

Sponsored by ADInstruments

Traditional labs excel at engagement but can unintentionally train students to follow steps rather than think like scientists and clinicians. Students love self-sampling (i.e., BP, HR, ECGs, EEGs, etc.) and need practice turning data into knowledge. This workshop presents a case study (144 seat lecture with 24 seat labs) and framework blending discovery-driven research with traditional cookie-cutter approaches. Beginning with familiar self-sampling and intentionally evolving into a CURE-style lab, this framework helps students move from "did I get the expected result?" to "what does the evidence support?" with emphasis on critical thinking, scientific literacy, and problem solving.

Session 9: May 27 @ 11:00 AM – 12:00 AM

B301 - Making Neuroanatomy Stick: A Creative, Hands-On Approach to Teaching the Brachial Plexus

Renee Samardak, University of the Incarnate Word, School of Rehabilitation, rgonza10@uiwtx.edu, Thelma Ochoa, OTD, OTR, C/NDT, Assistant Professor, The University of Texas Rio Grande Valley, The College of Health Professions, thelma.ochoa@utrgv.edu

This interactive workshop presents a creative, hands-on approach to teaching the brachial plexus for anatomy educators. Participants engage in an experiential learning activity that transforms complex neuroanatomy into an accessible, memorable, applied learning experience. Emphasis is placed on active construction, movement, and real-world application to support deeper understanding and knowledge transfer. By the end of the workshop, participants will be able to construct and explain the brachial plexus using a hands-on model. Using pipe cleaners, pool noodles, and art materials, participants will build a tangible brachial plexus model and leave with an adaptable teaching strategy and increased confidence for practice.

B302 - De-Pathologizing Anatomy & Physiology

Matt Rushford, Vermont State University, matthew.rushford@vermontstate.edu

Many areas of anatomy & physiology are influenced by the medical bias of reframing of normal as abnormal. In this workshop, we will discuss several human body parts and processes, how they have been pathologized, and what a de-pathologized pedagogy might look like.

B303 - Beyond the Comfort Zone: Strategies for Professors to Avoid Pedagogical Complacency

Sultan Jenkins, LaGuardia Community College, sjenkins@lagcc.cuny.edu

Pedagogical complacency represents a subtle yet significant challenge in higher education. As faculty gain experience and stability, there is a tendency to rely on familiar teaching methods and course materials, often at the expense of innovation and engagement. This workshop examines the psychological, institutional, and cultural roots of complacency in teaching and presents evidence-based strategies to sustain long-term pedagogical vitality. Drawing on research in the Scholarship of Teaching and Learning (SoTL), reflective practice, and faculty development, it argues that continuous self-assessment, engagement in professional learning communities, and institutional support are critical for maintaining dynamic, student-centered instruction.

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B304 - Employing Causality to Avoid Brittle Knowledge When Teaching Physiology: Deriving the Wiggers Diagram
Erik Silldorff, Towson University, esilldorff@towson.edu

Prediction is the pinnacle of learning outcomes in physiology and depends upon comprehension of the causal links between events in mechanistic processes. The challenge of creating essential cognitive frameworks within which students can successfully think and reason is to present complex topics in small logical units that do not exceed the working memory capacity. Here, I will describe a logic-driven explanation using the classical Wiggers diagram as a model. I will derive every element of the graph, each from its prior stimulus, using cause-and-effect core principles such that students can cognitively follow a clear progression of falling biological "dominoes".

B305 - The Value of Learning Assistants at Two-Year Colleges: Perspective From Learning Assistants (LAs)
Dakota Weise, Oakton College, dakotaeweise@gmail.com, Christina Zhang, Oakton College, christinahqzhang@gmail.com, Kristi Anderson Zenchak, Oakton College, zenchak@oakton.edu

Learning Assistants (LAs) are student leaders who partner with mentor professors to facilitate a deeper understanding of course content by including an active learning approach. LA programs at four-year institutions have been shown to improve student engagement, success, and course retention. This program provides peer-to-peer collaborative opportunities with guidance of an LA. This seems especially important in community colleges where student interactions are encouraged to promote a sense of belonging. During this workshop, we will briefly discuss the impact the LA program has on students and on the LA mentors, followed by a demonstration of an active learning activity.

B306 - Hormone Havoc: A Gamified Approach to Reinforcing Endocrine Physiology
Haneen Salhieh, Chamberlain University, Hsalhieh@chamberlain.edu, Jill McMillin, Chamberlain University, JMcMillin@chamberlain.edu, Johnny Vang, Chamberlain University, jvang1@chamberlain.edu, Donna Blackney, Chamberlain University, DBlackney@chamberlain.edu

Hormone Havoc is a gamified formative assessment activity designed to reinforce endocrine physiology concepts in undergraduate anatomy and physiology courses. The activity engages students in applying knowledge of hormone sources, targets, mechanisms of action, and feedback regulation to scenario-based physiological disruptions, including hormone excess and deficiency. Implemented during lecture reinforcement and exam review sessions, Hormone Havoc promotes collaborative problem-solving and low-stakes participation while providing instructors with real-time insight into student understanding. Informal student feedback and instructor observations suggest increased engagement, improved conceptual clarity, and greater confidence with endocrine regulation and hormonal feedback mechanisms.

B307 - Unlocking A&P Engagement: A Workshop on Implementing High Impact Lab Activities
Caroline Hanson, Georgia Gwinnett College, chanson@ggc.edu

Anatomy and Physiology labs can be dynamic, engaging, and rooted in real world applications. This workshop showcases experiential, skills based activities—shared as an open educational resource—many use every day props to support kinesthetic, visual, and active learning, helping students grasp challenging A&P concepts. These clinically relevant exercises promote hands on practice and meaningful connections to healthcare skills. We will also share student created instructional videos that help mentor colleagues in adopting these accessible, high impact approaches so more students benefit from engaging, concept driven learning experiences.

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B308 - Visual A&P: Draw It. Record It. Post It.
Jordan West, Weber State University, jordanwest@weber.edu, Travis Price, Weber State University, tprice@weber.edu

Drawing in front of students transforms anatomy and physiology into an active, visual learning experience. This session will demonstrate simple, effective drawing techniques to clarify complex structures and processes in real time. Participants will see how live drawing increases clarity, enhances engagement, and promotes retention. We will also show how these same drawings can be easily recorded using tablets, document cameras, or whiteboards, then quickly shared as short online modules. Attendees will leave with practical strategies to draw confidently, record efficiently, and extend impactful A&P teaching beyond the classroom.

B309 - Reflecting Real Bodies: Incorporating Anatomical Variation and Influencing Factors into A&P Education
Daheen Lee, Primal Pictures, Daheen@primalpictures.com

Sponsored by Primal Pictures

Anatomy and physiology education has traditionally relied on idealized representations of the human body, leaving students underprepared for the anatomical variation encountered in real clinical practice. This workshop focuses on how A&P faculty can integrate anatomical variation and influencing factors, such as age, sex, body composition, and pathology, directly into core undergraduate teaching. Participants will explore practical approaches for connecting foundational anatomy to applied, clinically relevant scenarios, supported by examples from recent updates to Primal's 3D digital anatomy modules on Anatomy.tv. Attendees will leave with strategies to improve student understanding, confidence, and readiness while teaching anatomy that reflects real-world variation.

B310 - Simple Methods to Improve Audio Quality in Recorded Lectures
Kevin Flaherty, University of Missouri, kvfee7@health.missouri.edu

Recorded video lectures are a staple of anatomy education in the digital age. One commonly neglected aspect of lecture video production is audio quality. While audio production and editing often involves highly technical knowledge, there are many simple techniques to improve audio quality and increase the clarity of audio recordings. This workshop will discuss accessible methods to improve audio quality, including microphone type and room treatment. It will also provide an overview of common methods of audio processing, such as EQ, compression, noise gates, de-essers, reverb, etc, and their uses in producing pleasing spoken audio.

B310 - Incorporating Feedback from an Artificial Intelligence (AI) Assistant into Undergraduate Laboratory Writing Assignments
Nicole Squyres, Pennsylvania State University, nss28@psu.edu, Skylar Mannen, Pennsylvania State University, slm7296@psu.edu

Artificial Intelligence (AI) Assistants present opportunities and challenges when teaching scientific writing. Instructors in two large 100-level laboratory courses integrated AI to provide feedback during students' writing revision process. This session explores the pros and cons of using AI in writing instruction, focusing on assignment design in Biol 162/164 (Human Anatomy & Physiology Laboratory I and II). We will also share comparative data on writing assignment grades with and without AI involvement in addition to student and teaching assistant feedback on their experience, offering insights into the efficacy of AI tool integration in writing-focused Anatomy and Physiology curricula.

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