HAPS Central Regional Meeting
March 24, 2018
Dear HAPS members, meeting attendees and guests:

Welcome to the HAPS 2018 Central Regional Meeting! We are thrilled to welcome you to the St. Louis College of Pharmacy campus. I had the opportunity to review the meeting agenda, and I am certain it will provide you with an enriching experience and valuable tools to support you as you continue to promote the HAPS mission – to promote excellence in the teaching of anatomy and physiology.

The College has enjoyed a longstanding relationship with HAPS, and our faculty have been involved with HAPS for many years. Our anatomy and physiology curriculum has benefitted from faculty participation in HAPS conferences and workshops, and we have been using the HAPS Exam as part of our program assessment since 1993. The College hosted the 2005 Annual Conference, and we are excited to welcome HAPS once again to share our academic space.

During your visit, I hope you will take some time to get to know our campus and explore our new, state-of-the-art facilities. In recent years, the College has undergone a historic transformation that has added more than 400,000 square feet of living and learning space for students and faculty.

Our new Academic and Research Building (ARB), opened in August 2015, is equipped with the latest technology, student-focused features and research facilities. From the two-story library and interactive classrooms to clinical pharmacy skills labs and expansive research labs, the ARB provides unparalleled space to learn, study and engage in scholarship.

Just last year, our new Recreation and Student Center (RAS) was opened. The RAS provides one-stop access to new dining and recreation facilities, a student fitness center, athletic and intramural gymnasiums, as well as academic and personal support resources provided in the Student Success Center.

It is an exciting time at the College, and we are glad to welcome you to our community. Here, you will find a dedicated student body, supportive staff and an energetic and dedicated faculty that shares your passion for educating the leaders of tomorrow.

I want to give special thanks to Margaret Weck, D.A., associate professor of physiology and director of the Center for Teaching and Learning, who has served as the HAPS 2018 Regional Meeting Coordinator.

While you are with us, I hope you will make yourself at home on campus. Please let us know if there is anything we can do to make your visit more positive.

Enjoy the meeting!

Kimberly Kilgore, Ph.D.
Dean of Arts and Sciences and Professor of Chemistry
A. Where to park

B. Address 2 Pharmacy Place: enter through library or off pedestrian walkway to north of building

C. Official Hotel
### Schedule of Events
March 24, 2018

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<tr>
<th>Time</th>
<th>Event</th>
<th>Location</th>
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<tr>
<td>7:00 AM – 7:30 AM</td>
<td>Exhibitor Setup</td>
<td>Academic and Research Building (ARB) – Second Floor Lobby</td>
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<tr>
<td>7:30 AM – 8:45 AM</td>
<td>Registration</td>
<td>ARB – Second Floor Lobby</td>
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<tr>
<td>7:30 AM – 8:45 AM</td>
<td>Breakfast with Exhibitors</td>
<td>ARB – Second Floor Lobby</td>
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<tr>
<td>8:45 AM – 9:00 AM</td>
<td><strong>Welcome:</strong> Conference Coordinator: Margaret Weck</td>
<td>ARB 212</td>
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<tr>
<td>9:00 AM – 10:00 AM</td>
<td><strong>Update Speaker I:</strong> Toshi Miyatsu, Washington University in Saint Louis</td>
<td>ARB 212</td>
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<td></td>
<td>Small Changes You Can Make to Bring Large Gains in Students’ Learning: Suggestions Based on Learning Science Principles</td>
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| 10:00 AM – 11:00 AM | Break with Exhibitors  
Poster Session                                                            | ARB 212 and Lobby                              |
| 11:00 AM – 12:00 PM | Workshop Session 1                                                  | ARB 212, 221, 222 and 223                    |
| 12:00 PM – 1:00 PM | Lunch                                                                | ARB – Second Floor Lobby                      |
| 1:00 PM – 2:00 PM | **Update Speaker II:** Thaddeus Stappenbeck                          | ARB 212                                       |
|                | The Microbiome: Our Expanding Appreciation of this Organ and its Influence on Health and Disease |                                               |
| 2:00 PM – 3:00 PM | Break with Exhibitors  
Poster Session                                                            | ARB 212 and Lobby                              |
| 3:00 PM – 4:00 PM | Workshop Session 2                                                  | ARB 212, 221, 222 and 223                    |
| 4:00 PM – 4:15 PM | Closing & Door Prizes                                               | ARB 212                                       |

HAPS Conference attendees can gain access to WiFi at STLCOP by using the Guest Network. No password is necessary.
HAPS would like to recognize and thank all of our conference exhibitors. Their generous support makes this conference possible.

**Exhibitors**
- BodyViz
- Elsevier
- McGraw Hill Education
- Morton Publishing Company
- Visible Body

Don’t forget to register for HAPS 2018!

The HAPS 2018 Annual Conference will take place in Columbus, Ohio on May 26\(^{th}\) through May 30\(^{th}\).

The last day to register at the Regular rate is April 20\(^{th}\), so register online today!
Abstract: A recent surge in discipline-based education research has produced evidence supporting numerous innovative pedagogical methods, such as flipped classroom and process-oriented guided inquiry learning (POGIL). However, for whatever reason implementations of these methods at institutions without a large financial support remain a challenge for instructors. In this talk, I share a different approach than promoting a particular pedagogical method; instead, I will appeal to several principles from learning sciences underlying effective learning and discuss how they can be implemented in classroom instructions. Unlike some pedagogical methods that require a complete re-organization of how the courses are taught, the small changes based on learning science principles are easy to implement and can bring large gains in students’ learning.

Bio: Toshi Miyatsu graduated from the University of California, Los Angeles in 2011, and worked at the Bjork Learning and Forgetting Lab as a lab manager for two years under the direction of Drs. Robert and Elizabeth Bjork. In 2013, he started his PhD at Washington University in St Louis under the direction of Dr. Mark McDaniel. He completed his master’s thesis on utilizing hierarchical organization to enhance rock category learning (as often taught in geological science courses) and currently working on his doctoral dissertation on the effect of stimulus size on category learning and metacognition.

He is interested in a wide range of human learning and memory topics, such as retrieval, mnemonics, metacognition, and category learning. The overarching goal of his research program is to formulate practical techniques that can improve educational instructions and increase efficacy of self-regulated learning.
Update Speaker II

Thaddeus Stappenbeck
Washington University in St. Louis

“The Microbiome: Our Expanding Appreciation of this Organ and its Influence on Health and Disease”

1:00 – 2:00 PM
ARB 212

Abstract: Mammals are defined by their metagenome, a combination of host and microbiome genes. The latter is a collection of all host-associated microorganisms. We now appreciate that nearly all aspects of human physiology is influenced by the microbiome. In addition, important associations have been made between the microbiome composition and disease. Studies in this area support the idea that the microbiome and metagenome have profound local as well as systemic effects, both positive and negative in disease and on physiologic processes directly related to disease. The goal of this talk is to define the microbiome and provide some recent insights into how it influences systemic physiology.

Bio: Thaddeus Stappenbeck is currently the Conan Professor of Laboratory and Genomic Medicine and the Co-Chief, Division of Laboratory Genomic Medicine in the Department of Pathology and Immunology at the Washington University School of Medicine. He received a B.A. degree in the Integrated Science Program from Northwestern University. He obtained the MD/PhD from Northwestern University. He trained in anatomic pathology at Washington University School of Medicine.

Dr. Stappenbeck’s research program has focused on the response of intestinal epithelial cells to injury using several mouse models including chemical and physical damage as well as genetic modulation of the immune system and epithelial function. His lab has found epithelial repair is directed by intestinal microbes, specific cells of the immune system and the stromal cells that support the epithelium. Within the intestinal epithelium, the process of autophagy is required within specific secretory cells to support intestinal homeostasis. His lab has been supported by the National Institute of Health, the Crohn’s Colitis Foundation of America, the Board Medical Research Program, the Helmsley Foundation, the Rainin Foundation and the Pew Foundation.
Lab Activities for Musculoskeletal Mechanics  
Terry Meehan, Rockhurst University, tj.meehan@rockhurst.edu

I made “toy” lever arm sets for student play. I now introduce lever arms briefly; the students “build” levers of specific ratios and answer questions. Student feedback, speed in comprehension, and oral, as well as written, test results have been very positive. Another worksheet has them list joint type and possible actions, and then determine a muscle’s actions from a diagram by imagining that they’re puppet masters pulling on strings from insertion towards origin. Students also perform actions for me from flashcards, and practice saying/showing origin/insertion on a skeleton, as well as practice lines of pull using elastic string.

The First Steps of Flipping the Human Physiology Classroom  
Nicole Palenske, Central College, palensken@central.edu

The purpose of this project is to create a flipped course curriculum that prepares and stimulates students to apply the information they are learning in real-life scenarios. My goals are to create a more hands-on and student-focused learning environment in the lecture classroom. In addition, I plan to create new lab exercises and opportunities for students to conduct research in the laboratory setting. By changing the delivery method of the course in both lecture and lab this will enhance the outcomes of the course.

Using a Computer Simulation to Teach Undergraduate Students the Principles Behind GFR Autoregulation  
Jose J. Reyes-Tomassini, Wartburg College, jose.reyestomassini@wartburg.edu

The concept of Glomerular Filtration Rate (GFR) is a central concept in Renal Physiology. Many pathophysiological conditions affect GFR by altering the glomerular capillary pressure (PGC) such as hypertension. I developed a computer simulation to teach non-biology majors A&P students how afferent and efferent arteriole resistance influences GFR. The simulation shows students how the mechanism of auto-regulation compensates for changes in blood pressure while maintaining renal blood flow. The program accomplishes this by using a recursive algorithm. The role of permeability to proteins on glomerular pressure is also simulated.

Promoting success with Critical Thinking and Metacognition in Anatomy and Physiology Classroom for First-Year Students Utilizing Supplemental Instruction  
Sheela Vemu, Waubonsee Community College, svemu@waubonsee.edu, Jessica Moreno, Waubonsee Community College, jmoreno@waubonsee.edu, Janel Venegas, Waubonsee Community College, Maria Aguilar, Waubonsee Community College

As faculty we often take it for granted that our students will be arriving in our classroom with certain skills such as reading, note taking and what to do while studying. There is a great need to explore the issues related to incoming students being academically underprepared for college Anatomy & Physiology classes and the steps taken to solve them. Supplemental instruction (SI) is a method of peer led active learning that can be used to address these issues. The focus of this poster is to discuss the components and implementation of an SI program at Waubonsee Community College for introductory Anatomy & Physiology classes. Apart from the learning objectives of the course, a new dimension was added so students would be able to demonstrate knowledge of the following goals: 1) Improve learning by discovering alternative ways of studying and preparation 2) Improve student performances by facilitating new techniques 3) Increase retention of crucial material. Evaluation of student data from post-semester surveys and mid semester grades with examples of how this process of skill development played out with students over the course of a semester will be highlighted. The authors are scholar participants in a profession development model from BioQUEST & QUBES.
Workshop Presentations

Session 1 – 11:00 AM – 12:00 PM

101: ARB 212
Five Powerful Ways You Can Enhance Long-Term Learning in Your A&P Course
Kevin Patton, St. Charles Community College, kevin@lionden.com
Can we be assured that our A&P students can retrieve and apply the concepts they've learned in our course later in the semester? In A&P 2? In a later course? In their careers? There are some ways to increase the odds that they will! Kevin shares 5 ways that have worked well with his students.

102: ARB 221
Thinking Inside the Box: Using Information Processing to Teach Skeletal Muscle Actions, Attachments, and Neurovasculature
Edgar R. Meyer, University of Mississippi Medical Center, emeyer@umc.edu
In anatomy courses, students are required to process copious amounts of information, often in short periods of time. Students especially struggle with learning the origins, insertions, actions, innervations, and blood supply of the muscles of the upper and lower extremities. In this workshop, attendees will receive helpful tips on teaching their students to apply chunking, or grouping, techniques to improve their own learning of the actions, attachments, and neurovasculature of skeletal muscles. This system of clustering information into categories enhances students' retention. Attendees will also have the opportunity to exchange information processing techniques that they use in their own classrooms.

103: ARB 222
Pre-Requisite Considerations for A&P Courses
Nicole Pinaire, St. Charles Community College, npinaire@stchas.edu
In an effort to increase student success the first time they take A&P 1, we determined that students were lacking chemistry knowledge, and they needed more college-level science experience. After analysis of past student transcripts and grades, it was clear that passing college chemistry was related to A&P 1 success. This roundtable discussion will focus on how this change has affected our curriculum and student outcomes, as well as how we had our nursing school and administrators buy-in to this idea before we made the curriculum change. Attendees are encouraged to share their experiences.

104: ARB 223
How 3D Technology Increases Student Learning and Retention
Erin Lang, Visible Body, erin.lang@visiblebody.com
*Sponsored by Visible Body*
3D technology is a very exciting teaching and learning tool. Have you thought about incorporating 3D technology into your course and/or lab? This workshop will show you how you can easily incorporate 3D technology into your course. Visible Body will discuss the benefits of 3D learning, what content is the best to teach in 3D, and how students learn more efficiently as a result.
Session 2 – 3:00 PM – 4:00 PM

201: ARB 212
Finding Alternatives to the Cat for Dissection
Cinnamon VanPutte, Southwestern Illinois College, cinnamon.vanputte@swic.edu
A roundtable sharing of ideas for teaching gross anatomy to undergraduates. Do you currently use cats? Have you had trouble acquiring enough cats for your students? If you have switched to a different organism, which is it and how has it worked? Have you written a grant to build a cadaver lab? Do you think dissection is necessary? This is an opportunity to brainstorm with other human anatomy and physiology colleagues about the best way to teach gross anatomy to undergraduates.

202: ARB 221
Do You Have Underprepared Students in Your A&P Course?
Jaci Autrey, McGraw Hill, jaciautrey@mheducation.com, Neelima Bhavsar, Saint Louis Community College, nbhavsar@stlcc.edu
*Sponsored by McGraw Hill Education*
Underprepared students are one of the many challenges we face in A&P. Unfortunately, many of our students are just not prepared for a course as challenging as ours. They sometimes lack the study skills, the scientific background, and the prerequisite material, like chemistry, to succeed in anatomy and physiology courses. Fortunately, there is a solution that can help us with this challenge: McGraw Hill Connect with LearnSmart Prep. McGraw Hill Connect is a highly reliable, easy-to-use homework and learning management solution that embeds learning science and award-winning adaptive tools to improve student results.

203: ARB 222
The Integration of Technology in the Teaching of Anatomy & Physiology
Johnny K. Lloyd, Aurora University, jilloyd@aurora.edu, John Pellegrini, St. Catherine University, jjpellegrini@stkate.edu
Over the past years, technology has been integrated in the teaching of Anatomy & Physiology. With the advent of multiple digital platforms and routine access to the internet, both in and out of the classroom, the possibilities have only multiplied. Bring a web-enabled device of your own and let’s share the pros and cons of the technologies we have been successfully integrating into our instruction. In addition let’s consider who has access to our students’ data when we move into the cloud, and the data mining and other possibilities that could theoretically make free products not without costs.

204: ARB 223
Hedbanz: the Headz, Shoulderz, Kneez and Toez Version
Julie Porterfield, Tulsa Community College, julie.porterfield@tulsacc.edu, Leann Fiore, Tulsa Community College, leann.fiore@tulsacc.edu
This workshop addresses the overwhelming, tedious nature of committing anatomical structures to memory while exposing students to complex cognitive tasks. Implementation of game play within the classroom creates an avenue for combining analytical and critical thinking packaged as a fun, peer-bonding activity. We will present an adaptation of the popular modern game, Hedbanz, to facilitate the logical synthesis of muscle and bone terminology. During this session, presenters will provide instructions, templates and simulation for modifying the Hedbanz game to fit your classroom curriculum. Come experience a day in our classroom playing anatomical Hedbanz!
Thank you for coming and participating in our 2018 HAPS Central Region Meeting. The heart of HAPS has always been the people of HAPS. Thank you for joining together to engage in our ongoing conversation about how to strengthen our students’ understanding of Human Anatomy and Physiology.

A special thank you goes out to Macy Russell, STLCOP Institutional Events Manager, Angela Hill, catering manager of Pedestal Foods, and Brittney Roberts, HAPS Assistant Business Manager, for being so helpful in making the logistical arrangements for this meeting so easy on us. And of course, we once again thank our loyal exhibitors who help us keep our registration fees as low as possible.

Sincerely,
The Central Regional Meeting Planning committee:
Theresa Alvarez, Saint Louis Community College - Forest Park
Neelima Bhavsar, Saint Louis Community College - Florissant Valley
Syed Chowdhury, Saint Louis Community College - Wildwood
James Enyart, Lindenwood University
Dayton Ford, St Louis College of Pharmacy
Rhonda Gamble, Mineral Area College
Elizabeth Granier, Saint Louis Community College Meramec
Luci Kohn, Southern Illinois University - Edwardsville
Alicia Pate, St Louis College of Pharmacy
Kevin Patton, Saint Charles County Community College
Nicole Pinaire, Saint Charles Country Community College
Lucia Tranel, St. Louis College of Pharmacy
Cinnamon Van Putte, Southwestern Illinois College
Margaret Weck (chair), St. Louis College of Pharmacy