Saturday, April 22, 8:30 am – 10:00 am (Room 176AB)
Is a Balanced Teaching/Research Career Fact or Fiction
Chair – Lynne Opperman (Texas A&M University College of Dentistry)
  Lynne Opperman (Texas A&M University College of Dentistry)
The Facts and How to Plan for a Balanced Career
Judith Venuti (Oakland University William Beaumont School of Medicine)
Perspectives from a Chair of a Teaching Intensive Institution
Kathryn Jones (Indiana University School of Medicine)
Perspectives from a Chair of a Research Intensive Institution
Margaret McNulty (Indiana University School of Medicine)
Achieving a Research and Teaching Balance: One Junior Faculty Member’s Experience

Saturday, April 22, 10:30 am – 12:00 pm (Room 176AB)
Work-Life Balance and Mental Health: How to Manage One without Losing the Other
Chair – Rebecca Lufler (Tufts University School of Medicine)
Balancing responsibilities and roles at work can be difficult. Trying to balance these with the responsibilities of life outside of work can lead to tremendous stress. The purpose of this symposium is to elucidate the different stresses experienced by professionals in our field and ways to alleviate the stress of balancing work roles with home roles. The speakers were chosen based on their differing positions at their institutions and their responsibilities outside of their institutions: bench research and teaching, female, without children (Fisher); bench research, male, with children (Trainor); teaching and education research, female, starting a family (Lufler); and teaching and scholarship, male, single with children (Mussell). The variety of speakers in this session will provide both literature based and anecdotal evidence of managing work life balance such that the membership should be able to relate to one or more of these speakers. This session can also be helpful to members who mentor and advise students and junior faculty transitioning to these roles.
  Rebecca Fisher (University of Arizona College of Medicine-Phoenix)
  It Takes a Village: Survival Strategies for the Tenure Track
  Paul Trainor (Stowers Institute for Medical Research)
  Gulliver’s Conundrum: Balancing life with the Constant Productivity Pressures at Research Institutes
  Rebecca Lufler (Tufts University School of Medicine)
  Building Your Career and Family: How to Make Your Mark while Striking a Balance
  Jason Mussell (Louisiana State University Health Sciences Center – New Orleans)
  How to Stumble and Make it Look Like You’re Dancing

Saturday, April 22, 1:30 pm – 3:00 pm (Room 175AB)
The Mighty Osteocyte: No Bone about It
Chair – Jian (Jerry) Feng (Texas A&M University College of Dentistry)
  Yinshi Ren (Duke University School of Medicine)
  Osteocytes Play a Key Role in the Formation and Maintenance of Mineralized Bone
  Lynda Bonewald (Indiana University)
Osteocytes, Muscle and Exercise: Role in Healthy Aging

**Alexander Robling** (Indiana University School of Medicine)

Osteocytes Orchestrate Mechanical Signal Transduction in Bone via WNT

**Saturday, April 22, 1:30 pm – 3:00 pm (Room 175C)**

**Storytelling and the Art of Effective Science Communication**

Chair – Jason Organ (Indiana University School of Medicine)

Anatomists – researchers and educators alike – are required to connect to and engage with the lay public, policy makers, funders, learners, and professionals from other disciplines. To that end, we must tailor our communication to a variety of audiences who are not (or not yet) scientific experts. Yet, it has never been more critical for us to get our message across effectively. With funders and policy makers, we must communicate vividly about our work and its impact on the community, and help them decipher strong evidence from weak evidence or non-evidence. With learners, we must speak in a way that increases excitement about the content, and encourages them to be active communicators. In each of these contexts, we must tell engaging stories, respond spontaneously and immediately to the needs of our audience, and explain our work in terms that our audience can understand. The goal of this symposium is to provide AAA members with hands-on, participatory training in effective and engaging communication strategies and tools rooted in applied improvisation theory. Our hope is that participants will be able to take what they learn in this symposium and use it immediately in their day-to-day interactions with learners, funders, policy makers, and the public.

**Jason Organ** (Indiana University School of Medicine)

**Jonathan Rossing** (Gonzaga University)

**Connecting with Your Audience**

Participants will learn to speak about their work (research and teaching) effectively and responsively with multiple audiences, from students and peers to family members and policymakers. The exercises used in this session will draw heavily on the methods of improvisational theater, and will provide participants with hands-on practice connecting with an audience, paying dynamic attention to others, reading nonverbal cues, and responding appropriately.

**Krista Hoffmann-Longtin** (Indiana University – Purdue University Indianapolis)

**Distilling Your Message**

Participants will be introduced to principles of clear communication through experiential exercises whereby participants will practice speaking clearly and vividly about science and anatomy education in ways that lay audiences can understand and appreciate. Participants in the workshop will practice defining their communication goals, identifying main points, explaining meaning and context, responding to questions, and using storytelling techniques to enliven messages.

**Saturday, April 22, 1:30 pm – 3:00 pm (Room 176AB)**

**The Anatomy of Cell Shape**

Chair - Tina Tootle (University of Iowa)

In vivo cells must interact with and respond to both other cells and extracellular matrix components. A key aspect of these interactions is mechanotransduction — the response of the cell to force. Mechanical signaling impinges on and alters cell surface receptors. These receptors connect inside the cell to both signaling pathways and cytoskeletal filaments. The session will discuss how such mechanical signaling regulates epidermal morphogenesis, impinges on metabolism, and is transmitted to the nucleus.

**Kathleen Green** (Northwestern Feinberg School of Medicine)

Desmosomal Cadherin Association with a Dynein-Cortactin Complex Promotes Actin Rearrangements Required for Epidermal Morphogenesis

**Kris DeMali** (University of Iowa)

AMPK: A Novel Link between E-cadherin Mechanotransduction and Cell Metabolism

**Tina Tootle** (University of Iowa)

Prostaglandins Regulate Mechanotransduction to the Nucleus
Saturday, April 22, 1:30 pm – 3:00 pm (Room 178A)

**Building the Bridge: Connecting Prior Knowledge to New Knowledge Hybrid Symposium**

Chairs – Keely Cassidy (University of Nebraska) & J. Bradley Barger (University of Alabama School of Medicine)

- **J. Bradley Barger** (University of Alabama School of Medicine)
  The Potential of Anatomy Ontology in Anatomy Education

- **A. Scott Pearson** (Vanderbilt University Medical Center)
  Strategies for Enhancing Longitudinal Teaching of Anatomy across a Revised Medical School Curriculum

- **Jacob Smith** (University of Colorado School of Medicine)
  Improved Medical Student Perception of Ultrasound Using a Paired Anatomy Teaching Assistant and Clinical Instructor Model

- **Polly Husmann** (Indiana University)
  Previous Experience and Parental Perspectives: Influences on Study Habits in Anatomy

- **David Resuehr** (UABSOM)
  Mens Sana In Corpore Sano - A Pilot Course In Mind Body Medicine For Undergraduate Medical Students

Saturday, April 22, 3:15 pm – 5:15 pm (Room 190B)

**Using Ultrasound to Teach Cardiovascular Physiology and Anatomy**

*APS and AAA Joint Session*

Chair – Geoffrey Guttmann (University of Medicine and Health Sciences, St. Kitts)

Saturday, April 22, 3:30 pm – 5:00 pm (Room 175AB)

**Bone Remodeling in Health, Disease, and Aging**

Chair – Mohammed Elsalanty (Dental College of Georgia, Augusta University)

- **Mark Hamrick** (Medical College of Georgia)
  Extracellular microRNA in Age-related Bone Loss

- **David Burr** (Indiana University)
  Why Does Bone Remodel, What Happens When It Doesn't, and How Can We Use This to Change Our Therapeutic Mindset?

- **Meghan McGee-Lawrence** (Medical College of Georgia)
  Dietary Kynurenine, the Oxidized Metabolite of Tryptophan, Suppresses Osteoprogenitor Expression of Hdac3 Resulting in Increased Marrow Adiposity and Age-related Bone Loss

Saturday, April 22, 3:30 pm – 5:00 pm (Room 175C)

**Cardiovascular Biology Platform Session**

Chair – TBD

- **Olubusola Shifatu** (DePauw University)
  Ventricular Growth and Coronary Vessel Development in the Giant Danio (Devario Aequipinnatus) Heart

- **Asha Poles** (Philadelphia College of Osteopathic Medicine)
  Role of Ajaip1 in Cardiovascular Development

- **Alex Bueker** (Philadelphia College of Osteopathic Medicine)
  Novel Contributions of an Extracellular Matrix Molecule to Coronary Vessel Formation

- **Menglin Liu** (University of Illinois College of Medicine)
  Genetic Lineage Tracing Analysis of Endothelial Cells in Lung Vascular Injury Identifies Two Distinct Sources of Endothelial Regeneration

- **Lianghui Zhang** (University of Illinois at Chicago)
  Sox17-Mediated Conversion of Fibroblasts into Endothelial Cells and Erythroblasts Enhances Neovascularization after Myocardial Infarction

- **James Hyun** (University of Illinois at Chicago)
  HIF1α Activated Etv2 and Notch1 Signaling Biphasically Mediates ESC Differentiation to Arterial Endothelial Cells with Enhanced Sequestration in Ischemic Tissue
Saturday, April 22, 3:30 pm – 5:00 pm (Room 176AB)
**Single Cell Analysis in Developmental Biology**
Chair – Paul Kulesa (Stowers Institute for Medical Research)

- **Jeffrey Moffitt** (Harvard University)
  Spatially Resolved Single-cell Transcriptomics

- **Francesco Cutrale** (University of Southern California)
  Exploring Multi-dimensional Imaging: From Single Cell to Embryo Development

- **Spyros Darmanis** (Stanford University)
  Single-cell Biology: Method Development and Applications on the Study of the Human Brain in Health and Disease

Saturday, April 22, 3:30 pm – 5:00 pm (Room 178A)
**So You Want to Create Digital Media for Education - Now What?**
Chair – Claudia Krebs (University of British Columbia)

The classroom is rapidly evolving: students no longer see the lecture hall as their primary source of knowledge. As educators we are called to provide high quality and didactically sound materials for our students to engage them and guide them through their learning. These media need to be rapidly responsive to students’ needs and mobile compatible to allow for flexible learning. There are many options on how best to engage our students, but with so many creative options on the table, deciding how, where and when to effectively use them can be challenging. In this symposium we are bringing together educators from around the world to engage the audience in the use of various media - some high tech and some low tech - and how best to use them in a modern educational setting.

- **Jochen Bretschneider** (VU University Medical Center Amsterdam) & **Zachary Rothman** (University of British Columbia)
  If A Picture Already Tells A Thousand Words, How Many More Do We Need To Add?

- **Paul Rea** (University of Glasgow) & **Claudia Krebs** (University of British Columbia)
  How to Create Interactive Digital Resources That Result in Real Learning Outcomes

- **Fredrik Bengtsson** (Lund University) & **Marcus Granmo** (Linnaeus University)
  An Active Partnership: How Engaging Students as Co-producers will Change Your Classroom

Saturday, April 22, 5:30 pm – 6:45 pm (Room 178A)
**Welcome and Keynote Speaker**

- **Bjorn R. Olsen, MD, PhD** (Harvard School of Dental Medicine)
  Roles of Vascular Endothelial Growth Factor in Skeletal Development, Postnatal Homeostasis and Disease

Saturday, April 22, 7:00 pm – 8:30 pm
**EB Welcome Reception**
New in 2017! Join fellow attendees for our first-ever, inter-disciplinary meet and mingle. Appreciate the power and energy of the EB Meeting as all career levels come together for fun and networking.

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**SUNDAY, APRIL 23, 2017**

Sunday, April 23, 7:30 am – 8:30 am (Room 178B)
**First Time Attendee Breakfast**

Sunday, April 23, 8:30 am – 10:00 am (Room 176AB)
**Organoids: Recapitulating Anatomy in a Dish Plenary Session**

- **Applied Anatomy - Human Development and Disease Mini-Meeting**
  Chair – Kenneth Kramer (Creighton University)

Embryonic and adult mammalian stem cells can remarkably self-organize and differentiate in 3D culture. Because the resulting organoids mirror many of the anatomical and functional properties of the organs, organoids are being used to model human organ development and disease, opening up new possibilities for
regenerative medicine. Speakers will discuss their insights gained from studies of several organoids, including intestine, pancreas, inner ear, and lung.

- **Hans Clevers** (Hubrecht Institute)
  Lgr5 Stem Cell-based Organoids in Human Disease
- **Eri Hashino** (Indiana University)
  Modeling Inner Ear Development with Pluripotent Stem Cells in 3D Culture
- **Jason Spence** (University of Michigan)
  Modeling Human Development Using Insights from Organoids and Embryos

**Sunday, April 23, 10:30 am – 12:00 pm (Room 175AB)**

**EXTREME Anatomy: Living Beyond the Edge**
*Co-sponsored by The Anatomical Record*

Chairs – Timothy Smith (Slippery Rock University) & Jeffrey Laitman (Icahn School of Medicine at Mount Sinai)

- **Kenneth Catania** (Vanderbilt University)
  Stars for Their Eyes: A Nose that Acts Like a Visual System
- **Joy Reidenberg** (Icahn School of Medicine at Mount Sinai)
  Back to the Beach: Adaptations that Enabled Terrestrial Mammals to Return to the Water
- **Ali Nabavizadeh** (Cooper Medical School of Rowan University)
  Extreme Muzzles of Mastication: Craniofacial Muscular Support Systems of Large Herbivores (Dinosaurs, Mammals, and More)
- **Jeffrey Laitman** (Icahn School of Medicine at Mount Sinai)
  Extreme Cousins of Ours Who Are No More: From Massive Gigantopithecus to Diminutive Flores "Hobbits"

**Sunday, April 23, 10:30 am – 12:00 pm (Room 175C)**

**Mechanism of Palate Development**
Chair – M. Douglas Benson (Texas A&M University College of Dentistry)

The mammalian secondary palate forms from two shelves of mesenchyme, sheathed in epithelium, that grow to midline and join. This midline fusion requires the elimination of the epithelial seam that forms between the two shelves. Failure of the shelves to grow to midline or to eliminate the seam causes cleft palate, which can only be corrected by surgery. This symposium examines the intracellular signaling events that cause the presumptive palatal shelves the grow, form the midline epithelial seam, and then dissolve that seam during embryogenesis. Special attention will be paid to the behavior and fate of the cells that form the midline seam.

- **Jeffrey Bush** (University of California San Francisco)
  Cellular Dynamics Of Tissue Fusion In Craniofacial Development And Orofacial Clefting
- **Yang Chai** (University of Southern California)
  Role of Dlx5 in the Development of the Palatal-Pharyngeal Region in Higher Vertebrates
- **Ali Nawshad** (University of Nebraska Medical Center)
  Role of TGFβ3 in Periderm Desquamation during Palatal Fusion

**Sunday, April 23, 10:30 am – 12:00 pm (Room 176AB)**

**Body On-Chip and 3D Culture**
*Applied Anatomy - Human Development and Disease Mini-Meeting*

Chair – Aloysius Klingelhutz (University of Iowa)

- **Aloysius Klingelhutz** (University of Iowa)
  Body On-chip and 3D Culture: An Overview
- **Megan McCain** (University of Southern California)
  Engineering Microphysiological Models of Human Cardiac and Skeletal Muscle Disease
- **Dan Dongeun Huh** (University of Pennsylvania)
  Microengineered Physiological Biomimicry: Human Organ-on-Chips
Sunday, April 23, 10:30 am – 12:00 pm (Room 178A)
Sharing Resources for Integrated Education and Research - The Virtual Microscopy Database
This session was funded and programmed in part by the AAA Innovations Program
Chair – Haviva Goldman (Drexel University College of Medicine)
In an era of integrated medical school curricula, and changing educational landscapes, there is great opportunity for the development of digital resources to enhance content delivery in the anatomical sciences. Shared image databases provide a crucial resource for tailoring content into multi-disciplinary, clinically relevant and longitudinal threads. Through the AAA innovation program, we have developed the Virtual Microscopy Database to serve as a centralized location for educators to share their slide collections and readily access a wealth of high quality virtual slides of normal, abnormal and developmental tissues. In this session we will focus on how this resource can be utilized by gross anatomists, neuroanatomists, histologists, embryologists and pathologists to create integrated content for educational or research purposes. We will describe the potential of this database, using data from University of Michigan’s prior experiences in slide-sharing as an example. We will then highlight examples of how virtual slide sharing has aided in the development of innovative and integrative materials for anatomical sciences teaching. Finally we will introduce the VMD interface, provide details on how to donate slides, access the collections, and provide preliminary data on donations and usage of the database thus far. The role and delivery of the anatomical sciences faces significant change in this age of educational integration, but sharable technologies available such as the VMD provide opportunities to ensure visual and conceptual links between the anatomical disciplines, other basic sciences and clinical applications.

Michael Hortsch (University of Michigan)
Using Virtual Microscopy and Advancing Anatomical Education Worldwide
Haviva Goldman (Drexel University College of Medicine)
Utilizing Shared Virtual Microscopy Slides to Create Innovative Anatomical Science Resources in an Integrated Curriculum
Lisa Lee (University of Colorado School of Medicine)
The Great Reveal: The Virtual Microscopy Database & How to Make It Work for You

Sunday, April 23, 12:00 pm – 1:00 pm (Room 178B)
Career Networking Lunch
Topic – Storytelling and the Art of Effective Science Communication – part 2
Leaders - Jason Organ (Indiana University School of Medicine), Krista Hoffmann-Longtin (Indiana University – Purdue University Indianapolis), Jonathan Rossing (Gonzaga University)
In this hands-on luncheon workshop, participants will practice the skills they learned in the AAA professional development symposium, “Storytelling and the Art of Effective Science Communication,” by participating in mock-interview sessions with a journalist. Participants will practice planning, developing, and delivering an engaging message about complex topics in an unscripted format. They will work to answer explain their research and questions in a succinct format, when working with varied kinds of media and audiences. 
Advanced registration required

Sunday, April 23, 2:00 pm – 3:30 pm (Room 175AB)
Cranial Biomechanics and Evolution
Chairs – Casey Holliday (University of Missouri) & Courtney Orsbon (University of Chicago)

Aaron Olsen (Brown University)
Linking Morphology and Motion: Testing Multibody Simulations against in vivo Cranial Kinematics in Suction Feeding Fishes Using XROMM
David Reed (Univ. of Illinois, Chicago)
Cell-matrix Interactions in Temporomandibular Joint Homeostasis
Kathy Rafferty (University of Washington)
Loading and Form in the Mammalian Jaw Joint

Sunday, April 23, 2:00 pm – 3:30 pm (Room 175C)
Progress of Human Brain Banking in China: Construction and Research
Co-sponsored by the Chinese Society for Anatomical Sciences
Chairs – Chao Ma (Institute of Basic Medical Sciences, Chinese Academy of Medical Sciences; Peking Union Medical College) & Xiao-Xin Yan (Central South University Xiangya School of Medicine)

- **Ai-Min Bao** (Zhejiang University School of Medicine)
  - Postmortem Study on Psychiatric Disorders
- **Shu-Wei Liu** (Shandong University Cheeloo Medical College)
  - Establishment of Fetal Brain Atlases during the Early Second Trimester
- **Xiao-Xin Yan** (Central South University Xiangya School of Medicine)
  - Formation of Dystrophic Neurites in Alzheimer's Disease

**Sunday, April 23, 2:00 pm – 3:30 pm (Room 176AB)**
**Induced Pluripotent Stem Cells and their Translational Applications**
**Applied Anatomy - Human Development and Disease Mini-Meeting**
Chair – Rajasingh Johnson (University of Kansas Medical Center)

- **Sang Jin Lee** (Wake Forest School of Medicine)
  - 3D Integrated Tissue and Organ Printing System to Produce Human Body Parts with Structural Integrity
- **Arghya Paul** (University of Kansas)
  - Engineering Nanobioactive Hydrogels for Stem cells and Regenerative Medicine
- **Rajasingh Johnson** (University of Kansas Medical Center)
  - Generation of Functional Cardiomyocytes Derived from Human Somatic Cells and Therapy for Heart Diseases

**Sunday, April 23, 4:00 pm – 5:30 pm (Room 175AB)**
**Genital Functional Morphology: Mechanical Forces and Sexual Selection**
This session was funded in part by an AAA Three-Year Research Meetings Outreach Grant
Chair – Diane Kelly (University of Massachusetts)

During copulation, male and female genitals interact with one another, applying forces like pressure and friction to induce tension, compression, and shear inside their tissues. Their intimate relationship may affect reproductive success, which would make it a key part of postcopulatory sexual selection, but we know little
about the mechanics or consequences of their mechanical interactions. This symposium features three
speakers examining the relationship between male and female genital morphologies during copulation in
vertebrates.

Matthew Dean (University of Southern California)
Understanding the Mechanical Stresses of Sexually Selected Structures; Is Baculum Remodelling
Influenced by the Frequency of Sex?

Dara Orbach (Dalhousie University)
Copulatory Fit of Common Bottlenose Dolphin (Tursiops truncatus) Genitalia

Christopher Friesen (University of Sydney)
It Takes Two to Tango: The Interaction of Male and Female Genital Traits Mediate Sperm and Ejaculate
Transfer during Mating

Sunday, April 23, 4:00 pm – 5:30 pm (Room 175C)
Evolutionary Approaches to Medicine
Co-sponsored by AAA’s Committee for Early Career Anatomists
Chair – Jason Mussell (LSU Health Sciences Center)
Evolution and Medicine, or Evolutionary Medicine, is the application of Darwinian principles to the practice
and science of healthcare. This application reframes questions of “How?” and “Why?” into “What traits
remain, via natural selection, that leave us most vulnerable to disease?” Armed with this knowledge, we are
able to treat disease more effectively by developing new therapies, elucidating the biologic processes
underlying pathologic states, and better ensuring public health. Most students are limited in their knowledge
of Darwinian principles to the concept of natural selection. By providing a few clear examples of the many links
between evolution and medicine, we hope to encourage our audience to engage their students in a rigorous
examination of the modern synthesis. This symposium brings together experts in the growing field of
Evolutionary Medicine for use in comparative medicine (Uhl), microorganisms and sepsis (Alcock), and cancer
treatment (Schiffman). This symposium continues efforts to expand knowledge of the field among educators of
healthcare workers and biologists teaching at all levels.

Elizabeth Uhl (The University of Georgia)
Evolutionary Medicine: Expanding the Insights from Animal Models

Joe Alcock (University of New Mexico)
Lessons from Evolutionary Medicine for Sepsis and Critical Care

Joshua Schiffman (Huntsman Cancer Hospital)
Elephants and Evolutionary Medicine: New Perspectives on Cancer Treatment

Sunday, April 23, 4:00 pm – 5:30 pm (Room 176AB)
Advances and Novel Approaches Illuminating Brain Development and Disorders
Co-sponsored by Developmental Dynamics
Applied Anatomy - Human Development and Disease Mini-Meeting
Chair – Gary Schoenwolf (University of Utah School of Medicine)
The session will examine the genetic and epigenetic mechanisms regulating the development of neuronal
circuits, behavior, and brain disorders.

Raunak Basu (University of Utah School of Medicine)
Selective Cell Adhesion Drives Synaptic Specificity in the Hippocampus

Daniel Kerschensteiner (Washington University School of Medicine)
Molecular Mechanisms of Retinal Circuit Assembly

Chris Gregg (University of Utah School of Medicine)
Novel Allele-Specific Epigenetic Effects Shape Genetic Architecture in the Brain

Sunday, April 23, 4:00 pm – 5:30 pm (Room 178A)
Anatomy Education Platform 1 - Technology in Anatomy Education
Co-chairs: Heather Billings (West Virginia University) & Michael Hortsch (Univ. of Michigan)
**Timothy Fleagle** (University of Iowa)
Students Prefer Narrated 3D Anatomy Videos for Prelab Preparation Compared to Traditional Resources and Usage is Related to Class Performance

**Sonya Van Nuland** (The University of Western Ontario)
The Anatomy of Traditional and E-Learning Education: How the Spatial Ability of Learners can Impact Learning Outcomes

**Laura Weinkle** (University of Colorado, Anschutz School of Medicine)
Voice in Digital Education: The Impact of Instructo’s Perceived Gender & Age on Student Learning and Evaluation

**Barbara Fenesi** (McMaster University)
The Effect of Image Quality, Repeated Study, and Assessment Method on Anatomy Learning

**William Albabish** (University of Guelph)
Using a Dissection-based Introductory Laboratory Video to Reduce the Anxiety State of Dissection- and Prosection-based Anatomy Students Prior to their First Cadaver-based Laboratory Experience

**Peyton Reves** (University of Mississippi Medical Center)
Approaches to Study and Preferred Learning Environments of First Year Medical Students in an Anatomy Course

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**Sunday, April 23, 5:30 pm – 6:30 pm**
Undergraduate Poster Reception
*Sponsored by Anatomical Sciences Educational Journal 10 year anniversary*

**Sunday, April 23, 6:30 pm – 7:30 pm (Room 175AB)**
"First Patient" Documentary Screening & Reception
Join us for a special sneak peek of a documentary screening of “First Patient,” a documentary following a first-year medical class at Mayo Medical School. Light refreshments will be served and a Q&A session with the documentary producers and AAA members Dr. Wojciech Pawlina and Nirusha Lachman of Mayo will follow the screening.

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**MONDAY, APRIL 24, 2017**

**Monday, April 24, 7:30 am – 8:30 am (Room 178B)**
Mentoring Breakfast

**Monday, April 24, 8:30 am – 10:00 am (Room 176AB)**
The Evolution of Vertebrate Form and Function Plenary Session
*Part of the Vertebrate Paleontology Mini-Meeting*
Chair – Casey Holliday (University of Missouri)
Vertebrate Paleontology uses many tools to unravel the fabric of time, morphology, physiology and evolution to better understand how organisms are built, how they work and how they change over time. Please join us on this journey through the origins of animal form and function.

- **Neil Shubin** (University of Chicago)
  Finding Your Inner Fish
- **Blaire Van Valkenburgh** (University of California Los Angeles)
  Unlocking the Skull: New Views into the Anatomy of Olfaction and Respiration in Mammals

**Monday, April 24, 10:30 am – 12:00 pm (Room 175AB)**
Novel Function of Fibrinolysis in Tissue Repair
Chairs – Joey Barnett (Vanderbilt University) & Stephanie Moore (Vanderbilt University)

- **Jonathan Schoenecker** (Vanderbilt University Medical Center)
  Fibrinolysis: A Critical Determinant in Musculoskeletal Tissue Repair
- **Matthew Flick** (Cincinnati Children’s Hospital Medical Center)
The Plasminogen Activation System in Inflammatory Arthritis Pathogenesis
James Luyendyk (Michigan State University)
Novel Functions of Fibrinogen in Liver Toxicity and Repair

Monday, April 24, 10:30 am – 12:00 pm (Room 175C)
Biomechanics of Multicellular Organization
Chair – Andras Czirok (University of Kansas Medical Center)
Andras Szabo (University College London)
Short-range Chemotaxis Towards Complement Component C3 Drives Radial Intercalation during Epiboly
Lance Davidson (University of Pittsburgh)
All Stressed Out: Physical Tension Drives Mesenchymal-To-Epithelial Transition in Heart Progenitor Cells
Alpha Yap (University of Queensland)
Adherens Junctions, Force-sensing, and Epithelial Homeostasis

Monday, April 24, 10:30 am – 12:00 pm (Room 176AB)
Vertebrate Anatomy, Paleontology and Future of Life’s History
In collaboration with Guest Society, Society for Vertebrate Paleontology
Part of the Vertebrate Paleontology Mini-Meeting
Chair: Alida Bailleul (University of Missouri)
Kerin Claeson (Philadelphia College of Osteopathic Medicine)
Guitarfishes in Rocks of All Ages
Anne Weil (Oklahoma State University Center for Health Sciences)
Inner Ear of the Cimolodontan Multituberculate Meniscoessus Robustus Supports Functional Interpretation and a Novel Phylogenetic Hypothesis
Mary Schweitzer (North Carolina State University)
Soft Tissue and Protein Preservation in Dinosaur Fossils: Evidence, Criteria and Implications

Monday, April 24, 10:30 am – 12:00 pm (Room 178A)
Integrating and Assessing Anatomy & Physiology Education: What does the Educational Research Tell Us?
AAA and APS Joint Session
Chairs – Valerie O'Loughlin (Indiana University School of Medicine) & Rebecca Lufler (Tufts University School of Medicine)
Many US medical and professional schools teach anatomy and physiology as separate subjects, yet in the undergraduate arena, combined anatomy and physiology (A&P) courses outnumber stand-alone anatomy or physiology courses 3 to 1. At Experimental Biology meetings, the assessment of anatomy and physiology education typically also has been separated, with AAA (American Association of Anatomists) primarily focusing on anatomy educational research and APS (American Physiological Society) primarily focusing on physiology education research. This proposed joint AAA/APS session brings together members from both societies to discuss educational research related to integrated anatomy and physiology (A&P) instruction. Our first two speakers, one an APS member and the other an AAA member, present educational research performed at the allied health and undergraduate level. The final speaker (who is a member of both APS and AAA) presents assessments of an integrated A&P curriculum developed for a new Texas medical school. Combined, these speakers will present information on and research about integrated anatomy and physiology education that will be of great interest to members in both of our societies. We hope this session will inspire others to propose future joint AAA/APS educational research sessions at EB.
Kristen Bruzzini (Maryville University)
Reflecting on Student-Led Teaching Experiences Allows Students to Become Metacognitively Aware of Their Anatomy and Physiology Knowledge
John Dobson (Georgia Southern University)
Retrieval Practice is a Superior Method for Learning Anatomy and Physiology Information
Dee Silverthorn (The University of Texas at Austin)
Integrated Anatomy and Physiology in a Medical Curriculum
Monday, April 24, 12:00 pm – 1:00 pm (Room 178B)

Career Networking Lunch
Topic – Burning out and Running on Empty: How Faculty and Graduate Students can Diagnose and Treat the Symptoms of Burnout
Leader - Tirzah Birk (Ivy Tech)
Advanced registration required

Monday, April 24, 2:00 pm – 3:30 pm (Room 175AB)

The Low Back: Anatomy, Dysfunction, and Mechanisms of Pain and Therapeutics
Chair – Joshua Little (Saint Louis University School of Medicine)
The low back (lumbar spinal region) is a clinically relevant anatomical region. Low back pain (LBP) is a very common condition and the primary cause for global disability. This is likely a result, in part, of poor pain management that stems from a lack of understanding of the pathophysiological mechanisms that underlie this complex condition. This symposium will provide insights into current approaches to better understand LBP and its treatment. Specifically, preclinical studies examining the pathological processes in pain generating spinal tissues, including lumbar facet joint and intervertebral disc degeneration, and how these processes can contribute to LBP will be discussed. Neurobiological mechanisms of key pain mediators contributing to LBP will also be presented. The mechanisms and beneficial effects of pharmacological and non-pharmacological approaches (spinal manipulation, exercise, diet, etc.) to treat LBP will be considered. Collectively, this symposium will provide understanding into the clinical importance and mechanistic contribution of the lumbar spine to LBP as well as insight into how LBP therapies provide pain relief.

Gregory Cramer (National University of Health Sciences)
Biology of the Lumbar Zygapophyseal Joint and Its Clinical Implications
Joshua Little (Saint Louis University School of Medicine)
Modeling Human Lumbar Spinal Osteoarthritis and Low Back Pain through Preclinical Studies
Laura Stone (McGill University)
Intervertebral Disc Degeneration and Low Back Pain: Pre-Clinical Studies and Clinical Implications

Monday, April 24, 2:00 pm – 3:30 pm (Room 175C)

Molecular Signals in Cardiovascular Biology
Chair – Jun Wang (Baylor College of Medicine)
This session will cover the most up to date studies of molecular signaling function in heart development, homeostasis and regeneration.

Jun Wang (Baylor College of Medicine)
microRNAs in Cardiac Conduction System
Ivan Moskowitz (The University of Chicago)
Hedgehog Signaling in Cardiac Development and Disease
James Martin (Baylor College of Medicine)
Hippo Pathway in Heart Development and Regeneration

Monday, April 24, 2:00 pm – 3:30 pm (Room 176AB)

Vertebrate Anatomy, Paleontology and Future of Life’s History
In collaboration with Guest Society, Society for Vertebrate Paleontology
Part of the Vertebrate Paleontology Mini-Meeting
Chair:  Habiba Chirchir (Marshall University)
Rachel Dunn (Des Moines University College of Osteopathic Medicine)
Are Early Eocene Asiadapid Primates Primitive or Derived? Implications for Behavior and Morphology of the Ancestral Euprimate
JGM Hans Thewissen (Northeast Ohio Medical University)
Paleontological and Developmental Evidence for the Origin of Baleen and the Loss of Teeth in Baleen Whales
Julia Clarke (University of Texas)
Insight into the Evolution of the Avian Vocal Organ, or Syrinx, from Enhanced-Contrast X-ray Computed Tomography and Fossil Data

Monday, April 24, 2:00 pm – 3:30 pm (Room 178A)

Anatomy Education Roundtable - Active Learning: Getting Health Profession Students to Engage
Chairs – Mike Pascoe (University of Colorado) & David Morton (University of Utah Health Science Center)
A primary goal of higher education is the retention and application of knowledge. Students learn more, in terms of both memorizing and problem solving, when they are engaged in the learning process through active learning. Health profession educators need to find ways to transition from dispensing information to building active learning classrooms where students engage in the material, collaborate with each other and participate in class activities. Through active engagement, students demonstrate understanding of material, analyze an argument and solve problems while under the guiding supervision of the professor thus, enabling them to identify errors and correct faulty logic. In other words, active learning activities help students to “practice” applying the information to “make things stick”. During this roundtable session the experiences of the attendees will be crowdsourced to provide principles of active learning and examples that can be incorporated into the classroom.

Monday, April 24, 4:00 pm – 5:30 pm (Room 175AB)

Reproducibility in Experimental and Preclinical Research
Guest session sponsored by The Histochemical Society
Chairs - Charles W. Frevert (University of Washington) & Stephen M. Hewitt (National Cancer Institute)
- Denis Baskin (University of Washington)
  Antibodies: The Good, Bad, and Ugly
- Yvonne Reid (ATCC)
  Cell Line Authentication for Biomedical Research
- Charles W. Frevert (University of Washington)
  Animal Models for Study of Human Disease: Increasing Reproducibility and Considerations for Translatability
- Stephen M. Hewitt (National Cancer Institute)
  Round Table Discussion: The Role of Journals and Societies in Improving Reproducibility in Research

Monday, April 24, 4:00 pm – 5:30 pm (Room 176AB)

Vertebrate Paleontology Platform Session
Part of the Vertebrate Paleontology Mini-Meeting
Chair: Julia Molnar (Howard University College of Medicine)
- Alida Bailleul (University of Missouri)
  Tyrannosaurus rex Shows Histological Evidence For Avian-Style Cranial Kinesis
Ashley Morhardt (Washington University School of Medicine in St. Louis)
Gross Anatomical Brain Region Approximation (GABRA): A New Landmark-based Approach for Estimating Brain Regions in Dinosaurs and other Archosaurs

Habiba Chirchir (Marshall University)
Revisiting the Evolution of Low Trabecular Bone Density in Modern Humans

Rachel Wallace (University of Texas at Austin, Jackson School of Geosciences)
X-Ray Computed Tomography Reveals Hidden Morphology in an Extinct Mammalian Relative

Gregory Erickson (Florida State University)
Fracture Property Experimentation On Hadrosaurid Dinosaur Wavy Enamel Reveals Energy-Robbing Crack Deflection and Channeling To Localize Damage: A Rare Case of Mammalian-Like Dental Sophistication In Reptiles

Lawrence Witmer (Ohio University)
The Remarkable, recently extinct "mole-duck" Talpanas lippa (Aves: Anseriformes) from Kauai, Hawaii: Behavioral Implications of its Neuroanatomy and Skull Morphology

Monday, April 24, 4:00 pm – 5:30 pm (Room 178A)
Educational Research Student Platform Awards Session
Student and Postdoc award finalists present oral presentations to compete for the Education Platform Award
Chair: Diana Ramirez-Bergeron (Case Western Reserve University)
Rachel Klaus (University of Colorado Anschutz Medical Campus)
Efficacy of Undergraduate Medical Education in Anatomical Sciences for Surgical Residency Preparation
Oleksiy Zaika (Western University)
Effect of Simulation-Based Cerebral Angiography Training on Navigational Error in Novices
Molika Keeler (University of Colorado Anschutz Medical Campus)
The Creation and Evaluation of a Novel Anatomical Mental Rotation Test for Medical Education Research
Timothy Fleagle (University of Iowa)
Students Prefer Narrated 3D Anatomy Videos for Prelab Preparation Compared to Traditional Resources and Usage is Related to Class Performance
Briauna Blezinski (University of Colorado Denver Anschutz Medical Campus)
To Model or Not to Model Embryonic Heart Development, that is the Educational Question
Wells Yang (Medical College of Georgia at Augusta University)
Comparison of Academic Performance within the First Year of Medical School with Performance on a National Board of Medical Examiners (NBME) Comprehensive Exam

Monday, April 24, 5:45 pm – 6:15 pm (Room 176AB)
AAA Members Meeting (formerly called the Business Meeting)
All AAA Members are encouraged to attend

Monday, April 24, 6:15 pm – 7:15 pm
Graduate Student/Postdoc Poster Reception

TUESDAY, APRIL 25, 2017

Tuesday, April 25, 8:30 am – 10:00 am (Room 175AB)
Neurobiology Award Hybrid Symposium
C.J. Herrick Award Lecture in Neuroanatomy featuring 2017 Young Investigator Award Recipient, Florian Merkle
Chair: Hillel Adesnik (Univ. of California, Berkeley)
Florian Merkle (University of Cambridge)
The Impact of Neuroanatomy on My Career: From Adult Neurogenesis to in vitro Disease Modelling
Amanda White (Penn State University College of Medicine)
Histopathological Changes in the Colon Accompany Dysmotility Following Experimental Spinal Cord Injury
Fernando Dias (Universidad de La Frontera)
Promising Effects of the Use of Laser Therapy and the Natural Latex Protein in Nerve Recovery Sciatic Severe Crushed. Ultrastructural Study, Sensory and Functional Study

Chandler Walker (Indiana University School of Medicine)
Therapeutic Effects of Long-term Systemic Adipose-derived Stem Cell Conditioned Medium in a Mouse Model of Amyotrophic Lateral Sclerosis

Ana Leda Simoes (School of Medicine of Ribeirao Preto)
Quantification of Substance P in Dorsal Root Ganglion Neurons in Young and Adult Rats, after Nociceptive Stimulation during the Neonatal Period

Tuesday, April 25, 8:30 am – 10:00 am (Room 175C)

Anatomy in the 21st Century: Anatomical Networks and Systems Biology

This session was funded and programmed in part by the AAA Innovations Program
Chair – Rui Diogo (Howard University)

Network Theory has been widely used to study complex biological systems at all scales. However, it was not until recently that network analysis has been used for the analysis of problems in evolutionary biology in general and in evolutionary morphology in particular. In the past five years, we have explored a new tool, Anatomical Network Analysis (AnNA), which has provided a full conceptual framework and operative methodology to explore broader macroevolutionary, developmental and medical issues.

In this symposium we will explore the broad reach of AnNA by: (1) introducing the concepts and the methodological tools for undertaking efficient analyses of evolutionary problems using anatomical network models, including subject such as modularity, integration, complexity and evolvability; and (2) showing new state-of-the-art research that is being done using AnNA concerning evolutionary biology, including developmental, EvoDevo, medical, functional, and structural problems. The symposium talks will go from broader macroevolutionary questions concerning the evolution of vertebrates to more specific questions concerning less inclusive clades, such as primates and in particular humans, thus emphasizing the crucial role that AnNA can play to link studies on vertebrate morphology, biological anthropology, questions about human evolution, and practical implications and applications for anatomical sciences and evolutionary medicine.

Rui Diogo (Howard University)

Evo-Devo, Epigenetics, Niche Construction and the Extended Evolutionary Synthesis: Crucial Implications for Anatomical and Medical Sciences in the 21st Century

Borja Esteve-Altava (Howard University College of Medicine)
Network Models: Connecting Anatomy to Systems Biology

Julia Molnar (Howard University College of Medicine) & Natalia Siomava (Howard University)
Diversity of the Primate Musculoskeletal System: Modularity, Integration, and Anatomical Variation in Humans and Their Relatives

Tuesday, April 25, 8:30 am – 10:00 am (Room 176AB)

Developmental Biology Award Hybrid Symposium

H.W. Mossman Award Lecture in Developmental Biology featuring 2017 Young Investigator Award Recipient, Maria Barna

Chair: Michael Jenkins (Case Western Reserve Univ.)

Maria Barna (Stanford University)

Specialized Ribosomes: A New Frontier in Gene Regulation, Organismal Biology, & Evolution

Annita Achilleos (Baylor College of Medicine)
A New Role of Ronin (Thap11) in the Neural Crest and Craniofacial Development in the Mouse

Christopher Percival (University of Calgary)
QTL Analysis of a Trade-off in Bone Length within the Mouse Zygomatic Arch

Mitchell Thom (Schulich School of Medicine and Dentistry)
Females are Not Proportionally Smaller Males: Relationships between Radius Anthropometrics

Holly Racine (Marshall University Joan C. Edwards School of Medicine)
Inhibiting IGF1 Activity in the Proximal Tibial Growth Plate Attenuates the Bone-Lengthening Effects of Temperature in Hindlimbs of Growing Mice
Tuesday, April 25, 8:30 am – 10:00 am (Room 178A)

**Preceding Professional Programs: Successful Anatomy Education in the Undergraduate Classroom**

Chair – Danielle Bentley (University of Guelph, Humber)

Anatomy education is not just for professional degree programs (ie. medicine, physical rehabilitation); it is also a core requisite for undergraduate, non-specialist students enrolled in various health sciences programs. Often times the undergraduate learning environment presents with unique challenges, including large class sizes with multiple sections, lack of access to traditional laboratory learning, and inexperienced junior-level study behaviours. Within this symposium undergraduate anatomy educators share and discuss evidence-based teaching strategies that represent longitudinal, iterative scholarship than span several consecutive years.

- **Danielle Bentley** (Toronto Rehabilitation Institute)
  Movement Guided Learning as an Efficacious, Effective, and Evidence-based Teaching Strategy Within the Undergraduate Anatomy Classroom

- **Leslie Mackenzie** (Queen's University)
  Transforming a Large Anatomy Class into a Student Centered Learning Experience

- **Jacqueline Carnegie** (University of Ottawa)
  Strategies to Help Students Tackle Complicated Anatomical Terminology

Tuesday, April 25, 10:30 am – 12:00 pm (Room 175AB)

**Crossmodal Plasticity: Structural and Functional Reorganization in the Cortex Following Sensory Deprivation**

Chair – Brian Allman (University of Western Ontario)

Following damage to a major sense, *crossmodal plasticity* occurs whereby there is an increased responsiveness in the deprived cortex to the remaining, intact senses. As will be discussed by the three invited speakers, a variety of electrophysiological, psychophysical, and neuroimaging techniques have been used in humans and other animals to reveal that the nature and extent of cortical crossmodal plasticity depends on the sense that was lost (e.g., vision versus hearing), as well as the age at which the deprivation commenced (e.g., early life versus adulthood). Furthermore, the collective work of the speakers will describe an exciting series of mutually-supportive studies which demonstrate that: (1) complete sensory loss is not required to induce crossmodal plasticity, as mild sensory impairment is sufficient to alter sensory processing in auditory, visual and multisensory cortices; (2) connections between cortical areas are altered following blindness or auditory deprivation, and; (3) these anatomical changes appear to underlie the enhanced perception known to occur in the spared senses (e.g., improved auditory processing in the blind).

- **Patrice Voss** (McGill University)
  Prolonged Sensory Loss Results in Altered Cortico-cortical Connectivity Patterns

- **M. Alex Meredith** (Virginia Commonwealth University)
  An Anatomical Basis for Cortical Crossmodal Plasticity

- **Brian Allman** (University of Western Ontario)
  Expansion of the Functional Border of the Audiovisual Cortex Following Partial Hearing Loss in Adulthood

Tuesday, April 25, 10:30 am – 12:00 pm (Room 175C)

**Cell Biology Award Hybrid Symposium**

*R.R. Bensley Award Lecture in Cell Biology featuring 2017 Young Investigator Award Recipient, Gloria Brar*

Chair: Kenneth Kramer (Creighton University)

- **Gloria Brar** (University of California-Berkeley)
  Unraveling Gene Regulatory Mechanisms in Meiotic Differentiation

- **Micah Schott** (Mayo Clinic)
  Hepatic Lipolysis by B-adrenergic Stimulation is Inhibited by Ethanol Exposure

- **Stephanie Moore** (Vanderbilt University)
  Enhancing Plasmin Activity Prevents Diet-Induced Skeletal Muscle Calcification Following Injury

- **Breanne Gibson** (Vanderbilt University)
  The Consumption of Plasminogen Following Severe Burn and Its Implications in Muscle Calcification

- **Kathy Jacyniak** (University of Guelph)
  Constitutive Cardiomyocyte Proliferation in the Postnatal Leopard Gecko (Eublepharis macularius)
Tuesday, April 25, 10:30 am – 12:00 pm (Room 176AB)
Morphological Sciences Award Hybrid Symposium
Chair: Chair – Casey Holliday (University of Missouri)

Shigeki Watanabe (Johns Hopkins University)
Ultrafast Recycling of Synaptic Vesicles

Kehinde Babatunde (University of Fribourg)
Malaria Derived Extracellular Vesicles Influence Human Neutrophils Function

DANIEL KELPSCH (University of Iowa)
Fascin Regulates Nuclear Actin during Drosophila Oogenesis

Bernd Zinselmeyer (Washington University School of Medicine)
Studying Interaction of the Immune and Vascular System using Intravital Multi Photon Microscopy

Olivia Ginty (Western University)
Dynamic, Patient-Specific Mitral Valve Replicas for Anatomically Accurate Surgical Modelling

Tuesday, April 25, 10:30 am – 12:00 pm (Room 178A)
Anatomy Education Platform 2 - Pedagogy in Anatomy Education
Chair: Keith Metzger (Seton Hall-Hackensack Meridian School of Medicine)

Adam Wilson (Rush University Medical Center)
A 50 Year Review and Meta-analysis of Anatomy Laboratory Pedagogies

Rachel Klaus (University of Colorado Anschutz Medical Campus)
Efficacy of Undergraduate Medical Education in Anatomical Sciences for Surgical Residency Preparation

Leslie Day (Northeastern University)
Does Motivation or Learning-Strategies Develop in a Flipped-Classroom?

Eric Zheng (McMaster University)
"The Long-Term Effects of an Interprofessional Education Dissection Course on Healthcare Professional Students"

Vaughan Lee (TTUHSC)
Formative Assessments in Anatomy: Promoting Self-Directed Learning with Self-Assessment

Mohammed Khalil (University of South Carolina School of Medicine Greenville)
The Relationship between Learning and Study Strategies Inventory (LASSI) and Performance on Anatomical Sciences in Medical Schools

Tuesday, April 25, 12:00 pm – 1:00 pm (Room 178B)
Career Networking Lunch

Tuesday, April 25, 2:00 pm – 3:30 pm (Room 175AB)
Form and Function Platform Session
Chair: Ashley Morhardt (Washington University School of Medicine in St. Louis)

Courtney Orsbon (University of Chicago)
Analysis of the Primate "Squeeze-back" Swallowing Mechanism using X-ray Reconstruction of Moving Morphology and Fluoromicrometry

Theresa Grieco (University of British Columbia)
Fluorescent Labeling in the Leopard Gecko Resolves Tooth Initiation Patterns in ovo and Suggests Origins of Post-hatching Shedding Patterns

Christopher Smith (Icahn School of Medicine at Mount Sinai)
Visualizing the Anatomy and Position of the Larynx in Balaenopterid Whales

Robert Druzinsky (University of Illinois at Chicago)
Free-body Analysis of the Masticatory Muscles in a Caviomorph Codent, Cavia Porcellus

Susan Rehorek (Slippery Rock University)
Embryogenesis of the Nasolacrimal Apparatus in the Laysan Albatross (Phoebastria immutabilis: Procellariiformes)
Avery Williams (University of Colorado Anschutz Medical Campus)
Sexual Dimorphism in Bones of the Thenar and Hypothenar Aspects of the Hand

Tuesday, April 25, 2:00 pm – 3:30 pm (Room 175C)
Developmental and Cell Biology Platform Session
Chair: Ralph Marcuccio (University of California, San Francisco)
Maureen Lamb (University of Iowa)
Investigating the Roles of Fascin in Collective Cell Migration using Drosophila Border Cell Migration
Kieran McDermott (University of Limerick)
Changes in Oligodendroglial and Microglial Cell Populations in the Embryonic Rat Spinal Cord Following Maternal Immune Activation
William Munoz (Stowers Institute for Medical Research)
Orphan Nuclear Receptor, GCNF, is Required for Early Neural Crest Cell Induction and Survival
Huojun Cao (The University of Iowa)
FoxO6 Regulates Hippo Signaling to Control Face Morphology
Seth Weinberg (University of Pittsburgh)
Modular 3D Dense Surface Analysis and GWAS Reveal Localized Genetic Effects on Human Facial Morphology involving Multiple Novel Loci
Billy Watson (Loma Linda University)
LHX2 is a Necessary Intermediate in FGF-induced SHH Expression during Limb Development

Tuesday, April 25, 2:00 pm – 3:30 pm (Room 175AB)
Stem Cells Platform Session
Chair: Martine Dunnwald (Univ. of Iowa)
Yu-An Chen (Graduate Institute of Medical Genomics and Proteomics, College of Medicine, National Taiwan University)
Propagating the Ovarian Cancer Stem Cells by Reprogramming the Tumor Cells
Emily Gilbert (University of Guelph)
Spinal Cord Regeneration in the Leopard Gecko: Activation and Heterogeneity of Ependymal Layer Cells
Alexia Hulin (CCHMC)
Contribution of Macrophages to Myxomatous Valve Disease
Alexandra Ysasi (Harvard Medical School/Brigham and Women's Hospital)
Deformation-Induced Ingression of Transitional Pleural Myofibroblasts during Compensatory Lung Growth
Robert Henkin (Center for Molecular Nutrition and Sensory Disorders)
Sonic hedgehog (Shh) in Parotid Saliva is a Cell Signaling Moiety that Acts as Stem Cells in Taste Buds to Maintain Normal Taste Function
Yoke-Chen Chang (Ernest Mario School of Pharmacy, Rutgers University)
SPARC and Hevin in Mustard-Induced Skin Wound Healing

Tuesday, April 25, 2:00 pm – 3:30 pm (Room 178A)
Linked Modules in Anatomical Inference: New Approaches to Morphological Integration
Chair – Emily Middleton (University of Missouri)
The concept of morphological integration has long been used to explore anatomical relationships in a diverse array of taxa from plants to animals, and in recent years integration has become an increasingly popular framework for exploring the evolution of shape in vertebrates particularly. This paradigm stems from the observation that traits do not evolve in isolation and encourages researchers to consider the hierarchical relationships upon which selection acts. This symposium focuses on research seeking to exploit this concept by considering multiple skeletal elements as parts of complex developmental or functional units existing within much larger genetic, behavioral, and environmental contexts.
Catalina Villamil (New York University)
From the Top of Your Head: Phenotypic Integration in the Head and Neck
Emily Middleton (University of Missouri)
The Modular Nature of the Trunk Skeleton in Anthropoid Primates
Campbell Rolian (University of Calgary)
Integration and Coevolution of the Mammalian Skeleton In "Real Time": The Case of the Longshanks Mouse

Tuesday, April 25, 4:00 pm – 4:30 pm (Room 176AB)
Henry Gray Scientific Award Symposia
H. Joseph Yost (University of Utah)
Left-Right Patterning and Congenital Heart Disease

Tuesday, April 25, 4:30 pm – 5:00 pm (Room 176AB)
Henry Gray Distinguished Educator Award Symposia
Wojciech Pawlina (Mayo Clinic College of Medicine and Science, Mayo Clinic)
Getting to the Heart of Anatomical Sciences Education

Tuesday, April 25, 5:00 pm – 5:30 pm (Room 176AB)
A. J. Ladman Exemplary Service Award Symposia
Marion Gordon (Rutgers University, Ernest Mario School of Pharmacy)
The Path to Anatomy via Molecular Biology

Tuesday, April 25, 6:30 pm – 7:30 pm (Hilton Chicago)
Closing Awards Pre-Ceremony Reception

Tuesday, April 25, 7:30 pm – 9:30 pm (Hilton Chicago)
Evening Closing Awards Ceremony Dinner

Tuesday, April 25, 9:30 pm – 10:30 pm (Hilton Chicago)
Closing Awards Post-Ceremony Reception