



2022 PHILADELPHIA, PA
APRIL 2-5

Reconnect at
#Anatomy22



SATURDAY, APRIL 2

Saturday, April 2, 8:30 am – 10:00 am

Applying the Science of Learning for Evidence-Based Instructional Design

Co-sponsored by AAA's Committee for Early-Career Anatomists

Chair: **Victoria Roach** (University of Washington)

Kristina Lisk (University of Toronto)

Explicit Connections Between Anatomy and Clinical Science are Key to Successful Cognitive Integration

Sarah Anderson (University of Calgary)

Methodological Approaches and Considerations for Generating Evidence that Informs the Science of Learning

Theodore Smith (Touro University College of Osteopathic Medicine)

The Brain on Anatomy: An Exploration of Neural Organization in Anatomy Novices and Experts Using fMRI

Saturday, April 2, 10:30 am – 12:00 pm

The Invisibility Cloak: Navigating & Supporting Mid-career Academics

Chair: **Michell Lazarus** (Monash University)

Rebecca Lufler (Tufts University School of Medicine)

The State of Mid-Career Academics Across the Anatomy Disciplines

Valerie D. O'Loughlin (Indiana University School of Medicine - Bloomington)

Charting a Path out of the Mid-career Doldrums and Towards Promotion to Full Professor

John Bertram (Monash University)

How Can My Departmental Chair Help Me Achieve My Goals?

Saturday, April 2, 10:30 am – 12:00 pm

Filled to the Brim: Master Class on the Pelvis, Perineum, & Pelvic Health

Chair: **Jennifer Dennis** (Kansas City University)

Melissa Carroll (The George Washington University School of Medicine and Health Sciences)

Hammock, Diaphragm, or Floor: Pelvic Anatomy for Healthcare Students

Kathryn Moore (University of Utah)

Shades of Gray: Teaching Embryology Beyond the Sex Binary

Karen Snowden (Lehigh Valley Health Network Rehabilitation Services)

Musculoskeletal Considerations in Pelvic Health

Saturday, April 2, 1:00 pm – 2:30 pm

Cardiovascular Biology Platform Session

Chair: **TBD**

Beryl Khakina (Philadelphia College of Osteopathic Medicine)

Novel Mediators of Reelin Signaling in Human Vascular Endothelial Cells

Elisabeth Steadman (Stony Brook University)

Fluid-Structure Interaction Study of Coronary Artery Disease Biomechanics

Christopher Krueger (Kansas City University-Joplin Campus)

Hepatic Arterial Patterns and Variations: Using CT Data Visualization Software to Decrease Procedural Complications Due to Hepatic Arterial Variations

Gary Farkas (University of Miami Miller School of Medicine)

Cardiac Structure and Function Relates to Body Composition and Metabolic Profiles in High Spinal Cord Injury

Riley Leonard (University of Iowa)

The *miR-200* Family Targets *Tbx5*, *Gata4*, and *Pitx2* during Cardiac Development and Regeneration

Wenqiang Liu (Colorado State University)

Effect of Pulmonary Hypertension on Biaxial Viscoelastic Properties of the Right Ventricle at Rest and Exercise Conditions

Saturday, April 2, 1:00 pm – 2:30 pm

Creating a Tailored Mentoring Program for Retention and Career Advancement of Educational Scholars in Medicine

Chairs: **Judith Litvin (Daniels)** (Lewis Katz School of Medicine at Temple University) & **Steven Popoff** (Lewis Katz School of Medicine at Temple University)

Elizabeth Leilani Lee (Cooper University Health Care)

Fundamentals of Successful Mentoring, Advising and Coaching

Jennifer Kogan (University of Pennsylvania)

Using Peer Observation with Feedback to Improve Teaching Skills

Steven Popoff (Lewis Katz School of Medicine at Temple University)

Career Advancement for Educational Scholars in Academic Medicine

Saturday, April 2, 1:00 pm – 2:30 pm

Molecular Complexity and Functional Flexibility of TGF β Family Signaling

Co-sponsored by Developmental Dynamics

Chair: **Gary Schoenwolf** (University of Utah)

Jan Christian (University of Utah)

Tril Dampens Nodal Signaling through Pellino2- and Traf6-mediated Activation of Nedd4l

Caroline Hill (The Francis Crick Institute)

Mechanistic Insights into Deregulated TGF- β Family Signalling in Human Disease

Jodie Babbitt (Massachusetts General Hospital, Harvard Medical School)

BMP Signaling and Iron Homeostasis

Saturday, April 2, 1:00 pm – 2:30 pm

Pelvic Anatomy: An Outlet for Inclusion (Roundtable)

Chairs: **Kelly Harrell** (Virginia Commonwealth University) & **Melissa Carroll** (George Washington University)

Ben Haseen (Morehouse School of Medicine)

The Importance of Gender Inclusive Terminology in Anatomy Education

Ryan Cox (University of Missouri Kansas City School of Medicine)

Effective and Affirming Communication with Transgender and Gender Nonconforming Patients

Saturday, April 2, 3:00 pm – 4:30 pm

Foregut Development and Congenital Disease (Hybrid Symposium)

Chair: **Jeffrey Bush** (University of California, San Francisco)

Ace Lewis (University of California, San Francisco)

NKX2-1 Directly Regulates *Efnb2* to Generate a Boundary that Allocates Tracheal Cells and Defines the Position of Tracheoesophageal Separation

Nicole Edwards (Cincinnati Children's Hospital Medical Center)

Discovering the Developmental Basis of Trachea-Esophageal Birth Defects: Evidence for Endosome-opathies

Jianwen Que (Columbia University)

Yap/Taz in Foregut Development

Xin Sun (University of California, San Diego)

Dissecting the Genetic Mechanisms Underlying Congenital Diaphragmatic Hernia

Saturday, April 2, 3:00 pm – 4:30 pm

Evolution of a Discipline – The Changing Face of Anatomy

Co-sponsored by The Anatomical Record

Chairs: **Jason Organ** (Indiana University School of Medicine) & **Heather Smith** (Midwestern University)

Shawn Boynes (American Association for Anatomy) & **Loydie Jerome-Majewska** (McGill University)

The Imperative for Scientific Societies to Change the Face of Academia: Recommendations for Immediate Action

Michael Blakey (William & Mary College)

W. Montague Cobb: Near the African Diasporic Origins of Activist and Biocultural Anthropology

Kathleen Muldoon (Midwestern University)

IMPROVing Communication about Diversity, Equity, and Inclusion in Health Professions Education

Saturday, April 2, 3:00 pm – 4:30 pm

Vitamins and Minerals in Development and Disease

Chair: **Annita Achilleos** (University of Nicosia Medical School)

Ross Poche (Baylor College of Medicine)

The Pathophysiology of Cobalamin (vitamin B12) Deficiency Syndromes Impacting Development

Lee Niswander (University of Colorado Boulder)

Micronutrient Balance Related to Neural Tube Defects and Prevention

Paul Trainor (Stowers Institute for Medical Research)

The Vitamin A Paradox: Too Much or Too Little Impacts Development and Disease

Saturday, April 2, 3:00 pm – 4:30 pm

Education Platform Session #1

Chair: **Troy Camarata** (New York Institute of Technology)

Catherine Wang (McGill University)

Educational Research Platform Presentation Award Finalist

Student Approach to Learning and Visuospatial Ability as Independent Predictors of Academic Performance in Human Anatomy

Megan Fagalde (Indiana University School of Medicine)

Educational Research Platform Presentation Award Finalist

Foundational Anatomy Knowledge Correlates with Success in Medical Anatomy

Michelle Svestrup (The University of Western Ontario)

Educational Research Platform Presentation Award Finalist

Do Our Hands See What Our Eyes See: Investigating the Relationships Between Spatial and Haptic Abilities

Homaira Azim (Lewis Katz School of Medicine at Temple University)

Objectification, Desensitization, and Personification: Medical Student Strategies for Dealing with Human

Body in the Anatomy Lab

Alan Boyd (Pacific Northwest University of Health Sciences)

Educational Research Platform Presentation Award Finalist

Effects of Partner vs Individual Restudy Techniques on Knowledge and Confidence While Learning Anatomy

Brooke Bellas (McGill University)

Examining the Impact of Cadaver-Based Anatomy Laboratory Experiences on Medical Students Through a Thematic Analysis of their Written Reflections

Saturday, April 2, 4:45 pm -5:45 pm

Keynote Speaker

Peter Hotez, MD, PhD, FASTMH, FAAP

Dean, National School of Tropical Medicine

Professor, Departments of Pediatrics, Molecular Virology & Microbiology

Co-Head, Section of Pediatric Tropical Medicine

Health Policy Scholar

Baylor College of Medicine

Antipoverty Vaccines: The Science vs. The Antiscience

SUNDAY, APRIL 3

Sunday, April 3, 8:30 am – 10:00 am

Epigenetic Regulation of Cardiac Disease

Chairs: **Emma Robinson** (University of Colorado, Anschutz Medical Campus) & **Matthew Stratton** (Ohio State University Medical Center)

Federica Accornero (Ohio State University)

mRNA Modification: At the Heart of Stress Adaptation

Michiel Alexanian (Gladstone Institute of Cardiovascular Disease)

A Transcriptional Switch Governs Fibroblast Activation in Heart Disease

Yibin Wang (Duke-NUS Medical School)

Regulation of the Translatome in Cardiac Remodeling

Sunday, April 3, 8:30 am – 10:00 am

The Dynamic Extracellular Matrix—Development, Homeostasis, and Disease

Chairs: **Rajprasad Loganathan** (Johns Hopkins University) & **Clarissa Henry** (University of Maine)

Sally Horne-Badovinac (The University of Chicago)

Spinning the Matrix – Mechanisms of Basement Membrane Secretion and Assembly

Treena Livingston Arinzeh (New Jersey Institute of Technology)

Tissue engineering Strategies to Provide Insights into the Function and Dynamics of the Fibrous ECM

Clarissa Henry (University of Maine)

Extracellular Matrix and Skeletal Muscle Development, Homeostasis, and Disease

Sunday, April 3, 8:30 am – 10:00 am

The Interstitium and the Etiology of Pain

Chairs: **Rebecca Pratt** (Oakland University William Beaumont School of Medicine) & **Laurice Nemetz** (Pace University)

Antonio Stecco (New York University School of Medicine)

Fascia in Myofascial Pain Syndrome

Neil Theise (NYU Langone Health)

Evidence for Continuity of Interstitial Spaces across Tissue and Organ Boundaries in Humans

Helene Langevin (National Institutes of Health)

Fascia Mobility and Musculoskeletal Pain

Sunday, April 3, 8:30 am – 10:00 am

Anatomy of Amputation: Surgical, Biomechanical, and Educational Implications

Chair: **Ellen Robertson** (University of Mississippi Medical Center)

Benjamin Miller (University of Iowa)

Amputation – from the Routine to the Rotationplasty

Malaka Finco (University of North Texas Health Science Center)

Musculoskeletal and Biomechanical Adaptations Post-Amputation

Miracle Buckley (University of Mississippi Medical Center)

Learning the Legs When You Have None

Sunday, April 3, 1:00 pm – 2:30 pm

Revisiting Cell Lineage Commitment: Metaplasia in Regeneration and Disease

Chair: **Jason Mills** (Baylor College of Medicine)

Jason Mills (Baylor College of Medicine)

Paligenosis: A Conserved Program Differentiated Cells use in Regeneration and Misuse in Cancer

Eileen Shore (University of Pennsylvania)

Heterotopic Ossification - Replacement of One Tissue with Another

Kathleen DelGiorno (Vanderbilt University)

Metaplasia-induced Epithelial Heterogeneity Directs Pancreatic Injury and Tumorigenesis

Sunday, April 3, 1:00 pm – 2:30 pm

Racial Disparities in Health and Disease

Chair: **Martine Dunnwald** (University of Iowa)

Amy Bentley (NIH, National Human Genome Research Institute)

Health Disparities in Cardiometabolic Traits: Genomics, Gaps, and Paradoxes

Donald Glass (UT Southwestern Texas Medical Center)

Dermatologic Health Disparities

Clement Adebamowo (University of Maryland School of Medicine)

Disparities in Cancer Incidence and Outcomes

Sunday, April 3, 1:00 pm – 2:30 pm

Biological Anthropology Platform Session

Chair: TBD

Neysa Grider-Potter (University of Texas Health San Antonio)

Energetic Costs of Hindlimb-dominated Locomotion in Sifakas (*Propithecus verreauxi*)

Courtney Orsbon (University of Vermont)

Human Hyoid Descent is Adaptive rather than Maladaptive for Swallowing Performance: An Experimental and Computational Argument

Deanna Goldstein (Renaissance School of Medicine at Stony Brook University)

Postdoctoral Platform Presentation Award Finalist

A Knuckle-Walking Signal in the Trabecular Architecture of the African Ape Scaphoid

Andrew Deane (Indiana University School of Medicine)

What Can Monkey Fossils Tell Us about Early Human Evolution? New Insights from the Analysis of Molar Cusp Proportions in Fossil Cercopithecoids from Laetoli, Tanzania

Thomas Greiner (University of Wisconsin-La Crosse)

Where is the Primate Transverse Tarsal Joint? Chopart vs. Lisfranc

Mara Fields (University of Missouri)

Three-dimensional Functional Capacity of the Intrinsic Hand Musculature in Humans and Chimpanzees

Sunday, April 3, 1:00 pm – 2:30 pm

Education Platform Session #2

Chair: Olusegun Oyedele (University of British Columbia)

Dana Peterson (Drexel University COM)

A Degree Program in Modern Anatomical Sciences Aimed at Improving Matriculation and Retention Rates for Underrepresented Students in Medicine

Margaret McNulty (Indiana University School of Medicine)

The Glass Ceiling Thickens: How The COVID-19 Pandemic Negatively Impacted Academic Medicine Faculty

Anette Wu (Columbia University)

Cultural Competency Preparedness in Medical and Health Professions Students - A Collaborative Study Involving Anatomy Departments at 20 International Universities

William Brooks (University of Alabama at Birmingham)

Come Roll with Me: Integrating Disability Awareness and Interprofessional Learning into a Medical Musculoskeletal Course

Rebecca Wisner (Indiana University School of Medicine)

Novice Knowledge of Histological Eponyms and Descriptive Terms

Derek Harmon (University of California San Francisco)

Needs Assessment of Essential Anatomy - A Perspective from Primary Care Residents

Sunday, April 3, 3:00 pm – 4:30 pm

Wound Healing and Regeneration of Limbs and Organs

Co-sponsored by Developmental Dynamics

Chair: **Koji Tamura**

Catherine McCusker (University of Massachusetts Boston)

Molecular Basis of Neural Control of Ontogenetic Allometric Growth in the Regenerating Axolotl Limb

Jessica Whited (Harvard University)

Systemic Cell Cycle Re-entry Following Amputation in Axolotl: Consequence and Mechanism

Kenneth Poss (Duke University Medical Center)

Remote Injury Responses during Zebrafish Heart Regeneration

Sunday, April 3, 3:00 pm – 4:30 pm

All You Wanted to Know about Personal Statements

Chair: **Jonathan Wisco** (Boston University School of Medicine)

Rachel Menegaz (University of North Texas Health Science Center)

Personal Statements for Graduate School: Perspectives from an Admissions Committee

Jonathan Wisco (Boston University School of Medicine)

Personal Statements for Health Sciences Professional School: Admissions Committees Want to Hear Your Story

David Asprey (The University of Iowa)
Personal Statement: The Leadership Perspective

Sunday, April 3, 3:00 pm – 4:30 pm

Enhancers in Evolution and Disease

Chair: **Licia Selleri** (University of California, San Francisco)

Axel Visel (Lawrence Berkeley National Laboratory)

Distant-acting Enhancers in Development and Disease

Douglas Menke (University of Georgia)

Regulatory Mutations and Convergent Evolution in Anolis Lizards

Jaaved Mohammed (Stanford University School of Medicine)

Making the Human Face: Elucidating the Role of Enhancers in Hominid Craniofacial Evolution

Sunday, April 3, 3:00 pm – 4:30 pm

Decolonizing the Anatomy Curriculum (Roundtable)

Chair: **Claire Smith** (Brighton and Sussex Medical School)

Claire Smith (Brighton and Sussex Medical School)

What does Decolonizing Mean for Anatomy?

Nalini Pather (University of New South Wales)

What De-colonial Actions are Currently Taking Place in Anatomy?

Sean McWatt (McGill University)

What Does a Post-colonial Anatomy Curriculum Look Like?

Sunday, April 3, 4:45 pm – 5:30 pm

Plenary Speaker

Julienne Rutherford

University of Illinois at Chicago

Developmental Interconnectivity at the Nexus of Primates, Pregnancy, and Professionalism

MONDAY, APRIL 4

Monday, April 4, 8:30 am – 10:00 am

Lab Start Up and Beyond: Managing Money, People and Projects

Chair: **Aidan Ruth** (Saint Louis University School of Medicine)

Michelle Mazei-Robison (Michigan State University)

Show Me the Money: Tips for Developing and Maintaining a Lab Budget

Dana Duren (University of Missouri School of Medicine)

Choosing and Retaining your Laboratory Team

Martin J. Cohn (University of Florida)

Title TBD

Monday, April 4, 8:30 am – 10:00 am

A Multiomics View of Neural Crest Multipotency and Specification

Chairs: **Kristin Artinger** (University of Colorado Anschutz Medical Campus) & **Anne-Helene Monsoro-Burq** (Institute Curie Paris)

Anne-Helene Monsoro-Burq (Institute Curie)

Single Cell Transcriptomes Highlight the Temporal Hierarchy of Fate Decisions of the Developmental Tree from Neural Border Stages to Migration of NC Cells

Rosa Uribe (Rice University)

Using Single Cell Omics to Understand Posterior Neural Crest Differentiation in Zebrafish

Ronald Parchem (Baylor College of Medicine)

MicroRNAs Promote Neural Crest Multipotency

Monday, April 4, 8:30 am – 10:00 am

Beyond Description: Realizing the Potential of Endocasts in Modern Neuroscience

Chair: **Catherine Early** (Science Museum of Minnesota)

Catherine Early (Science Museum of Minnesota)

The Potential and Limitations of Endocasts for Understanding Archosaur Brain Evolution

Speaker #2 TBD

Amy Balanoff (Johns Hopkins University)

Endocasts and the Origins of Crown Behaviors: Examples from the Deep History of Birds

Monday, April 4, 8:30 am – 10:00 am

Building it Better: How History, Ethics, and Research can Inform the Development of Extended Reality in Anatomy Education (Hybrid Symposium)

Chairs: **Claudia Krebs** (University of British Columbia) & **Bruce Wainman** (McMaster University)

Bruce Wainman (McMaster University)

A Research-based Approach to Pedagogy in xR - What's the Evidence?

Claudia Krebs (University of British Columbia)

Ethical and Inclusive Design Principles in xR

Vicky Vandenbossche (Ghent University, Corneel Heymanslaan)

Digital Body Preservation

Kristen Ramirez (NYU Grossman School of Medicine)

Immersive XR Anatomy Teaching Tools: Review of Four Custom-Built Virtual Spaces, Their Deployments and Educational Value

Monday, April 4, 1:00 pm – 2:30 pm

Cell Biology Award Hybrid Symposium

R.R. Bensley Award in Cell Biology Lecture featuring 2022 Early-Career Investigator Award Recipient

Patricia Ward

Chair: TBD

Patricia Ward (Emory University School of Medicine)

HIF1a and Angiogenesis are Critical for the Regenerative Effects of Exercise

Brad Amendt (University of Iowa)

The *mir-200* Family Regulates the Epithelial Stem Cell Niche during Craniofacial and Dental Development

Adam Jaremek (University of Western Ontario)

Langman Graduate Student Platform Presentation Award Finalist

Elucidating the Role of Hypoxia Signaling in Placental Trophoblast Differentiation

Marie-Claude Beauchamp (Research Institute McGill University Health Center)

Craniofacial Defects Persist in *Eftud2* mutant mice with P53 Deletion

Nicole Thompson (University College London)

Fascicular Organisation and Neuroanatomy of the Porcine and Human Vagus Nerves: Allowing for Spatially Selective Vagus Nerve Stimulation

Monday, April 4, 1:00 pm – 2:30 pm

Cellular Diversity and the Disease Transition Using Light Sheet Microscopy and Single Cell Analysis

Chair: **Paul Kulesa** (Stowers Institute for Medical Research)

Abhishek Kumar (Marine Biology Laboratory/University of Chicago)

Eszter Posfai (Princeton University)

Kara Cerveny (Reed College)

Monday, April 4, 1:00 pm – 2:30 pm

Feeding Biomechanics and Functional Morphology of Extinct Amniotes (Hybrid Symposium)

Chairs: **Christopher Noto** (University of Wisconsin-Parkside) & **Heather Smith** (Midwestern University)

Ali Nabavizadeh (University of Pennsylvania School of Veterinary Medicine)

Evolutionary Innovations of the Feeding Apparatus in Herbivorous Dinosaurs

Joseph Peterson (University of Wisconsin Oshkosh)

Bite Force and Feeding Traces of *Tyrannosaurus* throughout Ontogeny: A Review

Heather Smith (Midwestern University)

Dietary Diversity and Evolution of Cranial Adaptations in Turtles

Christopher Noto (University of Wisconsin-Parkside)

Specialized Feeding Morphology in the Small Crocodyliform *Scolomastax* and Implications for Woodbine Paleoeecology

Monday, April 4, 1:00 pm – 2:30 pm

Cultural and Ethical Considerations Regarding Teaching using Human Remains

Chairs: **Valerie D. O'Loughlin** (Indiana University School of Medicine - Bloomington) & **Anne Burrows** (Duquesne University)

Beverley Kramer (University of the Witwatersrand)

The Ethics of Sourcing a Cadaver Population – a Perspective from South Africa

Amberly Reynolds (Sam Houston State University College of Osteopathic Medicine) & **Elizabeth**

Pennefather-O'Brien (Medicine Hat College)

Native American and First Nation Perspectives on the Use of Human Remains in Education & Proximity to Death

Pamela Geller (University of Miami)

Without Their consent: Handling Legacy Collections and Anatomy Teaching Specimens Acquired without Informed Consent

Monday, April 4, 3:00 pm – 4:30 pm

Developmental Biology Award Hybrid Symposium

H.W. Mossman Award in Developmental Biology Lecture featuring 2022 Early-Career Investigator Award Recipient Yan Jing

Chair: TBD

Yan Jing (Texas A&M College of Dentistry)

Novel Roles of Tendon in the Postnatal Growth and Expansion of TMJ condyle

Lila Huston (University of North Texas Health Science Center)

Langman Graduate Student Platform Presentation Award Finalist

Cochlear Duct Abnormalities in Mice With Osteogenesis Imperfecta

Allison Machnicki (Marshall University Joan C. Edwards School of Medicine)

Postdoctoral Platform Presentation Award Finalist

Juvenile Mice Exhibit Inverse Catch-Up Growth but Retain Disorganized Growth Plates Following a High-Fat to Low-Fat Diet Intervention

Karyn Jourdeuil (The George Washington University)

Dissecting the Role of the Six1-Associated Genes in Craniofacial Development and Disease

Irfan Saadi (University of Kansas Medical Center)

Novel Insights into the Fundamentals of Palatal Shelf Elevation Dynamics in Normal Mouse Embryos

Monday, April 4, 3:00 pm – 4:30 pm

Breaking Down Big Data into Functional Insights

Chair: **Paul Kulesa** (Stowers Institute for Medical Research)

Monday, April 4, 3:00 pm – 4:30 pm

Vertebrate Morphology Platform Session

Chair: TBD

Christopher Griffin (Yale University)

Postdoctoral Platform Presentation Award Finalist

The Developing Bird Pelvis Passes through Ancestral Archosaurian and Dinosaurian Conditions

Casey Holliday (University of Missouri)

Flat or flexible? Evolutionary Cranial Biomechanics and the Origins of Modern Archosaur Skulls

Valerie DeLeon (University of Florida)

Brain Shape Provides a Structural Mechanism for Postorbital Septation in Primates

Zachary Morris (Yale University)

Patterns of Secondary Palate Convergence across Amniota

Emma Schachner (Louisiana State University Health Sciences Center)

Intra- and Interspecific Structural Variation in the Archosaur Lung: Insights from 3D Imaging and Segmentation

Katrina Jones (University of Manchester)

Evolutionary Origins of Mammalian Axial Function Revealed through Digital Bending Experiments

Monday, April 4, 3:00 pm – 4:30 pm

Education Platform Session #3

Chair: **Jessica Byram** (Indiana University School Medicine)

Ann Zumwalt (Boston University School of Medicine)

The Emotional Experiences of Students in Dissection- and Prosection-based Cadaveric Anatomy Courses

Christina Fojas (Marist College)

The Relationship between Gross Anatomy Performance and the Learning and Study Strategies Inventory (LASSI) Among Physician Assistant Students

Yingxin He (Florida International University Herbert Wertheim College of Medicine)

Enhancing Female Pelvic Anatomy Education with Clinical Vignettes and Problem-Based Learning (PBL)

Cheryl Vasan (Cooper Medical School of Rowan University)

Which Performs Better: Open Book Versus Closed Book Online Gross Anatomy Practical Examination

Sarah Keim (University of Kansas Medical Center)

Essential Anatomy for Required Clerkships: A Clinical Perspective

Erin Fillmore (Warwick Medical School)

Drawing and Building Your Way to Understanding: The Importance of Constructing Multiple Representations When Learning Anatomy

Monday, April 4, 4:45 pm – 5:30 pm

Plenary Speaker

Arthur Lander

University of California, Irvine
Title TBD

TUESDAY, APRIL 5

Tuesday, April 5, 8:30 am – 10:00 am

Neurobiology Award Hybrid Symposium

C.J. Herrick Award in Neuroanatomy Lecture featuring 2022 Early-Career Investigator Award Recipient Michael Yartsev

Chair: TBD

Michael Yartsev (University of California, Berkeley)

The Neural basis of Complex Spatial, Social and Acoustic Behaviors – in Freely Behaving and Flying Bats

Vonnie Shields (Towson University, Fisher College of Science and Mathematics)

Functional Morphology of Sensory Organs of the House Cricket, *Acheta domesticus* (L.): A Morphological and Physiological Investigation

Melissa Rivera-Lopez (University of Puerto Rico, Medical Sciences Campus)

The Effect of Atrazine on Fear Behaviors in Rats

Alpen Ortug (Harvard Medical School)

Postdoctoral Platform Presentation Award Finalist

Human Fetal Brain Magnetic Resonance Imaging (MRI) Tells Future Emergence of Autism Spectrum Disorders

Neus Martínez Abadías (University of Barcelona)

Brain Morphology and Underlying Genetic Correlates in Schizophrenia

Tuesday, April 5, 8:30 am – 10:00 am

New Insights into the Anatomy of the Tetrapod Respiratory System

Co-sponsored by Guest Society, International Society of Vertebrate Morphology (ISVM)

Chair: Colleen Farmer (University of Utah)

Celeste Nelson (Princeton University)

How the Lung Folds Itself: Biophysical Insights from Evolution

Astrid Gillich (Stanford University School of Medicine)

Dissecting Alveolar Patterning and Maintenance at Single-cell Resolution

Jeff Barrow (Brigham Young University)

Reptile to Chicken Enhancer Swaps to Understand the Molecular Basis Underlying Morphological Diversity in the Vertebrate Lung

Tuesday, April 5, 8:30 am – 10:00 am

High Resolution Whole Brain Mapping Approaches to Examine Cellular Architecture in Mice

Chair: Yongsoo Kim (The Pennsylvania State University)

Jayaram Chandrashekar (HHMI Janelia Research Campus)

Multi-scale Brain-wide Analysis of Connectivity of Individual Neurons in the Mouse Brain

Julie Harris (Cajal Neuroscience)

Mapping Brain-wide Pathologies in Mouse Models of Neurodegeneration

Yongsoo Kim (The Pennsylvania State University)

Neuronal and Non-neuronal Cell Type Mapping in the Mouse Brain

Tuesday, April 5, 8:30 am – 10:00 am

Codes, Themes, and Methodologies, Oh My! Improving Rigor of Qualitative Research in Anatomy Education

Chair: **Angelique Dueñas** (Northwestern University, Feinberg School of Medicine)

Angelique Dueñas (Northwestern University, Feinberg School of Medicine)

Back to Basics: Qualitative Research and Methodologies in Anatomy Education

Michelle Lazarus (Monash University)

Re-Framing Reality: Framework Analysis as a Step-Wise Approach to Thematic Analysis

Jessica Byram (Indiana University School of Medicine)

Do you trust me? Rigor and Information Power in Qualitative Research

Tuesday, April 5, 1:00 pm – 2:30 pm

Morphological Sciences Award Hybrid Symposium

W.M. Cobb Award in Morphological Sciences Lecture featuring 2022 Early-Career Investigator Award Recipient Akinobu Watanabe

Chair: TBD

Akinobu Watanabe (New York Institute of Technology)

Journey through a Phenomic Universe: Frontiers in Analysis of Morphological Data

Tooba Husain (University of North Texas Health Science Center)

Langman Graduate Student Platform Presentation Award Finalist

Neurocranial Growth in the OIM Mouse Model of Osteogenesis Imperfecta

Katharine Ryan (University of Tennessee, Knoxville)

Langman Graduate Student Platform Presentation Award Finalist

Employing Spherical Harmonics in Assessing the 3D Shape Variation and Evolutionary Potential of Human Sphenoidal Sinuses

Marc Pizzimenti (University of Iowa)

Paraffin Fixed Human Trabecular Bone Specimens for Study of Osteoporosis

Misty Haji-Sheikh (Northern Illinois University)

An Enterprise in 3-D Printed *Smilodon fatalis* Mandible Reconstruction: Experimentation Where No Fossil or Cast Has Gone Before

Tuesday, April 5, 1:00 pm – 2:30 pm

The Microbiome in Health, Disease and Evolution

Chair: **Christopher Hernandez** (Cornell University)

Christopher Hernandez (Cornell University)

The Microbiome and Bone

Laura Weyrich (Penn State University)

The Evolutionary History of Human Microbiota and Why it Matters for Human Health Today

Ivan Vujkovic-Cvijin (NIH, NIAID)

The Biome in Disease

Tuesday, April 5, 1:00 pm – 2:30 pm

Comparative Anatomy Platform Session

Chair: TBD

Kara Peters (Pennsylvania State University)

The Influence of Body Size and Phylogeny on Trabecular Microstructure in the Proximal Femur and Humerus of Rodents and Primates

Matthew Vickaryous (University of Guelph, Ontario Veterinary College)

Histological Diversity and Evolution of Lizard Osteoderms

Anne Burrows (Duquesne University)

Dog Faces Are Faster than Wolf Faces

Lindsey Koper (Howard University)

Morphological Trends of the Pinniped Tympanic Bulla, with Emphasis on Phocidae

Rebecca Shepherd (Lancaster University)

A Mammoth Task: Identifying Mammoth Ivory using Raman Spectroscopy

Tuesday, April 5, 1:00 pm – 2:30 pm

Authentic Assessments in Anatomical Sciences: How Do We Climb up the Ladder of Integration?

Chairs: **Stephen Loftus** (Oakland University William Beaumont School of Medicine) & **Varna Taranikanti** (Oakland University William Beaumont School of Medicine)

Ibrahim Inuwa (Mohammed Bin Rashid University of Medicine and Health Sciences)

Maximizing Opportunities for Anatomy Learning: Use of an Authentic OSPE as Part of Assessment in Anatomy

Dinesh Kumar Srinivasan (National University of Singapore)

Can Simulation be a Learning and Assessment Tool for Collaborative Learning in the Preclinical Years?

Varna Taranikanti (Oakland University William Beaumont School of Medicine)

Fostering Students Collaborative Learning through Innovative Integrated Assessments in a Laboratory Setting

Tuesday, April 5, 3:00 pm – 4:30 pm

Non-traditional Models to Study Craniofacial Development (Hybrid Symposium)

Co-sponsored by the Society for Craniofacial Genetics and Developmental Biology (SCGDB)

Chair: **David Clouthier** (University of Colorado Anschutz Medical Campus)

Daniel Meulemans Medeiros (University of Colorado Boulder)

Lessons from Jawless Fish and Headless Worms about the Origin of the Vertebrate Skull

Michael Shapiro (University of Utah)

Genetics of Craniofacial Variation in the Domestic Pigeon

Khanh To (Virginia Tech)

Closing in the Skull: Drivers of Ontogenetic Changes in Emu Skulls, *Dromaius novaehollandiae* (Palaeognathae: Casuariidae)

Laura Haynes (University of Florida)

Follow Your Nose: Ontogeny of the Olfactory Duct in Primates

Tuesday, April 5, 3:00 pm – 4:30 pm

Perilacunar Remodeling: The Role of Osteocytes in Molding the Bone They Live In

Chair: **Tamara Alliston** (University of California, San Francisco)

Sarah Dallas (University of Missouri, Kansas City)

Dynamics of Osteocyte Embedding and Differentiation and the Fate of Osteocytes after Bone Resorption

Joel Boerckel (University of Pennsylvania)

Tunnels in the Rock: Mechanobiology of Osteocyte Morphogenesis

Tamara Alliston (University of California, San Francisco)

Osteocyte Control of Bone Quality and Fragility in Skeletal Aging

Tuesday, April 5, 3:00 pm – 4:30 pm

Cell Biology Platform Session

Chair: TBD

Angelo Antiguas (University of Iowa)

Rab11A forms a Complex with Interferon Regulatory Factor 6 in Recycling Endosomes

Karli Wittorf (University of Nebraska Medical Center)

The Role of Ubiquitin E3 Ligase, FBOX21, in Regulating Healthy and Malignant Hematopoietic Stem and Progenitor Cells (HSPC)

Brittany Hufft-Martinez (University of Kansas Medical Center)

SPECC1L Deficiency Causes Shortened Primary Cilia and Genetically Interacts with IFT-A deficiency to Affect Palatogenesis

Sydney Greer (University of Nebraska Medical Center)

NCAD and ITGB1 Coordinately Regulate Growth Plate Cartilage Architecture

Hannah Wesselman (University of Notre Dame)

Uncovering the Ciliogenesis Regulatory Network

Winnie Shum (Shanghaitech University)

Junctional Endocytosis Senses Luminal Lipophilic Signal and Promotes Lipoprotein Cargo Absorption Through FCGR2B and Occludin

Tuesday, April 5, 3:00 pm – 4:30 pm

Education Platform Session #4

Chair: Dana Peterson (Drexel University)

Aiden Jayanth (Brighton and Sussex Medical School)

Using Digital Innovation to Support Anatomy and Surgical Education during the Pandemic

Kaitlin Marshall (University of Toronto)

Continuing the Legacy of Grant's Museum: Anatomy Education in the Digital Era

Geoffroy Noel (University of California, San Diego)

The Use of HoloLens Increases the Engagement While Reducing the Cognitive Load of Senior Medical Students When Overlaying Medical Imaging of Body Donors during the Dissection

Katherine Gustilo (University of Colorado - Anschutz Medical Campus)

3D Embryonic Heart Goes Mobile: Efficacy of Mobile Application in Congenital Cardiac Embryology Education

Stacey Skoretz (University of British Columbia)

Using High-fidelity Human Patient Simulation to Teach Functional Aerodigestive Tract Anatomy And Bridge Clinical Skills: Student Perceptions of Clinical Preparedness

Carrie Elzie (Eastern Virginia Medical School)

Development of a Cinematographic Life Story of Anatomical Donor to Generate Student Appreciation and Responsibility

Tuesday, April 5, 4:45 pm – 6:00 pm

Henry Gray Scientific Award Lecture

Henry Gray Distinguished Educator Award Lecture

A.J. Ladman Exemplary Service Award Lecture