



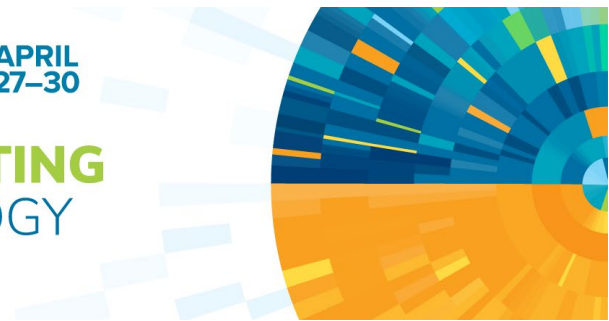
AMERICAN
ASSOCIATION FOR
ANATOMY



2021 APRIL
27-30

VIRTUAL ANNUAL MEETING AT EXPERIMENTAL BIOLOGY

Anatomy.org/EB2021



Track Theme

B	Bones/Muscle/Connective Tissue
C	Cardiovascular
CB	Cell Biology
DB	Developmental Biology/Morphology
ED	Education & Teaching
EV	Evolution/Anthropology
I	Imaging
N	Neuroscience
PD	Career and Professional Development
RM	Regenerative Medicine (Stem Cells, Tissue Regeneration)
V	Vertebrate Paleontology

All sessions are scheduled eastern time (EDT)

ON-DEMAND

Career Central On-Demand Short Talks

Co-sponsored by AAA's Professional Development Committee

These on demand talks can be seen at anytime.

Establishing Yourself as a Science Educator

Darren Hoffman (University of Iowa Carver College of Medicine)

In this presentation, you'll learn strategies for launching a career in science teaching. We'll explore key elements of the CV that will stand out in your job search, ways to acquire teaching experience when opportunities in your department are scarce, and how to develop your personal identity as a teacher.

Negotiate like a Pro

Carrie Elzie (Eastern Virginia Medical School)

Creating a conducive work environment requires successful negotiation at many levels, with different individuals and unique situations. Thus, negotiation skills are important, not only for salaries, but many other aspects of a career including schedules, resources, and opportunities. In this session, you will learn some brief tips of how to negotiate like a professional including what to do and more importantly, what not to do.

#SocialMedia: Personal Branding & Professionalism

Mikaela Stiver (University of Toronto)

Long gone are the days when social media platforms were just for socializing! Whether you use social media regularly in your professional life or are just getting started, this microlearning talk has something for everyone. We will cover the fundamentals of personal branding, explore a few examples on social media, and discuss the importance of professionalism with an emphasis on anatomical sciences.

TUESDAY, APRIL 27, 2021

10:00 am – 11:30 am EDT

Craniofacial Platform Session - Human Diseases through the Lens of Development

Chair: David Clouthier (University of Colorado)

Michelle Klausner (University of Western Ontario)

Langman Graduate Student Platform Presentation Award Finalist

Interleukin-15 Regulates Decidual Osteopontin Expression in Rats

Heather Richbourg (University of California, San Francisco)

Mapping the Multi-Modal Distribution of Craniofacial Phenotypes in NOSIP Mutants

Carrie Leonard (University of Maryland College Park)

Disrupted Trigeminal Ganglion Development in a Mouse Model of Familial Dysautonomia

Andre Tavares (The George Washington University)

Sobp is a novel Six1 co-factor during inner ear development

Sydney Greer (University of Nebraska Medical Center)

Cell Division and Rearrangement Dynamics Coordinated by Planar Cell Polarity Pathway in Growth Plate Cartilage

Nicole Weaver (University of Notre Dame)

gldc is essential for embryonic development and kidney organogenesis

10:00 am – 11:30 am EDT

CB DB RM

Orchestrating a 3D Symphony of Stem Cells for Regeneration

Chair: A.J. Mellott (University of Kansas Medical Center)

Arghya Paul (University of Western Ontario)

Exploiting Cell-Instructive Nanocomposites for Tissue Engineering, Bio-printing and Therapeutics Applications

Ali Khademhosseini (Terasaki Institute)

Emerging Organ Models and Organ Printing for Regenerative Medicine

Chris Highley (University of Virginia)

Three-dimensional Bioprinting Cells, Materials, and Vascular Spaces within Hydrogel Materials to Construct Tissues and Influence Cell Behaviors

10:00 am – 11:30 am EDT

PD

So You Want to Get Published? Writing the Manuscript, Navigating the Peer Review Process & Playing Nice with Reviewers

Chairs: Eustathia Lela Giannaris (University of Massachusetts Medical School) & **Kem Rogers** (University of Western Ontario)

Tina Tootle (University of Iowa)

Writing and Submitting Your First Peer-reviewed Publication

Timothy Smith (Slippery Rock University)

"The Reviewers Find...." Understanding the Peer Review Process and Editorial Communications

Heather Smith (Midwestern University)

Navigating Challenging or Complicated Reviews

10:00 am – 11:30 am EDT

ED

Spatial Abilities, Haptics and Anatomy Learning: Unseen and Untouched Consequences of COVID-19 Co-sponsored by Anatomical Sciences Education

Chairs: Tim Wilson (University of Western Ontario) & **Jean Langlois** (Centre hospitalier universitaire de Sherbrooke)

Katja Bogomolova (Leiden University)

Altered Spatial Abilities in Augmented and Virtual Realities

David Uttal (Northwestern University)

Spatial Ability and Learning: Implications for Anatomy Education

Jean Langlois (Centre hospitalier universitaire de Sherbrooke)

Spatial Abilities, Haptic Perception, Anatomy Knowledge and Technical Skills Performance in Health Care

11:45 am – 12:15 pm EDT

Chat Lounge - Ask the Editor of the Developmental Dynamics Journal

Paul Trainor (Stowers Institute for Medical Research)

Sponsored by Wiley

Have a question about publishing or AAA's journals? Come and chat informally with Paul A. Trainor, PhD, Editor-in-Chief of Developmental Dynamics.

This small group discussion will take place in a video chat room. You can ask your questions but also hear what others are asking.

12:30 pm – 2:00 pm EDT

CB B

The Mighty Tendon: Beyond Moving Skeleton

Chair: Yan Jing (Texas A&M College of Dentistry)

Ronen Schweitzer (Shriners Hospital for Children & Oregon Health & Science University)

Tendon and Ligament Development

Sarah Calve (University of Colorado Boulder)

Linking Tendon Development with the Extracellular Matrix

Jian Feng (Texas A&M College of Dentistry)

Direct Cell Transdifferentiation from Tendon to Bone in Skeletal Growth and Repair

12:30 pm – 2:00 pm EDT

CB I

Microscopy in 2021: High-Resolution Imaging of Cells and Tissues

Chairs: Micah Schott (Mayo Clinic) & **Bryon Grove** (University of North Dakota School of Medicine & Health Sciences)

Jin Zhang (University of California, San Diego)

Illuminating the Biochemical Activity Architecture of the Cell

Victoria Bautch (The University of North Carolina at Chapel Hill)

The Incredible Lives of Vascular Endothelial Cells – A Live Imaging Perspective

Uri Manor (Salk Institute for Biological Studies)

Deep Learning-Based Point-Scanning Super-Resolution Imaging

12:30 pm – 2:00 pm EDT

CB DB B

Neonatal Chronic Lung Disease: From Bed to Bench and Back to the Bed

Co-sponsored by The Anatomical Record

Chair: Kurt Albertine (University of Utah School of Medicine)

Parviz Minoo (LAC+USC Medical Center)

A Transient Niche Signaling Hub Maintains Self-renewal of Progenitor AT2 Cells during Alveologenesis; Implications for BPD

Krithika Lingappan (Texas Children's Hospital, Baylor College of Medicine)

Sex as a Biological Variable Plays a Crucial Role in the Neonatal Lung: Implications for Bronchopulmonary Dysplasia

Stella Kourembanas (Harvard Medical School, Boston Children's Hospital)

Cell-based Approaches to Treat BPD: Systemic Therapy for a Systemic Disorder

12:30 pm – 2:00 pm EDT

ED

Retrieval, Reflection and Integration: Keys to Enhance Recall and Transfer of Knowledge in Physiology and the Anatomical Disciplines

Co-sponsored by the American Physiological Society (APS)

Chairs: Rosalyn Jurjus (American University of Beirut & The George Washington University) & **John Dobson** (Georgia Southern University)

John Dobson (Georgia Southern University)

Retrieval Enhances Higher and Lower Order Thinking in Anatomy and Physiology Students

Rajunor Ettarh (California University of Science and Medicine)

Retrieval and Integration: Making Histology Physiological

Lisa Carney Anderson (University of Minnesota)

Incorporating Retrieval into Classroom Activities: Setting Good Habits

1:00 pm – 2:00 pm EDT

2021 Tang Prize Award Lecture

Tony Hunter (Salk Institute for Biological Studies)

Tyrosine Phosphorylation — From Discovery to Drug Development and Beyond

2:00 pm – 2:30 pm EDT

Chat Lounge - Maintaining Mental Health During a Pandemic: Effective Coping Mechanisms & Work-Life Balance Suggestions

Marc Spencer (George Washington University)

Co-sponsored by AAA's Ambassador Committee

A free-flowing discussion on what others have done during the pandemic to help them cope with, e.g., maintaining work-life balance, stress due to remote work. All are welcome to share effective (and not-so-effective) strategies they have learned.

This small group discussion will take place in a video chat room. You can ask your questions but also hear what others are asking.

2:00 pm – 2:30 pm EDT

Chat Lounge - Ask the Editor of The Anatomical Record Journal

Heather F. Smith (Midwestern University)

Sponsored by Wiley

Have a question about publishing or AAA's journals? Come and chat informally with Heather F. Smith, Ph.D, Editor-in-Chief of The Anatomical Record.

This small group discussion will take place in a video chat room. You can ask your questions but also hear what others are asking.

2:30 pm – 4:00 pm EDT

CB DB RM

How Do Wounds Heal? From Mechanism to the Clinic

Chair: Lucie Germain (Laval University Tissue Engineering Centre)

Philipp Niethammer (Memorial Sloan Kettering Cancer Center)

Early Signals in Wound Healing

Marjana Tomic-Canic (University of Miami Miller School of Medicine)

The Anatomy of Cutaneous Wound Healing and Its Inhibition: From Mechanisms to Therapy

Lucie Germain (Laval University Tissue Engineering Centre)

Therapeutic Strategies for Full-Thickness Wounds: Skin and Corneal Tissue-Engineered Substitutes with Stem Cells

2:30 pm – 4:00 pm EDT

DB B

The Cell Biology and Genetics of Craniofacial Development

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

Chair: Sally Moody (George Washington University)

Erica Hutchins (California Institute of Technology)

Post-transcriptional Mechanisms Control Cranial Neural Crest Development

Stanley Michi Kanai (University of Colorado Anschutz Medical Campus)

Investigating the Disease Mechanism of Auriculo-condylar Syndrome Type 2

Sarah Curtis (Emory University)

Investigating the Genetic Heterogeneity of Orofacial Cleft Phenotypes

2:30 pm – 4:00 pm EDT

DB EV

Catching the Waves: The Sensory Anatomy of Cetaceans

Chair: Joy Reidenberg (Icahn School of Medicine at Mount Sinai)

Joy Reidenberg (Icahn School of Medicine at Mount Sinai)

The Diverse Sensory Specializations of Cetacea

Jeffrey Laitman (Icahn School of Medicine at Mount Sinai)

Sensing with Sound

Jason Mulsow (National Marine Mammal Foundation)

The Anatomy, Bioacoustics, and Neural Physiology of Dolphin Biosonar

2:30 pm – 4:00 pm EDT

ED

Education Platform Session #1

Chair: Theodore Smith (Touro University - California)

Jessica Byram (Indiana University School of Medicine)

Development and Validation of a Peer Evaluation Tool for Team-Based Learning

Haviva Goldman (Drexel University College of Medicine)

Shifts in Digital Resources Usage for Gross Anatomy Education During Covid-19

Hannah Herriott (Indiana University School of Medicine)

Educational Research Platform Presentation Award Finalist

Identification of Potentially Inhibitory Interprofessional Power Dynamics Among Healthcare Students

Charles Coker (Kansas City University College of Osteopathic Medicine)

Educational Research Platform Presentation Award Finalist

A head above the rest: use of prosected specimens increases practical exam performance for Head and Neck anatomy

Andrew Hull (University of Colorado Anschutz Medical Campus)

Embryorigami: The Educational Impact of 4D Virtual Folding Embryo Model on Student Learning and Confidence

Christina Cline (Northern Illinois University)

Value for Learning Communication Skills in Undergraduate Students

4:15 pm – 5:45 pm EDT

Keynote Speakers

Steven J. Schiff

Penn State University

Human Brain Growth: Avoiding the Mismeasure of Man

Peter Agre

Johns Hopkins University

Aquaporin Water Channels – from Atomic Structure to Malaria

6:00 pm – 7:00 pm EDT

#AnatChat: “I Remember Back in the Day...” - AAA Conferencing Through the Ages (In Person vs Now) (Twitter Event)

Co-sponsored by AAA's Ambassador Committee

Lead by Carissa Vinovskis, University of Colorado – Anschutz Medical Campus

In this current time of COVID-19 and virtual conferencing, AAA looks much different than it has in previous years. While we're missing out on traveling to exotic places and seeing colleagues, the virtual meeting does give us the ability to wear comfy shoes and watch sessions with pets. Join us for a 1 hour Anat Chat while we share this year's virtual conference set ups and furry friends, reminisce about the good old days, post pictures of our favorite meeting locales and conference buddies, and share our best poster selfies from years past using the hashtag #AnatChat on twitter.

<https://twitter.com/AnatomyOrg>

6:30 pm – 7:30 pm EDT

Black in Anatomy Virtual Social

Come and meet the Black in Anatomy Team! We welcome interested members and allies as we introduce ourselves, play some anatomy focused games, and socialize within our shared community of anatomists. Please visit our website: blackinanatomy.com

WEDNESDAY, APRIL 28, 2021

10:00 am – 11:30 am EDT

DB EV

The Fuel that Allows Common People to Attain Uncommon Results: Collaboration in Science (Hybrid Symposium)

Chair: Joan Richtsmeier (Pennsylvania State University)

Azeez Butali (The University of Iowa)

Addressing Craniofacial Anomalies through International Collaborations and Capacity Building

Matthew Harris (Harvard Medical School)

Integrated Analysis of Bioelectric Signaling in Regulation of Proportion

Tina Lasisi (Pennsylvania State University)

Hair Fiber Morphology and Function: At the Intersection of Anthropology, Physiology, and Engineering

Neus Martínez-Abadías (University of Barcelona)

Understanding Brain/Face Integration from Neuropsychiatric Disorders

10:00 am – 11:30 am EDT

C CB DB RM

New Frontiers in Induced Pluripotent Stem Cells (iPSCs) and Biomaterials Based Regenerative Medicine

Chair: Rajasingh Johnson (University of Tennessee Health Science Center)

Jia-Qiang He (College of Veterinary Medicine, Virginia Polytechnic Institute and State University)

Therapeutic Potential of iPSCs for Different Diseases

Sanjiv Dhingra (St. Boniface Hospital Albrecthsen Research Centre; University of Manitoba)

Fate of Transplanted Stem Cells and Host Immune Response Against Implanted Cells

Sara Vasconcelos (Toronto General Hospital-University of Toronto)

Cardiac Revascularization Post Myocardial Infarction Enhances Remuscularization and Improves Function

10:00 am – 11:30 am EDT

C CB DB N

The Hypothalamus – Form and Functions

EB Cross Society Symposium

Chair: Martine Dunnwald (The University of Iowa)

Clemens Kiecker (King's College London)

Genetic and Tissue Interactions in the Embryogenesis of the Diencephalon and Circumventricular Organs **Eric**

Lazartigues (LSU Health Center)

Hypothalamic Regulation of Blood Pressure

Eric Krause (University of Florida)

Neuroanatomical Characterization of Angiotensin-sensitive Neurons Within the Paraventricular Nucleus of the Hypothalamus Reveals an Access Point for Controlling Behavioral and Physiological Responses to Stress

10:00 am – 11:30 am EDT

ED

Education Platform Session #2

Chair: Kelly Harrell (Virginia Commonwealth University)

Philip Fabrizio (Philadelphia College of Osteopathic Medicine Georgia)

Do Motivation and Race/Ethnicity Impact Success in an Anatomy Course for Doctor of Physical Therapy Students?

Varna Taranikanti (Oakland University William Beaumont School of Medicine)

Anatomy of Corona Mortis: A High Risk Yet Rare Lesson for Medical Students

Jason Organ (Indiana University School of Medicine)

AAA Science Communication Bootcamp: empowering members with effective communication strategies

Da'Quan Craven (Indiana University)

Exploring Metacognition in Graduate Histology Students

Angelique Dueñas (Hull York Medical School)

“There's no way that I'm going to rock up to a pub now with a pig heart”: Anatomy Outreach During COVID-19

Marissa Hight (University of Colorado Anschutz Medical Campus)

Change of Heart: Virtual Embryonic 3D Heart Model with Interchangeable Conotruncal Septa Promotes Clinically Oriented Learning

11:30 am – 12:30 pm EDT

Chat Lounges

Co-sponsored by AAA's Professional Development Committee

These small group discussion will take place in a video chat room. You can ask your questions but also hear what others are asking.

7 Habits of Highly Effective Students: A Conversation

Mikaela Stiver (University of Toronto) & **Aidan Ruth** (Saint Louis University)

Join your fellow graduate students (and a few professors, too) to discuss strategies for successful completion of your graduate degree. This flexible chat will include discussion on how to cultivate good writing habits, time management strategies, and tips on managing your professional identity.

Make the Most of Your First Five Years as Faculty

Laura Johnson (University of Missouri - Columbia) & **Alexandra Wink** (University of Massachusetts Medical School)

Early-career faculty members will hear and discuss strategies for success in the first five years of their faculty position. It will include advice on finding your bearings in your first year and help you develop your professional identity as you head towards your first promotion.

What's Next?: Dialogue for Full Professors

Rebecca Pratt (Oakland University William Beaumont School of Medicine) & **H. Wayne Lambert** (West Virginia University)

Conversations in AAA continue for those faculty members promoted to the top of P&T. Join us for dialog and discussions on future directions for full professors, improving scholarly output, increasing academic collaborations, and discovering new roles at your institution as a professor. Your AAA colleagues are here to listen and offer advice!

1:00 pm – 2:30 pm EDT

Plenary Speakers

Fiona Watt

King's College London

Exploring Cellular Heterogeneity of Human Skin

Introduction by Martine Dunnwald (University of Iowa)

Cheng-Ming Chuong

Eco-Evo-Devo: A Feather Paradigm
Introduction by Ralph Marcucio (UCSF)

2:00 pm – 2:30 pm EDT

Chat Lounge - Anat Chat Reconnect

Andrew Cale (Indiana University-Purdue University)

Co-sponsored by AAA's Ambassador Committee

Discussion with participants of the Anat Chat Twitter exchanges to discuss what worked well and how to make improvements for future Anat Chat events.

This small group discussion will take place in a video chat room. You can ask your questions but also hear what others are asking.

3:00 pm – 4:30 pm EDT

EV

Morphological Sciences Award Hybrid Symposium

W.M. Cobb Award in Morphological Sciences Lecture featuring 2020 Early-Career Investigator Award Recipient, Kevin Weiner

Chair: Katherine Willmore (University of Western Ontario)

Kevin Weiner (University of California, Berkeley)

Tertiary Sulci, Transcriptomics, and Functional Gradients in Human Cortex

Laura Austin (University of Guelph)

Spontaneous neuronal regeneration following lesioning in the brain of the leopard gecko (*Eublepharis macularius*)

Kyle Moehlin (Pacific Northwest University of Health Sciences)

Langman Graduate Student Platform Presentation Award Finalist

A Novel Formula for Estimating Liver Volume in Elderly Subjects: A Cadaveric study

Nicole Sandoval (Loma Linda University)

The Role of the SOX11 Transcription Factor in Regulating Growth Differentiation Factor-5 During Joint Formation

Safdar Jawaid (Rainbow Babies and Children's Hospital)

Prenatal alcohol exposure causes structural and functional cardiac defects, which can be prevented with folate supplementation

3:00 pm – 4:30 pm EDT

PD

Allyship to Foster Inclusion in Science and Health

Co-sponsored by AAA's Diversity, Equity, and Inclusion Committee

Chair: Loydie Jerome-Majewska (McGill University)

Erin A. Cech (University of Michigan)

Cultural Mechanisms that Maintains Exclusion

Andrew G. Campbell (Brown University)

Maximizing Student Development in Brown's Division of Biology and Medicine

Gloria Krahn (Oregon State University)

Global and Local Inclusion of Persons with Disabilities: Data, Barriers and Strategies

3:00 pm – 4:30 pm EDT

C CB DB RM

Building Human Blood Vessels

Co-sponsored by the International Society for Applied Cardiovascular Biology (ISACB)

Chair: Nicolas L'Heureux (University of Bordeaux, INSERM)

Christopher Breuer (Ohio State University)

Tissue Engineered Vascular Grafts for use in Congenital Heart Surgery

Nicolas L'Heureux (University of Bordeaux, INSERM)

Cell-assembled Extracellular Matrix as a Biomaterial for Building Vascular Grafts

Robert Tranquillo (University of Minnesota)

Acellular Vascular Grafts from Fibroblast-remodeled Fibrin that Grow and Self-repair

3:00 pm – 4:30 pm EDT

ED

Master Class on Real Cardiac Anatomy and Embryology (Hybrid Symposium)

Chairs: Keely Cassidy (University of Nebraska Medical Center) & **David Bolender** (Medical College of Wisconsin)

Diane Spicer (Johns Hopkins All Children's Hospital, Heart Institute)

Knowing Real Cardiac Anatomy Enhances Understanding of Virtual Anatomy

Shumpei Mori (University of California, Los Angeles)

Appropriate Cardiac Anatomy

Mark Nielsen (University of Utah)

Morphogenesis of the Embryonic Heart Tube

David Bolender (Medical College of Wisconsin)

Knowing Real Cardiac Anatomy Enhances Understanding of Cardiac Development

Keely Cassidy (University of Nebraska Medical Center)

Congenital Heart Defects in the Context of Typical Development and Circulation

5:00 pm – 6:30 pm EDT

B CB DB RM

Control of Shape and of Size during Limb Skeletal Development and Repair

Co-sponsored by Developmental Dynamics

Chair: Marian Ros (Institute of Biomedicine and Biotechnology of Cantabria)

Kim Cooper (University of California, San Diego)

Transcriptional Differences that Uncouple the Evolution of Vertebrate Forelimb and Hindlimb Skeletal Proportion

Rosa Serra (University of Alabama Birmingham)

Effects of Loading on Growth Plate Biology

Deneen M. Wellik (University of Madison-Wisconsin)

Hox Gene Expression Defines Skeletal Stem Cells

5:00 pm – 6:30 pm EDT

B C CB DB N RM

Receptor Autoimmunity in Clinical Disease: Role of Inflammation and Tissue Injury

Chair: Mark Zimering (Veterans Affairs New Jersey Healthcare System)

William T. Gunning III (University of Toledo College of Medicine and Life Sciences)

Innate Immunity and Adrenergic Receptor Autoantibodies in a Chronic, Multi-system Disorder

Babette LaMarca (University of Mississippi Medical Center)

Inflammation and Autoantibodies Produced during Preeclampsia; Paving New Therapeutics for an Old Disease

Mark Zimering (Veterans Affairs New Jersey Healthcare System)

Serotonin 2A Receptor Autoantibodies, and Inflammation in Neurodegeneration following Traumatic Brain Injury

5:00 pm – 6:30 pm EDT

Biological Anthropology Platform Session

Chair: Margaret Hall (Midwestern University)

Brittany Kenyon-Flatt (North Carolina State University)

Postdoctoral Platform Presentation Award Finalist

The impediment of sex on taxonomy: A case study in macaque monkeys

Deanna Goldstein (The Johns Hopkins University School of Medicine)

Carpal Shape Variation Between Pan and Gorilla Mirrors That of Other Mammals With Similar Body Size

Differences

Alejandro Santiago Nazario (Universidad Central del Caribe)

Integration between the bony nasopharynx and the cervical vertebrae in Homo and Pan

Faye McGeachie (University of Missouri)

Functional Myology

of the Neck in Primates

Magaji Taura (University of Bisha)

Predictability And Validity Of External Ear Anthropometry In Sex Inference Among Hausa Population Of Nigeria
M. Catherine Bandak (West Virginia University School of Medicine)
An Anatomical Study of Skin Entry Locations in Percutaneous Foramen Ovale Cannulation

5:00 pm – 6:30 pm EDT

ED

Virtual Anatomy: How It's Made

Chairs: **Darren Hoffmann** (University of Iowa Carver College of Medicine) & **Alan Detton** (Columbia University Medical Center)

Darren Hoffmann (University of Iowa Carver College of Medicine)

Creating Virtual Anatomy and Making it More Human

Jennifer McBride (Cleveland Clinic Lerner College of Medicine)

The Reality of Incorporating Extended Reality into Anatomical Education

Alan Detton (Columbia University Medical Center)

The Cons from a Pro: How Creating Digital Content Differs in Industry and Academia

THURSDAY, APRIL 29, 2021

10:00 am – 11:30 am EDT

CB

Cell Biology Award Hybrid Symposium

R.R. Bensley Award in Cell Biology Lecture featuring 2021 Early-Career Investigator Award Recipient, Pulin Li

Chair: Matthew Vickaryous (University of Guelph)

Pulin Li (Whitehead Institute)

Spatial Control of Cell-Cell Communication: from Genes to Circuits

Nurul Jannah Nasir (Duke-NUS Medical School)

Langman Graduate Student Platform Presentation Award Finalist

The panniculus carnosus layer exhibits poor regeneration and deformed geometry following pressure injury: Implications for biomechanical protection

Breanne Gibson (Vanderbilt University)

Langman Graduate Student Platform Presentation Award Finalist

Inhibition of early plasmin activation following thermal injury attenuates systemic inflammatory markers and inflammation within injured muscle

Nirosha Murugan (Algoma University)

Brief multi-drug treatment via a wearable silk-hydrogel bioreactor induces long-term limb re-patterning and regeneration in adult *Xenopus laevis*

Steven Newby (University of Tennessee)

Biocompatibility and Osseointegration of a Novel 3D Printed Poly(lactic-co-glycolic acid) Graphene-based Nanoscaffold in a Rat Femoral Critical Sized Segmental Defect

10:00 am – 11:30 am EDT

CB DB B

50 Years of Positional Information in Development, Disease and Regeneration

Co-sponsored by Developmental Dynamics

Chair: David Umulis (Purdue University)

Dagmar Iber (ETH Zurich)

Mechanisms of Branching Morphogenesis

Vidhya Munnamalai (The Jackson Laboratory)

Making Sense from Incoherence: How the Wnt Pathway Segregates Domains in the Cochlea through an Incoherent Feedforward Circuit

Gregory Reeves (Texas A&M University)

Spatiotemporal Control of Gene Expression Boundaries Using a Feedforward Loop

10:00 am – 11:30 am EDT

DB B

How does Exercise and Disease Influence Bone Phenotype and Morphology? (Hybrid Symposium)

Chair: Habiba Chirchir (Marshall University)

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

High-fat Diet Alters Growth Plate Morphology and Bone Phenotype before the Onset of Obesity in Juvenile Mice

Amanda Smolinsky (Roanoke College)

Exercise and the Growing Skeleton: Load Type Differentially Influences Hind Limb Skeletal Morphology and Bone Growth in Outbred Mice

Elsa Van Ankum (University of Saskatchewan)

A Mouse Model Suggests How an Industrialized Diet Alters Jaw Form

Haley Horbaly (University of Tennessee, Knoxville)

Covariation Within and Among Joint Articular Surfaces of the Upper and Lower Limb

10:00 am – 11:30 am EDT

ED

Education Platform Session #3

Chair: Gary Farkas (University of Miami Miller School of Medicine)

Danielle Brewer-Deluce (Western University)

A Bigger Q - Evaluating the impact of pandemic-related course changes on students' learning experiences

Kimberly Latacha (University of Nebraska Medical Center)

Benefit of Pre-Matriculation Anatomy Courses on Medical Student Performance in an Integrated Curriculum

Megan Fagalde (Indiana University)

Educational Research Platform Presentation Award Finalist

A Method to Determine Baseline Anatomy Knowledge Among Matriculating Professional Allied Health Students

Hailey Bunker (University of Colorado Anschutz Medical Campus)

Educational Research Platform Presentation Award Finalist

What the head and neck? A study of integrated gross anatomy with embryology and its effect on learning and retention.

Kyle Robertson (Indiana University School of Medicine)

"First Patient": Reflections of Pathology and the Donor-Dissection Experience

Moirá Sullivan (Medical College of Georgia at Augusta University)

Comparison of Feedback and Small Group Dynamics During In-person and Online Gross Anatomy Courses

11:30 am – 12:30 pm EDT

Chat Lounges

Co-sponsored by AAA's Professional Development Committee

These small group discussion will take place in a video chat room. You can ask your questions but also hear what others are asking.

At the Helm: Course Directorship

Aidan Ruth (Saint Louis University) & **Rebecca Pratt** (Oakland University William Beaumont School of Medicine)

Join your colleagues for a discussion centered on course directorship. It will include discussion of project management tools and organizational aides, dealing with logistical challenges, and strategies for successfully co-directing a course with clinicians and other faculty.

Moving Up! Tips for the Promotion Process

Eustathia Lela Giannaris (University of Massachusetts Medical School)

We will discuss tips to help you move up the academic ladder from Assistant to Associate Professor. Join us for advice on various aspects of the promotion process, such as crafting your narrative statement and selecting referees. Feel free to bring questions and share your own tips as well

Non-Traditional Students: How to Mentor One, or How to Be One

J. Bradley Barger (University of Alabama at Birmingham) & **Ellen Robertson** (University of Mississippi Medical Center)

We will talk about the unique qualities of "non-traditional" students and what types of support they may need to succeed. We will also address how more students may be "non-traditional" than you think!

12:30 pm – 2:00 pm EDT

Imaging Platform Session

Chair: Paul Kulesa (Stowers Institute for Medical Research)

Adam Hartstone-Rose (North Carolina State University)

Using DiceCT to evaluate the functional correlates of masticatory muscle architecture

Rebecca Green (University of Pittsburgh)

Integration of Cellular Dynamics and Morphology to Understand Mouse Facial Development

Maria Rovira (Universitat de Barcelona)

Assessing Gene Expression Patterns in Mouse Models to Test Hypotheses About Human Head Evolution

Teng Teng (University of California, San Francisco)

Cellular mechanisms and developmental compensation during tissue fusion in the secondary palate

Akinobu Watanabe (New York Institute of Technology College of Osteopathic Medicine)

Polish Crested Chickens: A Promising New Model System with Bizarrely Shaped Brain and Skull

Ethan Snow (University of Nebraska Medical Center)

The Extensor Pollicis et Indicis Accessorius Muscle: Cadaveric Case Analysis and Pertinence to Occupational Therapy

12:30 pm – 2:00 pm EDT

CB DB C

Regulating Organ Size in Development and Regeneration

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

Licia Selleri (University of California, San Francisco)

Regulatory Dynamics of Midfacial Growth in Evolution and Disease

Jim Martin (Baylor College of Medicine)

Hippo Signaling in Organ Size Control and Heart Regeneration

Iswar Hariharan (University of California, Berkeley)

Genetic and Single-cell Transcriptomic Analysis of Growth and Regeneration in *Drosophila*

12:30 pm – 2:00 pm EDT

CB DB EV RM

Central Nervous System Regeneration: A Comparative View

Chairs: Emily Gilbert (University of Toronto) & **Samantha Payne** (Tufts University)

Jennifer Morgan (Marine Biological Laboratory)

Lessons from the Lamprey on Spinal Cord Regeneration

James Monaghan (Northeastern University)

The Cellular and Molecular Basis of CNS Regeneration in the Axolotl Salamander

Samantha Payne (Tufts University)

Investigating the Impact of Cell Maturity on Transplantation Success for CNS Injury

12:30 pm – 2:00 pm EDT

ED

Teaching in Large Anatomy Groups – Breaking it Down

Co-sponsored by la Sociedad Mexicana de Anatomía (the Mexican Society of Anatomy)

Chair: Richard Drake (Cleveland Clinic Lerner College of Medicine)

Rodrigo Enrique Elizondo-Omaña (Universidad Autónoma de Nuevo Leon)

Large Anatomy Groups – Breaking them Down Effectively

Alejandro Quiroga-Garza (Universidad Autónoma de Nuevo Leon)

Payment with Knowledge to Create Qualified Near-peers in Anatomy

Yolanda Salinas-Alvarez (Universidad Autónoma de Nuevo Leon)
Importance of Student Involvement in Anatomical Sciences Research

2:00 am – 2:30 pm EDT

Chat Lounge - Fostering Diversity & Inclusion

Angelique Duenas (Hull York Medical School)

Co-sponsored by AAA's Diversity, Equity, & Inclusion Committee

Continuing conversations from the previous day session on **Allyship to Foster Inclusion in Science and Health**, this discussion is designed to discuss ways to foster diversity and inclusion.

This small group discussion will take place in a video chat room. You can ask your questions but also hear what others are asking.

2:30 pm – 4:00 pm EDT

PD

It Takes Two to Tango: Creating Successful Trainee-Advisor Mentoring Relationships

Chair: Kate Lesciotta (Sam Houston State University - College of Osteopathic Medicine)

Cara Lewis (Boston University)

Pre-Tenure Predicament: Balancing Your Students' Needs and Your Own

Amberly Reynolds (Sam Houston State University - College of Osteopathic Medicine)

Increasing Awareness in Mentoring Relationships: Moving from Graduate Student to Mentor

Niroop Kaza (University of Alabama, Birmingham)

An International Student/Trainee's Perspective on the Mentee-Mentor Relationship

2:30 pm – 4:00 pm EDT

Functional Morphology Platform Session

Chair: Tamara Franz-Odenaal (Mount Saint Vincent University)

Marieke Sorge (Arizona State University)

Functional Specialization and Arm Length in Octopus bimaculoides

Bruce Young (Kirksville College of Osteopathic Medicine)

Functional morphology of the Crocodylian Diaphragm

Joaquin Henriquez (University of British Columbia)

Tooth Removal in the Leopard Gecko and the de Novo Formation of Replacement Teeth

Samuel Levy (Midwestern University)

Sexual Dimorphism and Adaptations in the Forelimb of the Snow Leopard (*Panthera uncia*)

Nicole Ackermans (Icahn School of Medicine at Mount Sinai)

Does Headbutting Cause Traumatic Brain Injury? The Case of Combative Bovids

Samuel Goldman (Philadelphia College of Osteopathic Medicine)

Morphological Changes in Calcanei of Mice with Hoxa11 and Hoxd11 loss-of-function mutations

2:30 pm – 4:00 pm EDT

N

Neurobiology Award Hybrid Symposium

C.J. Herrick Award in Neuroanatomy Lecture featuring 2021 Early-Career Investigator Award Recipient, Andrea Gomez and 2020 Early-Career Investigator Award Recipient, Sergiu Pasca

Chair: Xiangmin Xu (University of California – Irvine)

Andrea Gomez (University of California, Berkeley)

Alternative Splicing Choices for Synaptic Function

Sergiu Pasca (Stanford University)

Assembling Three-Dimensional Models of the Human Brain to Study Development and Disease

Christine Charvet (Delaware State University)

Tracing the evolution of cortical circuits in humans from ultra-high resolution connectomic, transcriptomic, and temporal dimensions

Mohamed El-Sherbiny (Almaarefa University)

Postdoctoral Platform Presentation Award Finalist

Phenethyl isothiocyanate alleviates renal injury in STZ-induced diabetic rats: Effect on oxidative stress, glycativ stress and inflammation

2:30 pm – 4:00 pm EDT

ED

More than Body Parts: Incorporating Bioethics and Professionalism into Anatomy Education

Chairs: Thomas Champney (University of Miami) & **Sabine Hildebrandt** (Boston Children's Hospital, Harvard Medical School)

Sabine Hildebrandt (Boston Children's Hospital, Harvard Medical School)

Anatomy as a Model for Integrating History and Ethics in Medical Education

Jon Cornwall (Otago Medical School)

Pedagogy, Bioethics, and Professional Development: The important Role of Anatomy Education in the Foundational Years of Health Science Programs

Thomas Champney (University of Miami)

In situ Integration of Ethical and Professional Concepts in Anatomy Education

An additional goal of the symposium is to discuss ethical questions and quandaries from the AAA membership. With that in mind, please submit any ethical questions you may have to Tom Champney (tchampney@med.miami.edu) prior to the symposium and he will have them available for discussion in the extended Q&A session of the symposium. If you would prefer to remain anonymous, please let him know and he will remove all identifying information.

AAA Distinguished Award Lectures – featuring the 2021 Gray Scientific, Gray Educator and Ladman Award Winners

Chair: Valerie DeLeon (University of Florida)

4:15 pm – 4:45 pm EDT

Henry Gray Scientific Award Lecture

Introduction by Martine Dunnwald (University of Iowa)

A. Wayne Vogl (University of British Columbia)

Interactions between Junctions and the Cytoskeleton Generate Morphogenic Events in the Seminiferous Epithelium

4:45 pm – 5:15 pm EDT

Henry Gray Distinguished Educator Award Lecture

Introduction by Dale Abrahamson (University of Kansas Medical Center)

Robert M. Klein (University of Kansas Medical Center)

From Tank and Microscope to the Matrix

5:15 pm – 5:30 pm EDT

A.J. Ladman Exemplary Service Award Lecture

Introduction by Kathy Svoboda (Texas A&M University College of Dentistry)

Lynne A. Opperman (Texas A&M University College of Dentistry)

A Journey to Becoming a Ladman Awardee

6:00 pm – 7:00 pm EDT

AAA Fellows Virtual Social

All AAA Fellows are invited to attend and welcome the new class of 2021 Fellows.

6:30 pm – 7:30 pm EDT

#AnatChat: Anatomy in the Media (Twitter Event)

Co-sponsored by AAA's Ambassador Committee

Lead by Brittany Kenyon Flatt, North Carolina State University

Join us for #AnatChat: Anatomy in the Media! We'll be tweeting about some of our favorite anatomy moments from popular television shows and movies, like Dexter, Ozark, and Bones. Participate in polls to identify wrongly sided or otherwise misidentified bones, or tweet about your favorite anatomy blunder from a movie, television show, or other media using the hashtag #AnatChat on Twitter.

<https://twitter.com/AnatomyOrg>

FRIDAY, APRIL 30, 2021

10:00 am – 11:30 am EDT

DB

Developmental Biology Award Hybrid Symposium

H.W. Mossman Award in Developmental Biology Lecture featuring 2021 Early-Career Investigator Award Recipient, Eric Van Otterloo and 2020 Early-Career Investigator Award Recipient, Mayssa Mokalled

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

Eric Van Otterloo (University of Iowa)

From Head to Trunk: Studying Neural Crest Cell Development in Memo1 and Tfap2 Mutants

Mayssa Mokalled (Washington University in St. Louis)

Zebrafish-inspired Strategies for Spinal Cord Repair

M. Kathleen Pitirri (Pennsylvania State University)

Postdoctoral Platform Presentation Award Finalist

Differentiation of osteoblast lineage cells that form dermal bones and sutures of the anterior cranial vault in development and disease

Hayley Fisher (University of Pittsburgh)

Postdoctoral Platform Presentation Award Finalist

Neural Compensation in a novel operant devaluation task in rats

10:00 am – 11:30 am EDT

B CB DB

Innovative Approaches to EMT: Case Studies in the Embryo and the Clinic

Chair: Shuyi Nie (Georgia Institute of Technology)

Shuyi Nie (Georgia Institute of Technology)

Protein Glycosylation in Neural Crest Epithelial-to-mesenchymal Transition and Migration

Guojun Sheng (Kumamoto University)

Epithelial-mesenchymal Transition (EMT) Drives Mesothelial Fusion During Avian Chorioallantoic Membrane (CAM) Formation

Heide Ford (University of Colorado Anschutz Medical Campus)

Developing Novel Means to Inhibit Metastasis Through Targeting Tumor Heterogeneity and EMT

10:00 am – 11:30 am EDT

CB DB B

The Covert Health Consequences of Obesity and Hormone Signaling: Paradoxical Effects on Bone and Body Composition

Chairs: Maria Serrat (Marshall University School of Medicine) & **Eve Donnelly** (Cornell University)

John Kopchick (Ohio University Heritage College of Osteopathic Medicine)

Impact of the GH-IGF Axis on Adipose Tissue and Obesity: Are there Benefits of Endocrine Defects?

Eve Donnelly (Cornell University)

The Paradox of Fragile but Dense Bones in Type 2 Diabetes

Maria Serrat (Marshall University School of Medicine)

Mechanisms of Linear Growth Acceleration in Childhood Obesity

10:00 am – 11:30 am EDT

ED

The Best of Times and the Worst of Times: Innovative Technology Applications and Teaching Designs Supporting the Requirements and Resiliency of Current Anatomical Education

Chair: Edgar Meyer (University of Arkansas for Medical Sciences)
Kenneth "Cal" Hisley (William Carey University College of Osteopathic Medicine)
The AAA Virtual Anatomy Community and Its Inspiration from Innovations to an Osteopathic Anatomy Curriculum
Dongmei Cui (University of Mississippi Medical Center)
Challenges and Successes in Bringing Microscopic Anatomy Online for Medical Education
Edgar Meyer (University of Arkansas for Medical Sciences)
Prosections to Virtual Explorations: Transitions in a Physician Assistant Gross Anatomy Course and Beyond

11:30 am – 12:30 pm EDT

Chat Lounge - Tips on Writing Your AAA Symposium Proposal

Laura Johnson (University of Missouri - Columbia), **Kirsten Brown** (George Washington University) & **Ralph Marcucio** (University of California, San Francisco)

Join the co-Chair of the Program Committee and the Chairs of the Educational Affairs Committee and Professional Development Committee for a workshop on writing your AAA symposium. We will cover the different types of symposia offered as well as guidance on what we are looking for in strong proposals

This small group discussion will take place in a video chat room. You can ask your questions but also hear what others are asking.

12:30 pm – 2:00 pm EDT

Cardiovascular Biology: Development, Dysfunction and Disease Platform Session

Chair: Rusty Lansford (University of Southern California)

Minh Hanh Doan (University of Guelph)

Ontogenetic Changes in the Reptilian Heart: An Investigation of Cardiomyocyte Proliferation and Hyperplasia in the Leopard Gecko (*Eublepharis macularius*)

María Teresa Soto-Navarrete (Universidad de Málaga)

Experimental Evidence of The Genetic Hypothesis on The Etiology of Bicuspid Aortic Valve Aortopathy

Riley Leonard (University of Iowa)

Inhibition of the -miR-200 family results in cardiac developmental defects

James Hawker (South Florida State College)

TGF β family receptors ALK-1, ALK-5, Endoglin, TGF β RII, and BMPRII are expressed on endothelial cells and show differing biological responses to different TGF β family ligands

Na Xu (Cincinnati Children's Hospital Medical Center)

Pharmacological Inhibition of Macrophage Infiltration Prevents Myxomatous Valve Degeneration in Marfan Syndrome

Nivedhitha Velayutham (The Heart Institute, Cincinnati Children's Hospital Medical Center)

Cardiomyocyte Cell Cycling, Maturation, and Growth by Multinucleation in Postnatal Swine

12:30 pm – 2:00 pm EDT

Sculpting the Face: A Role for the Cranial Nerves (Hybrid Symposium)

Chair: Lisa Taneyhill (University of Maryland)

Tony Mosconi (Chapman University)

Cranial Nerve Development, Distribution, and Function

Yang Chai (University of Southern California)

Mesenchymal Stem Cells in Tissue Homeostasis and Regeneration

Emily Lessner (University of Missouri)

Ecomorphology and Morphological Diversity of Trigeminal Nerve-mediated Somatosensation in Sauropsids

Joshua Gross (University of Cincinnati)

Developmental Integration between the Lateral Line Sensory System and the Craniofacial Complex in a Natural Population

12:30 pm – 2:00 pm EDT

EV V B

Inside Alligators: Anatomy, Behavior and Evolution of Alligators and Crocodilians

Chair: Casey Holliday (University of Missouri)

Henry Tsai (Missouri State University)

The Development of Appendicular Joint Cartilages in Alligator *Mississippiensis*: Evolutionary and Biomechanical Implications for Archosauria

Stephanie Drumheller (University of Tennessee)

Incorporating Trace Fossils When Exploring the Interplay of Form and Function in the Crocodyliform Feeding Apparatus

Kent Vliet (University of Florida)

Four Decades of Research Engagement at the St. Augustine Alligator Farm Zoological Park

12:30 pm – 2:00 pm EDT

ED

Education Platform Session #4

Chair: Cheryl Hill (University of Missouri – Columbia)

Stefanie Attardi (Oakland University William Beaumont School of Medicine)

Changes in Gross Anatomy Laboratory Assessment During Covid-19

Mike Pascoe (University of Colorado Anschutz Medical Campus)

Serving as an Anatomy Laboratory Teaching Assistant was not Associated with Higher Scores on the USMLE Step 1 Exam

Casey Boothe (University of Mississippi Medical Center)

Preparing Future Faculty: Directing a Course as a Graduate Student Develops Autonomous, Flexible, Student-Centered Educators

Alexis MacDonald (University of Colorado Anschutz Medical Campus)

No Need to Reinvent - Augmenting a Flipped Class Histology Curriculum with a Commercial Online Course

Andrew Cale (Indiana University School of Medicine)

Metacognition in the Middle: Mismatch between Anticipated and Actual Exam Grades of Allied Health Anatomy Students

Jennifer Hayes (The University of Melbourne)

Anatomy Textbooks - Mind the Gap

2:00 pm – 2:30 pm EDT

Chat Lounge - Mentoring for Early-Career Faculty & Graduate Students

Amberly Reynolds (Sam Houston State University)

Co-sponsored by AAA's Ambassador Committee

Discussion on effective mentoring strategies and/or what to expect for early-career faculty and graduate students and how to use them to foster career development.

This small group discussion will take place in a video chat room. You can ask your questions but also hear what others are asking.

2:30 pm – 4:00 pm EDT

EV DB

Cellular Mechanisms of Development as a Key to Understanding Vertebrate Evolution

Chair: M. Kathleen Pitirri (Pennsylvania State University)

Karen Sears (University of California, Los Angeles)

Developmental Basis of Mammalian Evolution

Brian Frank Eames (University of Saskatchewan)

Bony Features in Cartilaginous Fishes

James Hanken (Harvard University)

Developmental Basis and Consequences of a Key Innovation in Lungless Salamanders

2:30 pm – 4:00 pm EDT

CB DB C

Primary Cilia in Development and Disease

Chairs: Pamela Tran (University of Kansas Medical Center) & **Surya Nauli** (Chapman University)

Jonathan Eggenschwiler (University of Georgia)
Primary Cilia in Hedgehog Signaling and Development
Pamela Tran (University of Kansas Medical Center)
Multifaceted Roles of Primary Cilia in Polycystic Kidney Disease and Obesity
Surya Nauli (Chapman University)
Nanoparticle Targeting of Primary Cilia in Vascular Hypertension

2:30 pm – 4:00 pm EDT

CB DB N

Microglial Activation in the Brain: Structure, Function and Beyond

Chair: Erika Gyengesi (Western Sydney University)

Caterina Scuderi (Sapienza University of Rome)

Neuroinflammation in Alzheimer's Disease: Friend or Foe?

Björn Spittau (Universität Bielefeld)

The Role of TGF β -Signalling in Microglia Maturation and Activation

Erika Gyengesi (Western Sydney University)

The Effect of Modified Curcumin Compounds on the Numbers and Morphology of Microglia

2:30 pm – 4:00 pm EDT

ED

Histology: What Is It Good For?

Chair: Nicole DeVaul (George Washington University)

Haviva Goldman (Drexel University College of Medicine)

Weaving Histology into the Fabric of Medical Education: Histology as a Foundation for Integration and Application

Karen Pinder (University of British Columbia)

Integrated Histology-Pathology Medical Education: What Is It Good For?

Alexander Macnow (University of Pennsylvania)

The Application of Histology in Clinical Medicine