Welcome to Boston &
AAA’s Annual Meeting
at EB 2013

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KEY
❤ Cardiovascular
● Cell Biology
■ Developmental Biology
▲ Education & Teaching
◆ Evolution/Anthropology
● Imaging
◆ Neurobiology
❖ Professional Development
♦ Regeneration/Tissue Engineering
MANAGING WORKPLACE CONFLICT  ▲
8:00 am – 12:30 pm, Room 104C

Phillip Glenn (Emerson College)
Part 1 – Understanding Conflict: Assessing Your Own Tendencies
Part 2 – Developing Core Skills for Managing Conflict
This is a two-part workshop on Managing Workplace Conflict.

CELL BIOLOGICAL BASIS OF COMPLEX MORPHOGENESIS [Hybrid Symposium] ▼
1:30 pm – 3:00 pm, Room 102AB

CHAIR: Andrew Dudley (Univ. of Nebraska Medical Center)
Bhavesh Chauhan (Children’s Hospital Research Foundation)
The Role of the Rho GTPases in Lens Placode Invagination
Melinda Larsen (Univ. at Albany, SUNY)
Cellular Dynamics in Salivary Gland Branching Morphogenesis
Amy Shyer (Harvard Medical School)
A Biomechanical Study of Patterning during Gut Development
Arkhat Abzhanov (Harvard Univ.)
Developmental Mechanisms for Morphological Evolution
Andrew Dudley (Univ. of Nebraska Medical Center)
A Novel Mechanism of Chondrocyte Column Formation in Growth Plate Cartilage

LANGMAN GRADUATE STUDENT PLATFORM AWARD PRESENTATION
1:15 pm – 3:00 pm, Room 104C

CHAIR: Michelle Lazarus (Penn State College of Medicine)
Amanda Troy (Penn State College of Medicine)
High Fat Diet Decreases Glucose-dependent Modulation of 5-HT Responses in Gastrointestinal Vagal Afferent Neurons
Dominik Duscher (Linz General Hospital)
The Vascular Basis of Perforator Flaps of the Upper Abdominal Wall: An Anatomical Study
Madeline Singer (Univ. of Utah)
Age-Related Difference in Postural Control during Recovery from Forward and Backward Falls
Christopher Newman (Indiana Univ. School of Medicine)
Reducing Parathyroid Hormone is Essential for Correcting Cortical Bone Deficiencies Associated with Chronic Kidney Disease
Ting Wang (Oklahoma State Univ. Center for Health Science)
Vesicular Glutamate Transporter 1-immunoreactive Sensory Neurons in the Rat Intrinsic Cardiac Ganglia
HT Law (Simon Fraser Univ.)
Francisella Bacteria Encode Genes Required for Efficient Invasion and Intracellular Replication in Hepatocytes
Jihee Sohn (Univ. of Pittsburgh)
Muscle-derived Cells (MDCs) Responsible for Myogenesis Differ from MDCs Involved in Adipogenesis in Dystrophin/Utrophin-/- Mice

MASTER CLASS: TEAM-BASED LEARNING IN ANATOMY CURRICULUM ▲
1:30 pm – 3:00 pm, Room 104AB

Supported by an educational grant from Annual Reviews and Federation of American Societies for Experimental Biology
CHAIR: Mary Bee (Oakland Univ. William Beaumont School of Medicine/UDM)
Gary Nieder (Wright State Univ.)
Fundamentals of Team-based Learning and How it Can Work in Teaching Anatomy
Nagaswami Vasan (Univ. of Medicine and Dentistry of New Jersey)
Team-based Learning: Pedagogy for the 21st Century - Effective, Efficient and Economical
Todd Hoagland (Medical College of Wisconsin)
Successes and Pitfalls of Teaching Medical Gross Anatomy Via Only Team-based Learning and Lab
Saturday, April 20

**CARDIOVASCULAR BIOLOGY**
Platform Session |
1:30 pm – 3:00 pm, Room 105

**CHAIR:** Katja Schenke-Layland (Fraunhofer Institute for Interfacial Engineering and Biotechnology IGB)

**Ali Nsair** (UCLA)
Human Cardiovascular Progenitor Cells Positive for Flt1 and Flt4 Surface Cell Markers Differentiate Into All Three Cell Types of the Cardiovascular Lineage

**Jinpu Yang** (New York Medical College)
Bone Marrow Cells Can Be Converted into Cardiac Competent Progenitors via Inhibition of G9a Histone Methyltransferase G9a

**Brenda Rongish** (Univ. of Kansas Medical Center)
Computational Imaging and Modeling Approaches Reveal Mechanisms Driving Myocardial Precursor Movements

**Monika Holeiter** (Fraunhofer IGB)
Impact of Human Pluripotent Stem Cell-derived Extracellular Matrix Proteins on Cardiac Cell Fate Decision

**Ashlie Riley** (Univ. of South Carolina, School of Medicine)
Localization and Distribution of CNC and VSM Cells in a Mouse Model of Aortopathy: A Novel 3D Approach

**Ulrich Stock** (Univ. Hospital)
The Myth of Cryopreservation of Heart Valves

**Danielle Bentley** (Univ. of Toronto)
Movement Guided Learning® as a Novel Means of Musculoskeletal Anatomy Instruction

**FRONTIERS IN CELL MIGRATION: VESSELS, NEUROGENESIS, AND CANCER**
3:30 pm – 5:00 pm, Room 102AB

**CHAIRS:** Paul Kulesa (Stowers Institute for Medical Research) & Cathy McKinney (Stowers Institute for Medical Research)

**Rakesh Jain** (Harvard Medical School & Massachusetts General Hospital)
Normalizing Tumor Vasculature and Microenvironment: Insights from In Vivo Microscopy

**Carlos Lois** (Univ. of Massachusetts Medical School)
Neuronal Migration in the Adult Vertebrate Brain

**Carol LaBonne** (Northwestern Univ.)
Coordinate Regulation of Core EMT Regulatory Factors is Essential for Migratory and Invasive Behavior

**Paul Kulesa** (Stowers Institute for Medical Research)
Dynamic Formation of the Chick Sympathetic Ganglia

**EDUCATIONAL COMMUNITY OUTREACH:**
3:30 pm – 5:00 pm, Room 104AB

**EDUCATIONAL RESEARCH PLATFORM**
Award Presentation ▲
3:15 pm – 4:45 pm, Room 104C

**CHAIR:** Benjamin Auerbach (The Univ. of Tennessee)

**Leah D’Souza** (Western Univ.)
Teaching Oncology Residents Anatomy: A Multidisciplinary (MDT) Approach

**Lee Pfaff** (Boston Univ.)
The Effect of Training on Individuals’ Interactions with Visual Data

**Sonya Van Nuland** (The Univ. of Western Ontario)
Head to Head: The Role of Competition in Undergraduate Education

**Victoria Roach** (Univ. of Western Ontario)
Stereo Laparoscopy: A Novel Approach to Resident Surgical Education

**Megan Hansen** (Brigham Young Univ.)
Using Imaging Biomarkers in the Histological Validation of Alzheimer’s Disease

**EDUCATIONAL COMMUNITY OUTREACH:**
Get Inspired and Get Out There!

**EDUCATIONAL RESEARCH PLATFORM**
Award Presentation ▲
3:15 pm – 4:45 pm, Room 104C

**CHAIR:** Barb Puder (Samuel Merritt Univ.)

**Barb Puder** (Samuel Merritt Univ.)
Development and Implementation of Educational Outreach Programs for Oakland and Neighboring Communities

**Jonathan Wisco** (Brigham Young Univ.)
Anatomy Academy Exposes Undergraduate and Medical Students to all ACGME Core Competencies through an Experiential Learning Environment

**Joy Reidenberg** (Mount Sinai School of Medicine)
A History of Giving Back and Caring: The Mount Sinai Tradition

**Darrell Evans** (Brighton and Sussex Medical School)
BrightMed: An Opportunity to Open up Anatomy to the Next Generation

**Samuel Marquez** (SUNY Downstate Medical Center)
Anatomy Education Day: A Global Outreach
MICRO-IMAGING IN BIOLOGICAL ANTHROPOLOGY: FINE FOCUS ON PRIMATE ONTOGENY AND EVOLUTION
3:30 pm – 5:00 pm, Room 105
CHAIR: Tim D. Smith (Slippery Rock Univ.)

Alfred L. Rosenberger (City Univ. of New York)
Uncovering Cranial Anatomy Variation in Fossil Tarsiiform Crania using MicroCT

Timothy M. Ryan (Penn State Univ.)
Structural Analyses of the Developing Human Postcranial Skeleton using High-resolution CT

Tim D. Smith (Slippery Rock Univ.)
Microanatomical Maps: A CT and Histological Study of Soft Tissue-bone Interfaces in Developing Primates

POSTDOCTORAL PLATFORM AWARD PRESENTATION
5:00 pm – 6:30 pm, Room 104C
CHAIR: L-Bruno Ruest (Baylor College of Dentistry)

Trish Parsons (Univ. of Pittsburgh)
Gene-environment Interaction between Twist and Thyroid Hormone Results in Extreme Craniosynostotic Phenotypes in Mice

Annita Achilleos (Stowers Institute for Medical Research)
Germ Cell Nuclear Factor (Gcnf/Nr6a1) Plays a Novel Role in Neural Crest Cell Induction

Saul Flores (UH Rainbow Babies & Children’s Hospital)
Physiological Assessment Of The PEPCK-Cmus Mouse Heart. A Mouse Model Of An Athletic Heart Without Imposed Training?

Foteini Hassiotou (The Univ. of Western Australia)
Breastmilk is a Novel Source of Stem Cells with Multi-Lineage Differentiation Potential

Kristi Lewton (Harvard Univ.)
Allometry and Function of Primate Pelves

Annita Achilleos (Stowers Institute for Medical Research)
Genetic Dissection of Treacher Collins Syndrome: Polr1c and Polr1d

AAA Career Network mentors will be offering one-on-one career advising sessions in the AAA Lounge, Room 103, Saturday through Tuesday at 10:30am-12:00pm and 2:30pm-4:00pm. Please visit the Lounge to sign up for an advising session.

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○ Cell Biology
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★ Evolution/Anthropology
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◆ Professional Development
◆ Regeneration/Tissue Engineering
PLENARY – EVOLUTIONARY/DEVELOPMENTAL BIOLOGY
8:00 am – 10:00 am, Room 104AB
Co-sponsored by the AAA Fellows Legacy Fund

CHAIRS: John Fallon (Univ. of Wisconsin) & Gary Schoenwolf (Univ. of Utah)

The limbs of the animals that populate the earth show astonishing anatomical and functional diversity. Naturalists, embryologists, developmental biologists and evolutionary biologists noted this. The situation became further intriguing and challenging when molecular biologists and geneticists discovered that essentially the same menu of genes are expressed during the development of all animal limbs. But no one would mistake an insect wing for a fish fin, or for a primate forelimb. The discipline of Evolutionary Developmental Biology has made great progress in elucidating the developmental and genetic mechanisms that control unique cellular gene expression, migration, proliferation and death that result in the wondrous anatomy and function of animal limbs. Our speakers are among the leaders in the field.

Cliff Tabin (Harvard Medical School)
Evolution of Vertebrate Limb Morphology

Neil Shubin (Univ. of Chicago)
Fossils, Genes, and the Origin of Organs

Nipam Patel (Univ. of California, Berkeley)
The Evolution of Arthropod Appendages

W. James Nelson (Stanford Univ.)
Structural and Functional Evolution of Epithelia and Cell-cell Adhesion Complexes

Sandra Schmid (UT Southwestern Medical Center)
Regulation of Early Stages in Clathrin Mediated Endocytosis Revealed by Quantitative Analyses in Living Cells

EVOLUTION OF HOST-PATHOGEN INTERACTIONS: UNDERSTANDING HOW MICROBIAL PATHOGENS HIJACK HOST CELLS
2:30 pm – 4:00 pm, Room 102AB

CHAIR: Julian Guttman (Simon Fraser Univ.)

John A.T. Young (The Salk Institute for Biological Studies)
Systems Biology Analysis of HIV-host Interactions

Matthew Welch (Univ. of California, Berkeley)
Mobilization of the Actin Cytoskeleton by Microbial Pathogens

Pascale Cossart (Institut Pasteur)
Host Pathogen Interactions: New Lessons from Listeria Monocytogenes

CURRENT RESEARCH ON CURRICULAR CHANGES AND THEIR IMPACT ON STUDENT KNOWLEDGE
2:30 pm – 4:00 pm, Room 104AB
Co-sponsored by Anatomical Sciences Education

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

Jennifer McBride (Cleveland Clinic Lerner College of Medicine)
Current Curricular Trends in the Anatomical Sciences: The 2012 Survey

Wojciech Pawlina (Mayo Clinic College of Medicine)
Duration of Anatomy Courses and Performance on the USMLE Step 1 and Step 2 Examinations: Is There a Relationship?
Sunday, April 21

Richard Drake (Cleveland Clinic Lerner College of Medicine)
Retention of Anatomical Knowledge: Impact of Current Curricular Approaches

THE USE OF PLURIPOTENT STEM CELLS IN DISEASE MODELING
2:30 pm – 4:00 pm, Room 104C
Co-sponsored by AAA's Advisory Committee for Young Anatomists

CHAIR: Lezanne Ooi (Univ. of Wollongong)

Rudolf Jaenisch (Whitehead Institute/MIT)
Stem Cells, Pluripotency and Nuclear Reprogramming

Paulina Ordonez (Univ. of California, San Diego)
Disruption and Therapeutic Rescue of a Human Pluripotent Stem Cell Derived Model of Niemann Pick Type C1

Lezanne Ooi (Univ. of Wollongong)
Induced Pluripotent Stem Cells as Tools for Disease Modelling and Drug Discovery in Alzheimer’s Disease

FORM, FUNCTION, AND EVOLUTION
[Platform Session] 2:30 pm – 4:00 pm, Room 105

CHAIR: Casey Holliday (Univ. of Missouri)

Emm Schachner (Univ. of Utah)
Evolution of the Respiratory System in Testudines: Anatomy and Phylogeny

Robert Kambic (Brown Univ.)
Seeing Terrestrial Avian Locomotion with X-ray Eyes

Tomasz Owerekowicz (California State Univ.)
Evolution of the In-series Circulation in Tetrapods: Form Follows Function

Trina Du (McGill Univ.)
3D Geometric Morphometric Analysis of Phenotypic Plasticity in the Pectoral Girdle of a Basal Actinopterygian Fish

Angela Horner (Brown Univ.)
Cutting the Cost of Crouching: Over-ground and Tunnel Locomotion in a Tunnel Specialist

Casey Holliday (Univ. of Missouri)
Form, Function, and Evolution of Archosaur Mandibular Symphyses

YOUNG INVESTIGATOR AWARD SYMPOSIUM
4:30 pm – 6:30 pm, Room 104C

R.R. Bensley Award Lecture in Cell Biology
Thomas Maresca
(Univ. of Massachusetts at Amherst)
Stepping into a Tense Relationship: Mechano-molecular Regulation of Cell Division by Force

C.J. Herrick Award Lecture in Neuroanatomy
Thomas Jhou
(Medical Univ. of South Carolina)
Dopamine and Anti-dopamine Systems: Polar Opposite Roles in Behavior

H.W. Mossman Award Lecture in Developmental Biology
Joanna Wysocka
(Stanford Univ. School of Medicine)
Enhancer-mediated Regulation of Developmental Gene Expression

Morphological Sciences Award Lecture
Tamara Franz-Odendaal
(Mount Saint Vincent Univ.)
Unraveling the Complexity of the Skull: An Evo-Devo Approach

Don’t miss a chance to network at AAA’s Welcome Reception/Socializer
Sunday, April 21, 7:00 pm – 8:30 pm
Boston Children’s Museum
308 Congress Street, Boston
(Transportation is not provided)
PLENARY – ANATOMICAL SCIENCES
EDUCATION: THE FUTURE
8:00 am – 10:00 am, Room 104AB

CHAIRS: Richard Drake (Cleveland Clinic Lerner College of Medicine) & Wojciech Pawlina (Mayo Clinic College of Medicine)

This plenary session will stimulate the anatomical sciences educator to look into the future. Can approaches developed in our educational programs become curricular pillars of the future? Similarly, educational activities used in other parts of the medical school curriculum could have a profound impact on our discipline if we recognize their potential. In this session two speakers, Frederick Hafferty from Mayo Clinic and David Hirsh from Harvard Medical School, will challenge you to move your thinking in new directions.

Frederic Hafferty (Mayo Clinic)
Anatomy as a Garden of Educational Delights: Medical Education, Professional Formation, and the Hidden Curriculum

David Hirsh (Harvard Medical School)
Longitudinal Integrated Clerkship Training as a Model for Basic Science Education

PLENARY – PALEONTOLOGY AND FUNCTIONAL ANATOMY
10:30 am – 12:30 pm, Room 104AB

CHAIRS: Jeffrey Laitman (Mount Sinai School of Medicine) & Jason Organ (Indiana Univ. School of Medicine)

The fields of paleontology and functional anatomy have long histories in our association. Indeed, our first president, Joseph Leidy, was an esteemed paleontologist and anatomist at the University of Pennsylvania. As these sciences have matured, so have the depth of questions one can answer using the fossil record. This session will celebrate the evolution of these sciences from comparative and descriptive in nature to experimental and will highlight how the science has adapted to incorporate modern technology and perspective to illuminate the past, while lighting the way for the future.

Jeffrey Laitman (Mount Sinai School of Medicine)
Joseph Leidy Would Be Very Proud: 125 Years of Progress in Paleontology and Functional Anatomy

DEVELOPMENT AND REPROGRAMMING OF VASCULAR SMOOTH MUSCLE
2:30 pm – 4:00 pm, Room 102AB

CHAIR: Charles Little (Kansas Univ. Medical Center)

Mark Majesky (Univ. of Washington)
Development and Diversity of Vascular Smooth Muscle Progenitors

Robert Mecham (Washington Univ., St. Louis)
Vascular Extracellular Matrix and Aortic Cell Differentiation

Hervé Kempf (CNRS-Univ. Henri Poincaré Nancy I)
Reprogramming of Vascular Smooth Muscle Cells into Calcifying Cells: What Can We Learn from the Embryo?

REFRESHER COURSE: HISTOLOGY TEACHING – PAST, PRESENT AND FUTURE
2:30 pm – 4:00 pm, Room 104AB

Supported by an educational grant from MBF Bioscience

CHAIRS: Robert Ogilvie (Medical Univ. of South Carolina) & Robert McCuskey (Univ. of Arizona College of Medicine)

Robert Bloodgood (Univ. of Virginia)
The History of Medical Histology Teaching: Where Have We Come From and Where are We Going?

Helen Amerongen (Univ. of Arizona)
Teaching Histology in Integrated Curricula: Challenges and Opportunities

Robert Ogilvie (Medical Univ. of South Carolina)
A Modern Distributed Learning Histology Course with Virtual Lectures and Labs
Monday, April 22

Comparative Perspectives on the Human Face: Biomedical Implications of Evolutionary Anatomical Research ★
2:30 pm – 4:00 pm, Room 104C

Co-sponsored by The Anatomical Record

Chair: Anne Burrows (Duquesne Univ.)

Janine Ziemann (Howard Univ. College of Medicine)
Comparative Anatomy of Mammalian and Primate Facial Muscles and Evolutionary Genetics of Atavistic Muscles in Humans with Trisomy

Seth Dobson (Dartmouth College)
Neuroanatomical Causes and Social Consequences of Variation in Facial Motor Control: What Comparative Primatology Can Teach Us about Autism Spectrum Disorders

Anne Burrows (Duquesne Univ.)
How Good are Mice and Monkeys as Models for Human Face Transplants? Comparative Physiological Perspectives on Myosin Fiber Types

Tissue Injury, Stem Cells, and Regenerative Medicine [Platform Session] ♦
2:30 pm – 4:00 pm, Room 105

Chair: Martine Dunnwald (Univ. of Iowa)

Xiao Li (Univ. of Iowa)
The Pitx2:miR-200 Family Axis Regulates WNT and BMP Signaling during Tooth Morphogenesis and Renewal

Albert Evinger (Organovo, Inc.)
Osteogenic Differentiation of Mesenchymal Stem/Stromal Cells Within 3D Bioprinted Neotissues

Mathieu Blais (Laval Univ.)
Sensory Neurons Accelerate Reepithelialization through Substance P release in an Innervated Tissue-engineered Model of Skin Wound Healing

Rui Diogo (Howard Univ.)
Is Salamander Limb Regeneration Really Perfect? First Detailed Anatomical and Morphogenetic Analysis of Forelimb Muscle Regeneration in GFP-transgenic Axolotls as a Basis for Regenerative, Developmental and Evolutionary Studies

Foteini Hassiotou (The Univ. of Western Australia)
Breastmilk is a Novel Source of Stem Cells with Multi-lineage Differentiation Potential

Mari Dezawa (Tohoku Univ.)
Intrinsic Pluripotent Stem Cells, Muse Cells, are a Primary Source of iPS Cells in Human Fibroblasts

Keynote Speaker

Supported by an educational grant from AACBNC

Günter Wagner
(Yale Univ.)
Are Cell Types Real? What Gene Regulatory Networks Tell us about Homology

4:30 pm – 5:30 pm, Room 104AB

Key

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PLENARY – NEUROSCIENCE

8:00 am – 10:00 am, Room 104AB

CHAIRS: Kathryn Jones (Indiana Univ. School of Medicine) & Jose Luis Trejo (Cajal Institute)

The elaboration of wiring maps in the nervous system is one of the most impressive examples of how the necessity (to know the connectional diagram of the brain) have effectively found in the development of frontier technologies, the keystone to advance our understanding of the brain structure. This is an essential step to deepen our knowledge of how brain works. The neuroscientists of this Plenary represent the best examples of the efforts to carry out the construction of a wide circuit matrix of the brain at different scales of observation. Connectome and synaptosome undoubtedly constitute two of the next frontiers of knowledge to be addressed.

Jeff Lichtman (Harvard Univ.)
Imaging the Connectome

Javier DeFelipe (Cajal Institute)
From the Connectome to the Synaptome

PLENARY – IMAGING MODALITIES

10:30 am – 12:30 pm, Room 104AB

CHAIRS: Kurt Albertine (Univ. of Utah School of Medicine) & Charles Little (Kansas Univ. Medical School)

Embryology is now entering a third “golden era.” One hundred and twenty-five years ago, embryology blossomed as the field entered an epoch of remarkable imaging discoveries that catalogued the breadth and diversity of developmental morphogenesis. This was followed by an amazing period of productivity when the powerful reductionistic tools of molecular biology were used to define signals and responses to signals. We are now ready to harvest the fruits of these earlier efforts and enter the age of mechanistic understanding. The combination of anatomic scale data sets with modern in vivo imaging tools and powerful computers makes it possible to define the cellular and tissue dynamics that pattern embryos. By merging biology, math, and physics, research groups worldwide are finally beginning to answer the question — what are the forces that shape the embryo?

Scott Fraser (Univ. of Southern California)
Imaging the Cellular Dynamics and Signals that Pattern Embryos

Nadine Peyriéras (CNRS-NED Institut de Neurobiologie)
Recording and Statistical Analysis of Early Zebrafish Developmental Patterns Using In Vivo Multiphoton Microscopy

Charles Little (Kansas Univ. Medical Center)
Integrating Cell and Tissue Motion Patterns during Early Embryogenesis: How Much “Cell Migration” Really

IMAGING LIVE TISSUES

2:30 pm – 4:00 pm, Room 102AB

CHAIRS: Michiko Watanabe (Case Western Reserve Univ. School of Medicine) & Kersti Linask (Univ. of South Florida)

Michael Jenkins (Case Western Reserve Univ.)
Visualizing and Perturbing the Embryonic Cardiovascular System with Light

Elizabeth Hillman (Columbia Univ.)
In Vivo Dynamic and Hyperspectral Microscopy

Anna Devor (Univ. of California, San Diego)
Imaging Neurovascular Interactions in the Cerebral Cortex In Vivo
CURRICULAR INTEGRATION: HOW HAS IT AFFECTED TEACHING AND LEARNING IN GROSS ANATOMY? ▲
2:30 pm – 4:00 pm, Room 104AB

CHAIR: Virginia Lyons (Geisel School of Medicine at Dartmouth)

Todd Hoagland (Medical College of Wisconsin)
Transitioning to an Integrated Curriculum: Challenges, Opportunities and Student Performance in Gross Anatomy

William Adamas-Rappaport (Univ. of Arizona)
The Challenge of Teaching Anatomy in a Organ-based Curriculum: Mistakes Made and Lessons Learned

Jonathan Wisco (Univ. of California, Los Angeles)
Extreme Makeover - Anatomy Edition: How a Paradigm Shift in Pedagogy Reshaped an Anatomy Program

DEVELOPMENTAL BACKGROUNDS UNDERLYING THE MORPHOLOGICAL EVOLUTION OF VERTEBRATES ■ ●
2:30 pm – 4:00 pm, Room 104C

Co-sponsored by Developmental Dynamics

CHAIR: Shigeru Kuratani (Center for Developmental Biology, RIKEN)

James Hanken (Museum of Comparative Zoology, Harvard Univ.)
Embryonic Origin of the Skull: Has the Pattern of Neural Crest Derivation Changed during Vertebrate Evolution?

Shigeru Kuratani (Center for Developmental Biology, RIKEN)
What We Can Learn from Hagfish Embryology

EXCELLENCE IN CANADIAN RESEARCH – NEUROBIOLOGICAL ASPECTS OF AGING
(Hybrid Symposium) 3€
2:30 pm – 4:00 pm, Room 105

Sponsored by the Canadian Association for Anatomy, Neurobiology & Cell Biology

CHAIR: Michael Kawaja (Queen’s Univ.)

Paul Nagy (Sunnybrook Research Institute)
Improvement of Cholinergic Function during Normal and Pathological Aging

Laura Smithson (Queen’s Univ.)
Sympathosensory Sprouting in Aged Mice that Over Express Nerve Growth Factor

Lynsie Thomason (Univ. of Toronto)
Adult Hippocampal Neurogenesis: Another Target of Scyllo-inositol Treatment?

Hongbin Xu (Univ. of Ottawa)
Aberrant Glycerophosphocholine Metabolism is a Primary and Targetable Pathology in Alzheimer Disease

Margaret Fahnestock (McMaster Univ.)
Cholinergic Basal Forebrain Circuit Degeneration in Alzheimer’s Disease

NOVEL 3D IMAGING WITH MICROCOMPUTED TOMOGRAPHY ●
4:30 pm – 6:00 pm, Room 102AB

Supported by an educational grant from Micro Photonics, Inc. and Scanco Medical

CHAIR: Rick Sumner (Rush Univ. Medical Center)

Elise Morgan (Boston Univ.)
Cartilage Imaging and Other Novel Assessments of Bone Repair

Mary Barbe (Temple Univ.)
Nondestructive microCT Imaging of Soft Tissues Using Phosphotungstic Acid-hematoxylin, Intravascular Contrast Agent, and Perfluorochemical

Harrie Weinans (Erasmus Univ.)
In Vivo Imaging
TEACHING INNOVATIONS IN ANATOMY I

[Platform Session] ▲
4:30 pm – 6:00 pm, Room 104AB

CHAIR: Jon Jackson (Univ. of North Dakota School of Medicine)

Virginia Lyons (Geisel School of Medicine at Dartmouth)
Flipping the Classroom: Turning the Traditional Anatomy Lecture on Its Head

Lisa Lee (Univ. of Colorado School of Medicine)
Gender and Age Bias in Digital Anatomical Science Education

Alison Doubleday (Univ. of Illinois at Chicago, College of Dentistry)
Student-Generated Content in the Gross Anatomy Laboratory

Holly Ressetar (West Virginia Univ. School of Medicine)
Optimizing the Gross Laboratory Experience: Dissection Group Rotation and Peer Evaluation

Bruce Wainman (McMaster Univ.)
Dissecting through Interprofessional Barriers

Chika Nwachukwu (Mayo Medical School)
Assessing the Quality of Dissection: A Method for Improving Anatomy Knowledge of First Year Medical Students

Jennifer Fish (Univ. of California, San Francisco)
The Developmental Basis for Jaw Size Variation in Evolution and Disease

Patricia Purcell (Harvard Medical School)
Essential Genes in the Development and Maintenance of the Temporomandibular Joint

NEUROVASCULAR DEVELOPMENT ☾

4:30 pm – 6:00 pm, Room 105

CHAIR: Joseph McCarty (MD Anderson Cancer Center)

Joseph McCarty (MD Anderson Cancer Center)
Cell Adhesion and Signaling Pathways in Neurovascular Development

Chenghua Gu (Harvard Medical School)
Developmental Cross-talk between Nervous and Vascular Systems

Angeliki Louvi (Yale School of Medicine)
CNS Vascular Malformations and the Neurovascular Unit

DEVELOPMENT AND DISEASE – IT’S ALL ABOUT ANATOMY [Platform Session] ■

4:30 pm – 6:00 pm, Room 104C

CHAIR: Paul Trainor (Stowers Institute for Medical Research)

Annita Achilleos (Stowers Institute for Medical Research)
Genetic Dissection of Treacher Collins Syndrome: Polr1c and Polr1d

Melissa LaBonty (Tufts Univ.)
The Novel Zebrafish Mutant Fantome/wdr43 as a Human Craniofacial Ribosomopathy Model

Amy Merrill (Univ. of Southern California)
Bent Bone Dysplasia Syndrome Defines a Nuclear Role for FGFR2 in Skeletal Development

Nathan Young (Univ. of California, San Francisco)
Embryonic Origins of Novelty and Constraint in the Amniote Upper Jaw

Visit AAA’s Booth # 361 in the Exhibit Hall
EXPANDING TRANSLATIONAL RESEARCH AND IMPACTING PATIENT CARE THROUGH THE USE OF CADAVERIC MATERIAL
8:00 am – 9:30 am, Room 104AB

CHAIR: H. Wayne Lambert (West Virginia Univ. School of Medicine)

H. Wayne Lambert (West Virginia Univ. School of Medicine)
Using Cadaveric Material to Impact Translational Research: From Anatomy Lab to the Operating Room

Jonathan Wisco (Brigham Young Univ.)

R. Shane Tubbs (Children’s Hospital, Univ. of Alabama at Birmingham)
Reverse Translational Research with a Neuroanatomic Focus: From the Bedside to the Bench

THE SKINNY ON FAT: ADIPOSE TISSUE AND STEM CELLS
8:00 am – 9:30 am, Room 104C

CHAIR: Julie Fradette (Université Laval/LOEX)

Andre Tchernof (Université Laval)
Region-specific Alterations in Adipose Tissue Function: Cardiometabolic Risk Goes Belly-up

Julie Fradette (Université Laval/LOEX)
Spotlight on Adipose Tissue as a Remarkable Stem Cell Source for Regenerative Medicine and Tissue Engineering Applications

Adam Katz (Univ. of Florida College of Medicine)
Putting Fat to Work: Therapeutic Possibilities for Adipose Tissue and Cells

RESPONSES TO NOVEL ENVIRONMENTAL STIMULI: INDUCTION AND EPIGENETIC INHERITANCE (Hybrid Symposium)
8:00 am – 9:30 am, Room 105

CHAIR: Yoav Soen (Weizmann Institute of Science)

Yoav Soen (Weizmann Institute of Science)
Coping with Unexpected Environments – Implications for Epigenesis

Nanette Nascone-Yoder (North Carolina State Univ., College of Veterinary Medicine)
Developmental Origins of Novel Gut Morphology in Frogs

Trish Parsons (Univ. of Pittsburgh)
Gene-environment Interaction between Twist and Thyroid Hormone Results in Extreme Craniosynostotic Phenotypes in Mice

Michelle Sukup Jackson (MIT)
Using the Novel RADR Mouse to Visualize the Effects of Age and Environment on DNA Repair In Vivo in Multiple Tissue

TEACHING INNOVATIONS IN ANATOMY II
[Platform Session]
10:00 am – 11:30 am, Room 104AB

CHAIR: Mark Hankin (Oakland Univ. William Beaumont School of Medicine/UDM)

Peter Ward (WVSOM)
Study Approaches, Study Methods, Academic Success, and Recall of Anatomical Learning

Steffi Regpala (Queen’s Univ.)
Memory and Cognitive Load Theory in Anatomical Education

Timothy Wilson (Western University)
The Effects of Image on Learning and Vice Versa

Erin Fillmore (Indiana Univ. School of Medicine)
Exploring Two Different Gross Anatomy Laboratory Experiences: The Perspective of the Repeating First Year Medical Student

Amy Lovejoy Mork (Morehouse School of Medicine)
Rotation and Reorganization of Dissection Groups Promotes Professionalism and Enhances Cadaver Based Learning

Christine Spampinato (Mayo Clinic)
“Safe Harbor” Forum: Professionalism Reflection Sessions for First Year Medical Students in the Gross Anatomy Course
Wednesday, APRIL 24

**BRAIN INTERFACES AND THEIR THERAPEUTIC APPLICATIONS**
10:00 am – 11:30 am, Room 104C

**CHAIR:** Jonathan Wolpaw (Wadsworth Center, NYS Department of Health)

Jonathan Wolpaw (Wadsworth Center, NYS Department of Health)
Brain-computer Interfaces for Replacing, Restoring, or Improving CNS Function

Alvaro Pascual-Leone (Beth Israel Deaconess Medical Center, Harvard Univ.)
Electrical and Magnetic Stimulation to Improve Brain Function

Aiko Thompson (Helen Hayes Hospital, Columbia Univ.)
Operant Conditioning of Spinal Reflexes to Improve Function Recovery after CNS Damage

**AUTOPHAGY, METABOLIC SYNDROME, AND CARDIOPROTECTION**
10:00 am – 11:30 am, Room 105

**CHAIR:** Roberta Gottlieb (San Diego State Univ.)

Oriam Shirihai (Boston Univ. School of Medicine)
Mitochondrial Fusion, Fission, and Autophagy: Impact of Diet on Mitochondrial Quality Control

Robert Mentzer (Wayne State Univ. School of Medicine)
Autophagy, Metabolic Syndrome, and Heart Surgery

Roberta Gottlieb (San Diego State Univ.)
Mitophagy and Cardioprotection
Committee Meetings & Social Events

AAA committee meetings, poster sessions, and receptions are open to all members. Unless otherwise noted, all other meetings are by invitation only. CC = Convention Center, REN = Renaissance Boston Waterfront Hotel

Friday, April 19
Board of Directors Meeting
8:00 am – 5:00 pm, Room 101 (CC)

Saturday, April 20
AAA Career Networking
10:00 am - 10:30 am, Room 104C (CC)

ACYA Meeting
11:30 am - 1:00 pm, AAA Lounge, Room 103 (CC)

Fellows Circle Lunch
12:00 pm – 2:00 pm, Brewster (REN)

Professional Development Committee
1:00 pm – 2:30 pm, Room 101 (CC)

Publications Committee Meeting
2:00 pm – 5:00 pm, Atlantic 3 (REN)

AACBNC Reception (Department chairs only)
5:30 pm – 7:00 pm, Brewster (REN)

Wiley Reception (invitation only)
7:00 pm – 8:30 pm, Atlantic 3 (REN)

Sunday, April 21
New Member Welcome Breakfast
7:00 am – 8:00 am, NW Lobby A (CC)

Past Presidents’ Luncheon
12:30 pm – 1:30 pm, Room 201 (CC)

Membership Committee Meeting
12:30 pm – 2:00 pm, Room 101 (CC)

Meet the Professor Luncheon (invitation only)
12:30 pm – 2:00 pm, Room 50 (CC)

AAA/APS Undergraduate Poster Session
4:00 pm – 5:00 pm, East Registration (CC)

AAA Welcome Reception/Socializer
7:00 pm – 8:30 pm, Boston Children’s Museum, 308 Congress Street

Monday, April 22
Public Affairs Committee Meeting
7:00 am – 8:00 am, Room 101 (CC)

Meet the Professor Luncheon (invitation only)
12:30 pm – 2:00 pm, Room 50 (CC)

Scientific Affairs Committee Meeting
12:30 pm – 2:30 pm, Room 101 (CC)

Business Meeting
5:45 pm – 6:30 pm, Room 104C (CC)

Student/Postdoctoral Poster Reception
6:30 pm – 7:30 pm, NW Lobby A (CC)

Tuesday, April 23
ASE Editorial Board Meeting
7:00 am – 8:00 am, Room 101 (CC)

Educational Affairs Committee Meeting
12:30 pm – 2:00 pm, Room 101 (CC)

Meet the Professor Luncheon (invitation only)
12:30 pm – 2:00 pm, Room 50 (CC)

IFAA Meeting (invitation only)
12:30 pm – 2:00 pm, Atlantic 3 (REN)

ACYA Meeting
2:00 pm - 4:30 pm, Room 101 (CC)

Awards Banquet
7:00 pm – 10:00 pm, Pacific Ballroom (REN)

Wednesday, April 24
Program Committee Meeting
11:30 am – 2:30 pm, Room 101 (CC)
Thank you to those companies and institutions that support the sessions and awards at the AAA Annual Meeting/EB 2013:

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AAA Poster Sessions
Be sure to take time to visit the posters in the Convention Center Exhibit Hall. Posters are up all day with presentation times from 12:30 – 2:00 pm so that you can connect with presenters over the lunch break.

Sunday, April 21
Bones, Cartilage & Teeth: Anatomy & Morphology
Bones, Cartilage & Teeth: Craniofacial
Bones, Cartilage & Teeth: Evolution & Anthropology
Bones, Cartilage & Teeth: Exercise, Biomechanics; Bioengineering
Bones, Cartilage & Teeth: Molecular Mechanisms
Cell Biology
Muscle
Cardiovascular Biology: Anatomy & Morphology
Cardiovascular Biology: Angiogenesis; Lymphangiogenesis; Vasculogenesis
Cardiovascular Biology: Biomechanics; Bioengineering
Cardiovascular Biology: Dysfunction; Disease; Genetic Disorders
Cardiovascular Biology: Heart Development & Growth
Cardiovascular Biology: Stem Cells, Cell & Molecular Biology
Imaging: Anatomy
Imaging: Technology & Methods
Neurobiology: Behavior; Neuropsychiatric Disorders; Disease; Aging
Neurobiology: Brain
Neurobiology: Neural Cell Biology
Neurobiology: Neuronal & Spinal Cord Degeneration, Repair & Regeneration
Neurobiology: Neuroprotection & Neuroimmunology
Anatomy: Neural
Anatomy: Tendons, Ligaments & Muscles
Anatomy: Urogenital
Regenerative Medicine: Organ & Tissue Regeneration
Regenerative Medicine: Stem Cells
Stem Cells
Wound Healing
Form, Function & Evolution
Biological Anthropology

Monday, April 22
Anatomy
Anatomy: Animal Models
Anatomy: Bones Cartilage & Teeth
Anatomy: Cardiovascular
Anatomy: Form & Variation
Anatomy: Functional Anatomy & Biomechanics

Tuesday, April 23
Anatomy Education
Anatomy Education: Assessment, Curriculum & Mentoring
Anatomy Education: Clinical Based Approaches
Anatomy Education: Computer-Assisted Learning
Anatomy Education: Teaching Methods & Innovations
Anatomy Education - Educational Community Outreach
Development & Growth: Birth Defects
Development & Growth: Craniofacial
Development & Growth: Limbs
Development & Growth: Neural Crest & Placodes
Development & Growth: Gene & Protein Expression
Anatomical Basis of Development Pathogenesis of Disease

Additional Poster Events
AAA/APS Undergraduate Poster Session
Sunday, April 21, 4:00 pm – 5:00 pm, East Registration

AAA Student/Postdoc Poster Reception
Monday, April 22, 6:30 pm – 7:30 pm, NW Lobby A

Late-breaking Posters
Wednesday, April 24, Exhibit Hall
Presentation Time: 10:30 am-12:00 pm