

# 2016 Year in Review

# What is modern Anatomy?

Anatomy is the study of the structure of living things. Anatomist is a broad term to describe someone who studies, researches, or teaches in the anatomical sciences. This anatomy could be of animals, or humans, or even plants. Anatomists study cells, molecules, and whole organisms as large as whales. Anatomists also study extinct species, such as dinosaurs and Neanderthals.

## **Where do Anatomists work?**

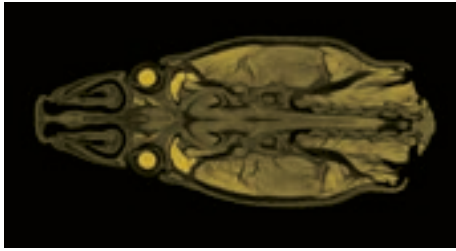
Anatomists work in universities, research institutions, and private industry. A large portion of our members teach anatomy in medical, dental, and veterinary schools, as well as large undergraduate universities. Anatomists understand how to perform dissections and work with students and researchers to better understand humans and animals in order to teach the next generation of doctors, nurses, physical therapists, dentists, and veterinarians.

Members also run their own research labs at organizations and universities. They work together in teams of scientists, postdoctoral researchers, and students to uncover discoveries that lead to better understanding of our biology. Conditions such as cleft palate, congenital heart defects, neurological disorders, and cancer biology all require research related to cell and molecular anatomy.

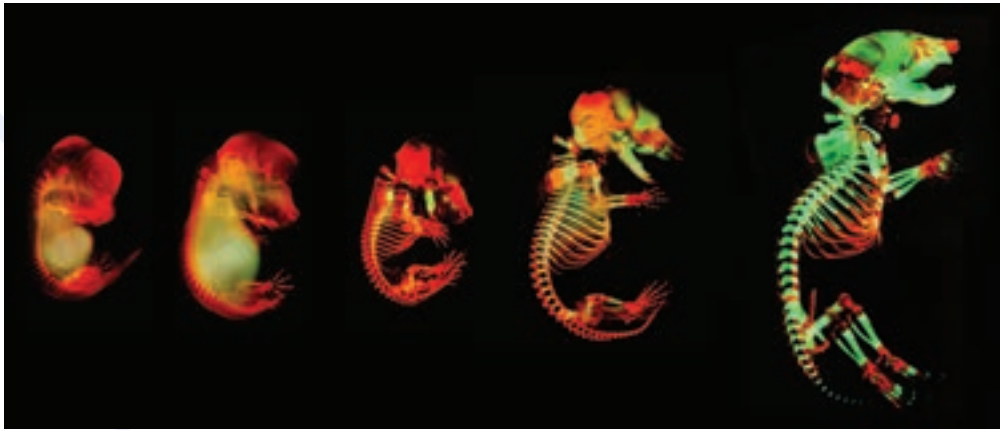
## **Anatomy is everywhere. We are...**

- > Anthropologists studying cultures around the world
- > Paleontologists using cutting-edge technology to discover a world long since passed
- > Inventors creating exoskeletons giving people a new lease on life
- > Archeologists uncovering our history one artifact at a time
- > Biomedical Engineers creating better pacemakers and prosthetics
- > Physical Therapists driving anatomical research to find remedies for their patients' obstacles
- > Veterinarians teaching humans about the different animal species

The American Association of Anatomists has a long history of supporting anatomists in their careers, professional development, and scientific research.



**Winners of 2016 FASEB BioArt Competition**  
Congratulations to member Paul Gignac, and his collaborator Nathan Kley, for his winning video entry through the head of a Macklot's python (left) and to members Paul Trainor and William Munoz, and collaborator, Karla Terrazas, for their image of mice at different developmental stages showing bone (green) and cartilage (red) formation.



# WOW!

# WHERE

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## ABOUT THE AMERICAN ASSOCIATION OF ANATOMISTS

Mission: Advancing anatomical science through research, education, and professional development.

The American Association of Anatomists was founded by Joseph Leidy in Washington, D.C. in 1888 for the "advancement of anatomical science." Today, via research, education, and professional development activities, AAA serves as the professional home for an international community of biomedical researchers and educators focusing on the structural foundation of health and disease.

In 1993, AAA joined the Federation of American Societies for Experimental Biology (FASEB). FASEB is the nation's largest coalition of biomedical researchers, representing 30 scientific societies and over 125,000 researchers from around the world.

# Q&A with AAA's President

**Q: What are you most proud of that the Association accomplished in 2016?**

**A:** I am pleased that the AAA has been courageous in embracing change in order to keep pace with advances in science, education, and society. We have worked hard to become more a more transparent and strategic organization. Although the work of the task forces on nominating procedures, committee structure and bylaws was in the background for most AAA members, the results are evident in increased member participation and influence in the organization. Innovative member-initiated forums have popped up on Anatomy Connected. Transparency in committee scopes and chair selection has facilitated member engagement in areas of interest and expertise. Awards subcommittees have been moved under standing and ad hoc committees, increasing both efficiency and sharing of best practices while recognizing top scholars in anatomical sciences. Changes to the bylaws will allow for engagement of more members in Board and Committee leadership. We have also developed strategies for strengthening relationships with sister organizations, including joint membership dues options and participation agreements of mutual benefit. Three years ago we took a risk with the Innovations

Grants, and a funded “Anatomy for Every Body” outreach program will kick off at the Experimental Biology meeting in April. The AAA Fellows saw great science being stifled by low pay lines in national and international funding agencies, and created the Fellows Grant Award Program for bridge funding projects that were scored but not funded. November saw 100 potential new members in attendance at the regional meeting in New York. And we ended the year with the first State of the Association webinar! As you can see, the AAA has been forward thinking as an organization, nurturing our unique professional family while advancing anatomical science.

**Q: What are you most looking forward to in 2017?**

**A:** I am looking forward to the work of the Diversity and Inclusion Task Force. We have an opportunity to bring the AAA to the next level of member engagement and outreach — an opportunity to broaden the reach of the profession. I perceive the AAA to be a welcoming organization, and if we current members do our jobs, the new member has a professional home for life. Although we have a track record of gender diversity in our leadership, we have been less successful in achieving diversity in

our membership and in our award winners. Moreover, we like many organizations, can do better when it comes to meaningful inclusion, acknowledging and leveraging the value that every person brings to the organization. The Task Force developed a Diversity and Inclusion plan to serve as a guide for the AAA, including a statement of commitment, short and long term goals, and metrics for tracking and reporting progress. The work of the task force will fold into the Strategic Planning effort to begin this summer. I am thrilled to see the AAA move forward in its commitment for a diverse membership and reaching out to support the next generation of leaders in anatomical science and education.

Kimberly Topp, PT, Ph.D., FAAA  
President 2015-2017



# WHY



DID  
YOU  
KNOW

1976 was  
the first year  
AAA included  
poster sessions  
at the annual  
meeting

# 2016 Monthly Timeline

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AAA participates in the Association of Anatomy, Cell Biology, and Neurobiology Chairpersons meeting in Hawaii.

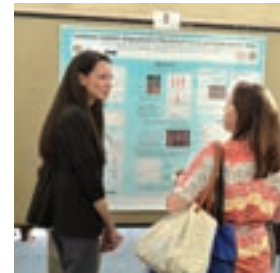
JANUARY



New joint membership launches between AAA and the National Postdoctoral Association.

FEBRUARY

Annual meeting takes place in San Diego, CA, April 2-5; All three journal apps now available on Android devices.



Webinar series launched with first webinar related to mentoring.

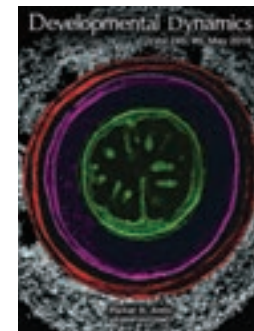


MARCH



New "Women in Anatomy" Interest group launched on Anatomy Connected.

APRIL



*Developmental Dynamics* begins search for new Editor-in-Chief.

MAY

JUNE

Our journal publisher Wiley, Editors-in-Chief of our three journals, and AAA leadership and staff meet at Wiley headquarters for annual Journal strategy meeting.



Rick Sumner represents AAA at the Brazilian Society for Anatomy Meeting in Natal, Brazil.

JULY

AUGUST

SEPTEMBER

OCTOBER

NOVEMBER

DECEMBER

New “Alternative Preservation Techniques Interest Group” launched on Anatomy Connected.



The Fellows Grant Award Program (FGAP) launched providing \$25,000 to researchers for gap funding.

Regional meeting held in New York at Columbia University Medical Center attracts over 140 attendees from five countries and 15 states.



Fellows Grant Award Program chooses three recipients for inaugural class; First ever State of the Association webinar held.

# Numbers

**2,000** Members across **65** countries

**447** New Members

**3** Scholarly Journals

**\$300,000+** in Awards

**41%** are Women

Members primarily work in the following areas:

**56%** in Medical Schools

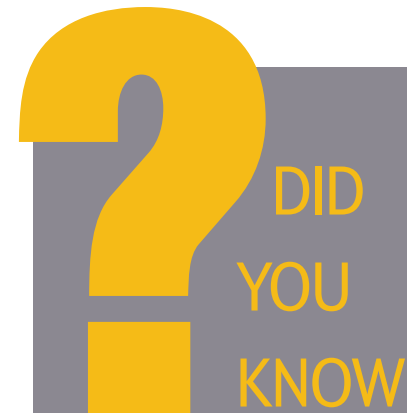
**25%** in a University or College

**6%** in Health or Allied Science Schools

**6%** in Osteopathic Schools

**4%** in Dentistry & Veterinary Schools

**1.4%** in Research Institutions



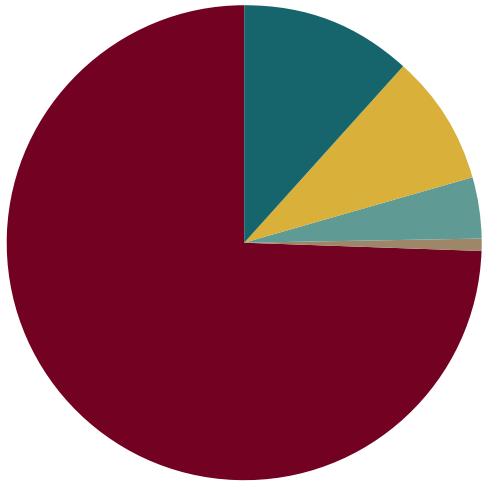
Our journal, *The Anatomical Record*, was launched in 1906



# Financials

AAA remains financially healthy as well as committed to supporting its membership by reinvesting in programs and services that strengthen the Association's mission and strategic goals. These pie charts provide a snapshot of where the Association generates its revenue as well as a breakout of primary expense categories.

## 2016 INCOME



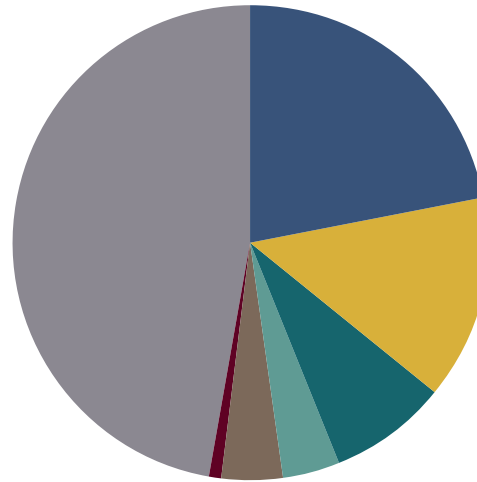
■ 75% Royalties ■ 12% Annual & Regional Meetings  
■ 8% Membership Dues ■ 4% Contributions ■ 1% Advertising

**Royalty Income:** revenue earned from journal subscriptions to *Anatomical Sciences Education*, *Developmental Dynamics*, and *The Anatomical Record*

**Contributions:** revenue received from member donations, meeting and awards sponsorships

**Advertising:** revenue generated from online job postings to the job listings web page

## 2016 EXPENSES



■ 47% General & Administrative ■ 22% Annual & Regional Meetings  
■ 14% Awards ■ 8% Committees & Governance ■ 4% Newsletter & Journals  
■ 4% Member Retention & Development ■ 1% Website

**General and Administrative:** expenses related to accounting and auditing fees; bank and credit card fees; computer and IT service expenses; rent; insurance; office supplies; staff salaries and benefits; payroll and human resources expenses; and consulting fees

# WHAT

## Benefits of Membership

Membership in the American Association of Anatomists is open to students, postdoctoral trainees, faculty, and scientists engaged in teaching or investigation of anatomical or related sciences. Graduate, undergraduate, and medical students are encouraged to join early in their education to gain from the vast network of like-minded individuals in the Association.

Special membership categories exist for emeritus faculty and members associated with either the Human Anatomy and Physiology Society or the National Postdoctoral Association, or for those who may not fit into a current member category, but who work in a related discipline.

### SCHOLARLY JOURNALS

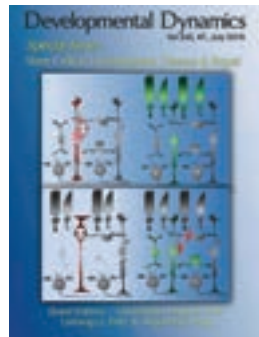
The Association offers three scholarly journals *Anatomical Sciences Education*, *Developmental Dynamics*, and *The Anatomical Record*, published through Wiley. Each offers a different look at the anatomical sciences field and supports the dissemination of high-quality, peer-reviewed research. Grow your own research portfolio by submitting to one of our three journals.

Each offers no page charges or color figure charges, and a fast, fair, friendly, and free review and author support.



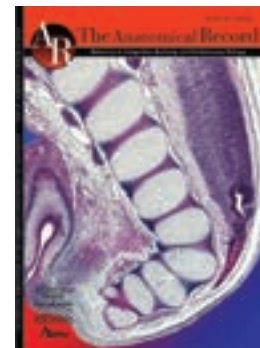
#### **Anatomical Sciences Education**

Editors: Richard L. Drake, Ph.D. and Wojciech Pawlina, M.D.  
81 Published Articles Acceptance Rate: 35%  
Top 2016 Downloaded Article: "Anatomy education for the YouTube generation"



#### **Developmental Dynamics**

Editor: Parker B. Antin, Ph.D.  
118 Published Articles  
Acceptance rate: 47%  
Top 2016 Downloaded Article:  
"CRISPR/Cas9 genome editing in  
human pluripotent stem cells:  
Harnessing human genetics in a dish"



#### **The Anatomical Record**

Editor: Kurt H. Albertine, Ph.D.  
175 Published articles  
Acceptance rate: 64%  
Top 2016 Downloaded Article:  
"Scaling and Accommodation of  
Jaw Adductor Muscles in Canidae"

## ANATOMY CONNECTED

Anatomy Connected is an exclusive value-added online community where members from around the world can post and respond to questions in real time, day or night.

With the ability to reach all the members of the Association, Anatomy Connected is a resource for answers to common questions about teaching, administrative issues, or scientific policy questions. Members have free access to this discussion portal.

## INNOVATIONS PROGRAM

The Innovations Program provides funding to support new scientific, educational, and professional development programs and services developed by AAA's members and/or Committees. As the experts in anatomy, members have the knowledge, creativity, and know-how to create new programs that benefit the Association and the discipline of anatomy.

Programs must relate back to the Association strategic plan and support the mission of the Association in creating new initiatives that help position AAA as a leader and premier source for information in the field of anatomical sciences.

The Innovations Program, launched in 2014, has supported six far-reaching and relevant programs through \$300,000 in funding. These programs benefit the Association and the anatomical science profession as a whole. Submission opens in late spring 2017.

### 2016 Recipients:

#### **Anatomy for Every Body, an Outreach Program**

**Co-Principal Investigators:** Jason Musell, Ph.D., Louisiana State University and Adam Sylvester, Ph.D., Johns Hopkins School of Medicine.

**Amount awarded:** \$50,000

**Overview:** This program seeks to change the perception of the AAA and its members by showcasing the diversity and vibrancy of its constituents using a scalable, innovative, Plug and Play (PnP) Outreach Program, dubbed Anatomy for Every Body that will serve as a model that can be employed in a variety of settings and across scientific disciplines. This iterative program will be driven by feedback from the target audience of late middle school and early high school students from underserved populations, their parents, and their teachers to develop an evidence-based format of effective outreach most successful in educating the public about anatomy, the AAA, and its members.

#### **"I Am Anatomy," Raising Awareness of Transforming Perceptions by Promoting Professional Diversity**

**Submitted by Co-Principal Investigators:** Brent Thompson, Ph.D., Oakland University William Beaumont School of Medicine, Joshua W. Little, D.C., Ph.D. (Co-PI), Saint Louis University School of Medicine; and Christina Lewis, Ph.D. (Co-PI), Samuel Merritt University, on behalf of the Membership Committee.

**Amount awarded:** \$50,000

**Overview:** The overall objective of the "I am Anatomy" campaign is to enhance the awareness of anatomy, promote the professional diversity of the discipline, and transform the perception of anatomy, using multimedia including videos and social media platforms. The common public and professional perception of anatomy is: "anatomists teach gross anatomy." While teaching is an important aspect of many anatomists' careers, this perception is limiting and fails to recognize the full spectrum of the discipline branches, research fields, and scientific interests encompassed by the anatomical sciences. These videos will be promoted via multimedia and social media platforms. Additionally, the team will be creating professionally produced content for use in anatomy outreach activities to promote interest in the field of anatomy by the next generation of scientists.

# #IAmAnatomy

# WHO Outreach Grants

Outreach grants help members spread anatomy throughout their communities—whether to young and school-aged children, or to high school teachers, or members of the general public.

We see anatomy as a science for everyone, and our members are helping to make that a reality in their communities through the U.S. and abroad. In 2016, \$27,540 was awarded in support of outreach grants.

There are two types of outreach grants—Education and Research—and each help to support community and educational based programs, and research meetings, respectively. Awards are available for \$3,000 to support activities related to running the event, purchasing supplies, travel, and anything else that would help make the outreach activity a success.

In the pages that follow, members share their stories related to why they applied for an outreach grant and how they plan to ensure that knowledge of anatomy and anatomy research reaches the masses.

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## Anatomy Education and Outreach in the Republic of Kiribati

Bwarenaba Kautu, Ph.D, Assistant Professor at Greenville College in Illinois was awarded an outreach grant to provide anatomy education outreach in the Republic of Kiribati. The Republic of Kiribati is an island nation in the central Pacific Ocean approximately 1,300 miles south of Hawaii.

Dr. Kautu was the first native born I-Kiribati to receive a Ph.D. from the U.S., and given his career and education in science, he wanted to give back to his home nation. “AAA is the very first scientific organization to support my work in Kiribati and for that I am incredibly thankful.”

“Growing up in Kiribati, I was educated at some of the most impoverished schools on the outer islands. The schools I attended (like many schools in Kiribati) are faced with tremendous challenges due to lack of teaching resources including books, pens, facilities and equipment, teachers, etc. Due to these barriers, many students in Kiribati dropped out of school or failed to advance to the next grade level.”

“This outreach grant enables me to return to Kiribati not only to teach anatomical/physiological sciences to secondary school students, but also use such opportunity to motivate the younger citizens of Kiribati to pursue careers in scientific disciplines. This is important because Kiribati is currently faced with many pressing issues, many of which are related to poverty, diseases, overpopulation, job shortage, economic austerity, and more. I believe that science and technology, as well as educating the population, can help alleviate some of these societal burdens.”

Dr. Kautu stresses that a priority of his work in Kiribati is to encourage younger people to pursue careers in nursing, anatomical and health sciences, biomedical research, and medicine, since having citizens in these fields would be very beneficial to the country.

“In order to achieve this goal it is important that secondary school students are not only gaining early exposure to the scientific study of the human body, but that they are also getting the motivation, support, and the right tools that will help them to better learn the subject and succeed academically. As such, this outreach program is playing an important role in the preparation of future anatomists, nurses, doctors, scientists, and healthcare professionals in one of the remote regions of the world.”





### Ninety-nine Minutes of Neuro: An Educational Outreach Event for West Contra Costa County Health Academy High School Students

Barb Puder, Ph.D., is no stranger to organizing outreach events. As Associate Professor and Chair at Samuel Merritt University in Oakland, CA, she has been putting together events in her area since 2002. “I have a year-round program in which we visit area schools and provide information regarding the brain and brain function in health and disease, but this outreach grant allowed us to stay at our university and host visiting high school students on campus.”

The outreach grant allowed Dr. Puder to provide education workbooks, study materials, supplies for interactive learning stations, t-shirts for student visitors, and breakfast or dinner to the student visitors and teachers.

“It is very beneficial for visiting students to experience science and medicine in its academic setting at the university and expose students to science and medicine.”

Students received a short 30-minute lecture on the brain followed by 11 interactive brain stations including a human gross brain station which allowed students to experience neuroanatomy. Other interactive stations helped to broaden the students’ knowledge regarding neuroanatomical information about neurons, neuroglia, effects of drugs and alcohol on the brain, and the vestibular system, to name a few.

Dr. Puder concluded by sharing some of her thoughts on the importance of events like hers. “Many of our visiting students will be first generation college students, so this experience gave them an opportunity to visit the university and see science in action.”



### Keeping the Weinstein Cardiovascular Development Meeting Affordable for Everyone

Michiko Watanabe, Ph.D., Professor at the Case Western Reserve University, School of Medicine, is a co-organizer of the Weinstein Cardiovascular Development Meeting and wanted a way to keep registration costs low and provide travel support to the meeting.

“We wanted to encourage young scientists to attend our meeting and the AAA outreach grant contribution will help defray travel costs by allowing us to keep registration costs at a minimum and attract attendance of trainees. Compared to previous years, we are fortunate that sponsorship has allowed us to maintain registration costs for trainees at \$250 for the meeting and we hope to provide five travel awards for trainees based on the quality of their abstracts.”

The Weinstein meeting is a premier annual cardiovascular development meeting in the United States and is attended by a large national and international audience. The meeting is being held at the Nationwide Children’s Hospital in Columbus, Ohio in May 2017.

“The field of cardiovascular development relies heavily on the integration of knowledge in different fields, such as anatomy, physiology, and molecular biology. Anatomical sciences play a key role in understanding cardiovascular development because of its 3-D complexity and dynamic nature. Imaging at many levels is essential to investigating this topic. Funds provided by the outreach grant will be acknowledged in printed material, the conference website, and as an introduction to presentations by those individuals supported to travel to this meeting. Many young people will be made aware of the advantages of becoming members of AAA, publishing in our journals, and attending the Experimental Biology meeting because of the generous support of this outreach grant.”



### An Inter-Institutional Collaboration to Advance Medical-Level Anatomy Education

With her outreach grant, Tafline Arbor, Ph.D., Assistant Professor at Marian University College of Osteopathic Medicine supported a workshop to enhance the medical level anatomy instruction between her institution and the Indiana University School of Medicine. The goal was to engage anatomy graduate students and medical students in the field of anatomy education.

“Participants demonstrated evidence-based advances in anatomy education through a variety of exchanges and activities, including presentations, panels, and break-out sessions. Attendees included a total of 29 seasoned medical anatomy faculty, junior anatomy faculty, anatomy graduate students, and medical students,” shared Dr. Arbor.

The workshop hosted over two days (one day at each institution) included discussion between all participants about topics related to teaching anatomy within an integrated and systems-based curriculum, web-based resources and apps in anatomy instruction, the role of ultrasound in enhancing anatomy education, and methods of student peer teaching and team- and problem-based learning techniques.

Overall the workshop was a success and Dr. Arbor felt that “This workshop serves as an example of how inter-institutional collaborations have the potential to benefit faculty and students from participating institutions in the form of expanded educational resources, faculty and student inspiration, broadened professional networks, and new research collaborations.”



### Developing Relationships with Vermont High School Teachers and Students

Sarah McCarthy, Ph.D, is an Assistant Professor at the University of Vermont (UVM). UVM is both the largest post-secondary school in Vermont and the only medical school in the state. Dr. McCarthy knew she wanted to do something to help make Vermont high school students and teachers more aware of anatomy as a discipline. “Many high schools in Vermont do not have the resources to offer anatomy and physiology courses despite the fact that many of their students are interested in biomedical fields. I wanted to offer an opportunity for high school students to see the human body and find mentors in a field of potential interest by pairing high school students with our medical and graduate students.”

Her outreach grant helped support a two-day event that allowed high school teachers and then high school students visit UVM. Teachers met together and with organizers to discuss how they teach anatomy and physiology in their classroom, and allowed the UVM anatomist professors provide them with resources to enhance their educational mission. The high school students then visited with their teachers to view anatomical specimens and meet with medical and graduate students to get advice about their future. The outreach grant provided the budget to purchase lab supplies and lunch for all attendees. “This event will hopefully lead to more frequent visits from high school students to foster a mentoring program between high school students and UVM’s medical and graduate students. We want to continue to build strong working relationships with local high school teachers in the Champlain Valley area of Vermont.”



### Three-year Outreach Grant Brings Together Craniofacial Biology Society and AAA

Supporting research in craniofacial biology was the intent of a three-year research outreach grant awarded to Paul Trainor, Ph.D., Investigator at Stowers Institute for Medical Research. “Craniofacial Biology is a fascinating, diverse, and complex field that has relevance for understanding normal developmental anatomy, evolution and variation, and the etiology and pathogenesis of birth defects,” shared Dr. Trainor. “The outreach funding from AAA supported the poster session at the annual meeting of the Society for Craniofacial Genetics and Developmental Biology (SCGDB) and it also provided three post-docs with first, second, and third place poster travel awards. This helps to foster the participation and career development of young scientists and clinicians with an interest in craniofacial biology.”

In addition to helping fund the SCGDB meeting, this three-year grant is also reciprocal in nature. “At the 2018, 2019, and 2020 AAA annual meetings we will bring leaders in the craniofacial field to participate in AAA and its annual meeting. The thematic synergy and common scientific interests between AAA and the Society for Craniofacial Genetics and Developmental Biology will draw more of the craniofacial anatomy, teaching, and research community into AAA and its annual meetings to further promote research and education in the anatomical sciences.”



### Human Anatomy and Intellectual Discovery— Cadaver Dissection at Santa Fe College

Santa Fe College, a public college in Florida offering two, four, and career and technical degrees, is a recipient of an outreach grant to help them succeed with their Cadaver Dissection Program.

Member Andrew Moss, Lab Manager at Santa Fe College, shared that “The college has a long tradition of educating future health-care professionals using a combination of traditional lectures alongside hands-on laboratory experience. Through the outreach grant, the Cadaver Dissection Program can continue to receive these educational gifts. Along with the cadaver itself, the grant will help pay for the chemical preservation of the body, maintenance of dissection tool inventory, and the equipment needed to safely perform dissection, such as formaldehyde badges.”

Students enrolled in the Anatomy & Physiology course are given the opportunity to methodically dissect the human cadaver over the duration of the year-long course. “Students in these courses are destined for various health care professions including nursing, medicine, medical imaging, and biomedical research. Through this grant we can continue to provide this educational opportunity which ultimately leads to a more competent and respectful team of health care workers.”

# Outreach Grants



### Amazing Anatomy with the Anteaters

While sadly there is no working with any real anteaters, they are instead the mascot of the University of California, Irvine, where member Justin Shaffer, Ph.D., Assistant Teaching Professor at University of California, Irvine will hold his outreach program.

When asked why he was interested in applying for this grant, Dr. Shaffer shared that, “Amazing Anatomy with the Anteaters will help spread anatomical education, including hands-on dissection of animal tissues, to underrepresented and underserved high school students who may otherwise not receive this type of exposure while in high school. Additionally, we hope to spark interest in students to pursue college degrees and professional careers in the anatomical sciences. Our plan is to make this an annual tradition at UC Irvine and expand to include additional schools and students.”

The outreach grant funds will allow Dr. Shaffer and his students to travel and introduce anatomy to local high school students around the Irvine, CA area. The team at UC Irvine will also bring a group of students back to the campus to spend the day working in an anatomy lab and meeting with students and professors.



### Brains

It may be one of the most fascinating parts of our anatomy—the brain. Stephanie Fretham, Ph.D., Assistant Professor at Luther College was awarded an outreach grant for her project titled fittingly, “Brains.”

“One of the great joys of teaching for me is watching students become excited about ideas, and the fastest way I have found to encourage interest and excitement about the brain is to actually see one. By creating an outreach program that allows local elementary students (4th-6th grade) to see a real brain and engage with passionate undergraduate students, I hope both groups of students will learn not just about the brain but also about the importance of curiosity and wonder in science,” shared Dr. Fretham

Funds from the outreach grant will allow Dr. Fretham to purchase plastinated specimens of the human brain, which she otherwise wouldn’t have been able to acquire. Dr. Fretham is working with local teachers in the area (Northeast Iowa) to ensure the program will align with their learning goals, and plans to make this an annual event if all goes well.

# Outreach Grants

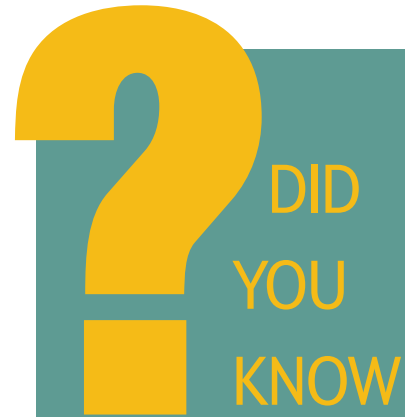




### Supporting the 2nd Fibroblast Growth Factors in Development and Repair Conference

David Ornitz, M.D., Ph.D, Alumni Endowed Professor at Washington University School of Medicine, was the recipient of a research outreach grant. His grant helped support the 2nd Fibroblast Growth Factors in Development and Repair Conference. “The funds from AAA Outreach has helped us to offer travel support to junior faculty and students, allowing them to participate in the meeting which took place in March 2017. Four of the students and postdocs received a \$500 travel award, with funds from AAA, to offset registration costs for the meeting.”

This meeting allows scientists and researchers the chance to present and learn about topics outside of our annual and regional meetings. “This meeting brings together a very diverse group of researchers who study fibroblast growth factor (FGF) signaling and many of the topics covered in this meeting have a direct impact on the anatomical sciences. The topics covered in this meeting include the mechanisms by which FGF signaling governs organogenesis and tissue patterning during embryonic development; the role of FGF signaling in adult tissue homeostasis, repair, regeneration, and angiogenesis; and aberrant FGF signaling in developmental/hereditary diseases including skeletal, cardiovascular, neurological, respiratory, digestive, genitourinary, and endocrine disorders.”



Florence Rena Sabin, M.D.,  
is elected the first woman  
president of the AAA in 1924

# WHO

## Member Spotlights

### POSTDOCTORAL FELLOWSHIP AWARD RECIPIENTS

Postdoctoral Fellowship Award recipients are awarded \$20,000 of salary support to help them pursue postdoctoral fellowship at institutions throughout the U.S. and abroad. The postdoc's laboratory must supplement this stipend with funds that equal or exceed the NIH standard salary support for postdoctoral fellows. Each year, we award up to three postdoctoral fellowships to our members. We highlight three of our most recent recipients.

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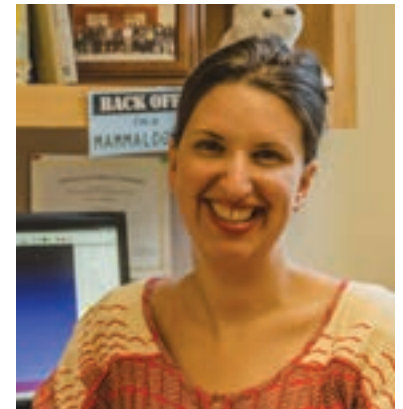
#### Uncovering the Secret of the Mammal Spine

While walking in the Welsh countryside with her family, Dr. Katrina Jones started her life-long interest in anatomy and the fossil record. “My interest in natural history was first sparked as a child when I found fossil invertebrates while out walking in the country with my family. Through my training in both geology and anatomy, I have come to appreciate the key role of the fossil record in answering many important biological questions”

Katrina Jones, Ph.D., grew up in England and completed her undergraduate and master's degrees in Earth Sciences at Cambridge University. She then moved to the U.S. and obtained her Ph.D. in Anatomy at Johns Hopkins University under the mentorship of Professor Ken Rose, Ph.D. She is currently a postdoctoral scholar at Harvard University in the Museum of Comparative Zoology working with Professor Stephanie Pierce, Ph.D., Curator of Vertebrate Paleontology.

The Postdoctoral Fellowship allows Dr. Jones to continue her work in Dr. Pierce's lab. Her work involves shedding light on the evolutionary origins of animals and includes projects to develop new experimental techniques for understanding anatomy and providing vital empirical data about the function anatomy of the mammal spine.

“I'm broadly interested in how mammal locomotor patterns evolved, and particularly what the vertebral column can tell us about locomotor evolution. To understand the origin of mammalian patterns, we must use the fossil record, specifically a group known as the non-mammalian synapsids. These animals record the transition from a more basal amniote, with sprawling posture, to mammals with upright stance and running gaits. We have found variation in both anatomy and regionalization of the vertebral column of non-mammalian synapsids, but the paucity of data linking form and function in the vertebral column makes inferring locomotor function a challenge. This funding will help me to experimentally test the function of the vertebral column in several extant species to improve our understanding of vertebral anatomy in general, and specifically its role in locomotion in the forerunners of mammals.”





### Studying the Causes and Changes in Fertility

Coming from New Zealand to the University of Mississippi may seem like a far journey, but Postdoctoral Fellowship recipient Aleisha Moore, Ph.D., knew it was the right move for her career. Dr. Moore is currently a postdoctoral fellow in the lab of AAA member Michael Lehman, Ph.D.

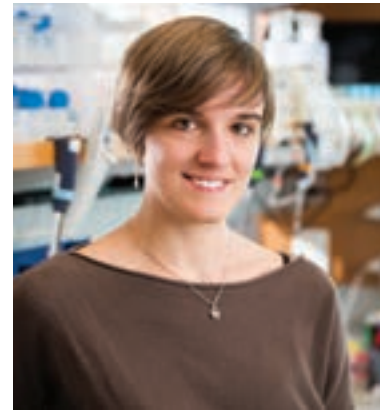
Dr. Moore is studying how KNDy neurons control fertility in multiple animal models and how to identify whether changes in this important population are responsible for the development of polycystic ovary syndrome (PCOS), the most common cause of infertility in women of reproductive age worldwide.

KNDy neurons are a subset of cells that co-express the peptides Kisspeptin, Neurokinin B and Dynorphin and are considered critical for the regulation of gonadotropin-releasing hormone (GnRH) neurons and subsequent fertility.

Dr. Moore received her training in New Zealand at the University of Otago where she earned her Bachelor's and Ph.D. During her Ph.D. training she became fascinated by the completely unusual morphology and function of GnRH neurons and the upstream network that regulates them. "I further learned, despite the critical role of the GnRH neuronal network in fertility, how little we knew about changes in this network that drive infertility. Because of this, I have had a continued interest in defining structural and functional changes in the GnRH neuronal network that drive PCOS."

This fellowship will help Dr. Moore continue her work in Dr. Lehman's lab.

"The fellowship will support my aim to dissect the circuits in the brain controlling fertility by utilizing the most advanced technology available in neuroscience. Importantly, this fellowship also gives me the opportunity to expose my research to the larger anatomical sciences community. This exposure highlights the importance of investigating the neuronal networks controlling fertility in order to create novel therapeutic treatments for fertility disorders. This fellowship provides the first major step in my career within the United States from which I may gain independence as an academic."



### What Snails Can Tell Us about Complex Eyes

Alice Accorsi, Ph.D, is working to better understand the adult camera-type eye in a new experimental model, the *Pomacea canaliculata*, a freshwater snail.

"My long term research interest is to understand the molecular network underpinning

the regeneration of complex eyes. To achieve this goal, I am working on the freshwater snail, *Pomacea canaliculata*, a mollusk with camera eyes that is able to completely regenerate them after amputation of the entire structure."

Dr. Accorsi is currently a postdoctoral fellow at the Stowers Institute for Medical Research. She previously earned her Ph.D., Master's and Bachelor's degree from the University of Modena and Reggio Emilia, in Modena, Italy.

"The Postdoctoral Fellowship will allow me to move forward with my project, and to meet a new group of scientists at the AAA meeting and to network with them in order to obtain new suggestions and opinions. Finalizing my postdoctoral project and creating a good network with researchers in my field will be fundamental for moving my career forward, including when I am looking for a PI position in the future."

Dr. Accorsi was fortunate to travel to the U.S. before her Ph.D. was completed and network with colleagues which ultimately led to her current position. "I became interested in this field back in 2013 when I attended a Marine Biological Laboratory (MBL) Summer course on Embryology. I spent six weeks among incredible researchers discovering new model systems, new protocols, and improving our problem-solving abilities. This experience helped me by defining my interests and the scientific questions I wanted to answer as a postdoc. Alejandro Sanchez, Ph.D, of Stowers was the course director and the next year I was able to visit his lab as a Ph.D. Student. Once I completed my Ph.D., Dr. Sanchez offered me a postdoc position in his lab."

# Meetings

## ANNUAL MEETING AT EXPERIMENTAL BIOLOGY

The annual meeting at Experimental Biology (EB) brings together our members for a chance to present their research and take part in educational and professional development sessions and workshops. EB is a large-scale meeting with scientists and exhibitors representing six host societies and multiple guest societies. With over 1,000 anatomists attending, from 26 countries, and approximately 14,000 total attendees from the six societies, there is always a session to meet your needs.

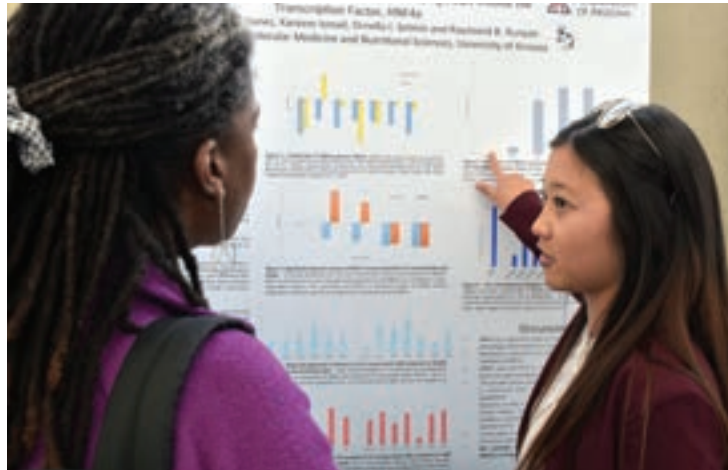
We host our own slate of programming to give our members the opportunity to hear the latest anatomical science research presented. This is the largest event of the Association and the preeminent anatomical science meeting in the United States. Our 2016 program consisted of over 50 sessions, with 65% scientific, 20% education, and 15% professional development topics. Awards and grants are presented each year at the Closing Awards Ceremony.

### Meeting Awards and Grants

A highlight of each year is the Awards Ceremony held on the final day of the meeting. Awards are presented to members for their scientific and service accomplishments.

An elite group of 66 students and postdoctoral trainees competed onsite for poster and platform presentation competition awards. The Committee for Early-Career Anatomists (CECA) judges each presentation and awards prizes of up to \$500. In 2016, 13 competition award winners received \$4,000 in support of their accomplishments.

Attending a major conference can be a monetarily challenging experience for students and those early in their career. To that end, AAA supports students and early-career scientists with monetary travel awards to ease the financial burden of attendance. In 2016, we provided 191 travel awards totaling \$57,200 to students and postdoctoral trainees. In addition, five Young Faculty Travel Awards totaling \$2500, are awarded to young faculty to help defray the cost of attending the meeting.



## REGIONAL MEETING IN NEW YORK

The 2016 Regional meeting was held in New York at the Columbia University Medical Center newly-built Vagelos Education Center for Medical and Graduate Education on November 5, 2016.

The second largest regional meeting in our history, with over 140 attendees from 15 states and five countries brought together a diverse group of faculty, students, clinicians, members, and nonmembers alike.

Our regional meetings offer a more intimate setting for our attendees to network, attend sessions, and take part in hands-on workshops.

### Regional Meeting New York Planning Committee

Paulette Bernd, Ph.D., Co-chair, Columbia University

Joy Reidenberg, Ph.D., Co-chair, Icahn School of Medicine

Emmy Gordon, Ph.D., Rutgers University

Stacy Kinirons, PT, Ph.D., Columbia University

Larry Rizzolo, Ph.D., Yale University



# WHO Awards & Grants

Our award winners hail from various backgrounds, but all have the same thing in common: they've strived to improve themselves, their careers, and the profession of anatomy.

Members supported through Awards and Grants: **264** Total amount awarded: **\$327,092** compared to \$303,039 in 2015

## SCHOLARSHIPS, GRANTS, AND TRAINING OPPORTUNITIES

*A partial list of 2016 Award winners*

### **Education Research Scholarship, Supported by Lippincott Williams Wilkins**

Gaurav Sharma, Ph.D.,  
Harvard Medical School/Brigham & Women's Hospital

### **OUTREACH GRANTS**

#### **Education**

Taflin Arbor, Ph.D., Marian University College of Osteopathic Medicine  
Workshop to Advance Medical-Level Anatomy Education

Stephanie Fretham, Ph.D., Luther College  
Brains

Bwarenaba Kautu, Ph.D., Greenville College  
Anatomy Education Outreach in the Republic of Kiribati

Anna Lysakowski, Ph.D., University of Illinois at Chicago  
Chicago Brain Bee

Sarah McCarthy, Ph.D., University of Vermont School of Medicine  
Developing Relationships with Vermont High School Teachers  
and Students

Andrew Moss, Santa Fe College  
Human Anatomy and Intellectual Discovery

Barb Puder, Ph.D., Samuel Merritt University  
Ninety-Nine minutes of Neuro

Justin Shaffer, Ph.D., University of California, Irvine  
Amazing Anatomy with the Anteaters!

Amanda Wickert, University of Nebraska, Omaha  
Human Anatomy, Physiology, and Pathophysiology for Youth (HAPPY)

Katherine Woronowicz, University of California, San Francisco  
The Bone Lab: An Engaging Avenue For Science Communication

#### **Research Meeting**

David Ornitz, M.D., Ph.D, Washington University in St. Louis  
School of Medicine  
2nd Fibroblast Growth Factors in Development and Repair Conference

William Porter, Ph.D., Ohio University  
Session support at the International Congress of Vertebrate Morphology (ICVM) meeting

Paul Trainor, Ph.D, Stowers Institute for Medical Research  
Society for Craniofacial Genetics and Developmental Biology  
3 Year Meeting Support

Michiko Watanabe, Ph.D., Case Western Reserve University  
Weinstein Cardiovascular Development Meeting

Sam Way-Tay, Ph.D., National University of Singapore  
7th Asia Pacific Congress of Anatomists (7th APICA)

### **Postdoctoral Fellowships**

Alexia Hulin, Ph.D., Cincinnati Children's Hospital Medical Center  
Emily Middleton, Ph.D., University of Missouri  
William Munoz, Ph.D., Stowers Institute for Medical Research

### **Short-term Visiting Scholarships**

Alida Bailleul, Ph.D., University of Missouri  
Rui Diogo, Ph.D., Howard University College of Medicine  
Laura Dyer, Ph.D., Middle Georgia State University  
Neysa Grider-Potter, Arizona State University  
Megan Holmes, Ph.D., Duke University School of Medicine  
Claudia Krebs, M.D., Ph.D., The University of British Columbia  
Kristi Lewton, Ph.D., Boston University  
Heather Kristjanson, Johns Hopkins University

### **Keith and Marion Moore Young Anatomists' Publication Award**

Morgan Churchill, Ph.D., New York Institute of Technology  
"Functional Implications of Variation in Tooth Spacing and Crown Size in Pinnipedimorpha (Mammalia: Carnivora)," *The Anatomical Record*, 298 (5), 878-902

## **SERVICE AND SCIENTIFIC AWARDS**

### **A.J. Ladman Exemplary Service Award supported by Wiley**

Robert D. Specian, Ph.D., Louisiana State University

### **Henry Gray Distinguished Educator Award supported by Elsevier**

Robert Ogilvie, Ph.D., Medical University of South Carolina

### **Henry Gray Scientific Achievement Award supported by Lippincott Williams Wilkins**

John Sladek, Jr., Ph.D., University of Colorado

### **Young Investigator Awards**

*R.R. Bensley Award for Cell Biology*

Andrew Holland, Ph.D., Johns Hopkins University School of Medicine

*Charles Judson Herrick Award for Neuroanatomy*

Hillel Adesnik, Ph.D., University of California, Berkeley

*Morphological Sciences Award*

Casey Holliday, Ph.D., University of Missouri School of Medicine

*Harland Winfield Mossman Developmental Biologists Award*

Michael Jenkins, Ph.D., Case Western Reserve University

### **Basmajian Award**

Peter Ward, Ph.D., West Virginia School of Osteopathic Medicine

### **AAA Fellows**

Rui Diogo, Ph.D., Howard University College of Medicine

John McNulty, Ph.D., Loyola University Medical Center

Robert Ogilvie, Ph.D., Medical University of South Carolina

John Sladek, Jr., Ph.D., University of Colorado

Robert D. Specian, Ph.D., Louisiana State University

# Fellows Grant Award Program

Launched in 2016, the Fellows Grant Award Program (FGAP) supports research proposals submitted to national or international funding agencies that were scored, and generally well received, but did not receive funding. It is assumed that most of these proposals will have been National Institutes of Health (NIH) in nature, but proposals to the National Science Foundation (NSF), other federal agencies, and international granting organizations also qualify.

The Fellows Circle, a task force of members of the elite level of Fellow within the Association, conceived and sustain the FGAP program with funds provided from the Association's Journal Trust Fund investment holdings.

The program will provide short-term funding for either established or young investigators who have submitted a peer reviewed grant application to a major funding sponsor within the last 15 months and received a full review but were not funded. All investigators must be AAA members in good standing for the past 2 years.

Up to three grants will be awarded annually in amounts not to exceed \$25,000. Each grant will be awarded for a period of one year, without opportunity for a no-cost extension. The FGAP will provide up to 30 awards of \$25,000 each over 10 years, totaling up to \$750,000.

The FGAP call for applications will reopen in late summer 2017.

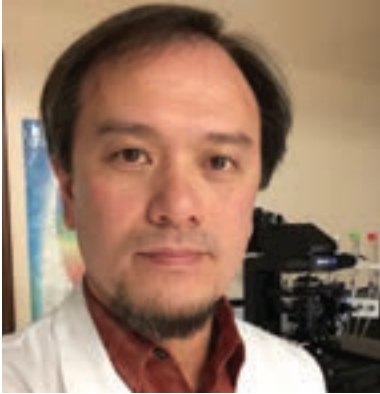
Rebecca S. Hartley, Ph.D., Associate Professor,

University of New Mexico, School of Medicine Award amount: \$25,000

Dr. Hartley's research focuses on inhibiting the formation of tumor-inducing inflammation in breast cancer. This research is conducted at the University of New Mexico on mouse models and FGAP funds will be used to support a graduate student to perform this research.







Anthony Huang, Ph.D., Assistant Professor,  
Southern Illinois University, School of Medicine

Award amount: \$25,000

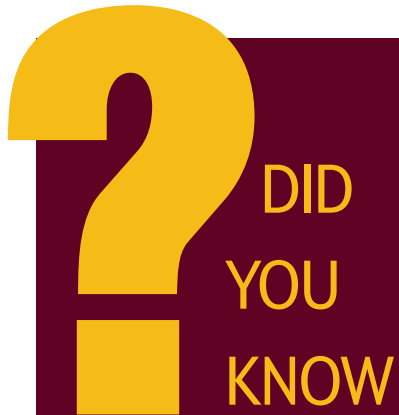
Dr. Huang's research explores the effect of neurotransmitter release on taste receptors to help explain the complex interplay between taste cells and chemosensory neurons. FGAP funds will be used to facilitate the collection of pilot data to strengthen the proposal for future NIH submission.



Johnathan M.G. Perry, Ph.D., Assistant Professor,  
Johns Hopkins University, School of Medicine

Award amount: \$25,000

Dr. Perry's research will entail a paleobiological analysis of fossils from the Santa Cruz Formation in Southern Argentina and relate changes to climate in the mid-Miocene era. Funds will support a field expedition to Argentina for specimen collection.



Herophilos (335-280 BCE), the father of anatomy, was the first scientist to systematically perform scientific dissection of human cadavers

# 2016 Board & Committees

WHO

## 2016 BOARD OF DIRECTORS

The governance of the association resides in the 13 member Board. Board members are elected by the membership and convene twice yearly at the annual meeting at Experimental Biology and at varying locations around the U.S. in the fall.

### **President**

Kimberly Topp, P.T., Ph.D.  
University of California San Francisco

### **President-Elect**

Philip Brauer, Ph.D.  
Creighton University School of Medicine

### **Past President**

Lynne A. Opperman, Ph.D.  
Texas A&M University College of Dentistry

### **Secretary-Treasurer**

Valerie Burke DeLeon, Ph.D.  
University of Florida

### **Program Co-Chair**

Paul Trainor, Ph.D.  
Stowers Institute for Medical Research

### **Program Co-Chair**

Martine Dunnwald, Pharm.D., Ph.D.  
The University of Iowa

### **Directors**

Anna Lysakowski, Ph.D.  
University of Illinois at Chicago

David Morton, Ph.D.  
University of Utah Health Science Center

Jason Organ, Ph.D.  
Indiana University School of Medicine

Rebecca Pratt, Ph.D.  
Michigan State University

A. Wayne Vogl, Ph.D.  
University of British Columbia

### **Student/Postdoctoral Trainee Directors**

Keely Cassidy, Ph.D.  
University of Nebraska

Sonya Van Nuland  
Western University



## COMMITTEES

Committees work on shaping the projects that make up the Association. Through the volunteer effort of committee members the Association brings in new members, coordinates programming for the annual meeting, and manages awards and nomination processes. Information about committees is available at [www.anatomy.org/committees.html](http://www.anatomy.org/committees.html).

### **Committee for Early-Career Anatomists**

*Committee Chair:* Margaret McNulty, Ph.D.  
Indiana University School of Medicine

### **Educational Affairs Committee (EAC)**

*Committee Chair:* Rebecca Lufler, Ph.D.  
Tufts University School of Medicine

### **Journal Trust Fund & Investment Committee (JTFI)**

*Committee Chair:* Bryon Grove, Ph.D.  
University of North Dakota School of Medicine

### **Membership Committee**

*Committee Chair:* Brent Thompson, Ph.D.  
Oakland University William Beaumont School of Medicine

### **Professional Development Committee**

*Committee Chair:* Doug Gould, Ph.D.  
Oakland University William Beaumont School of Medicine

### **Program Committee**

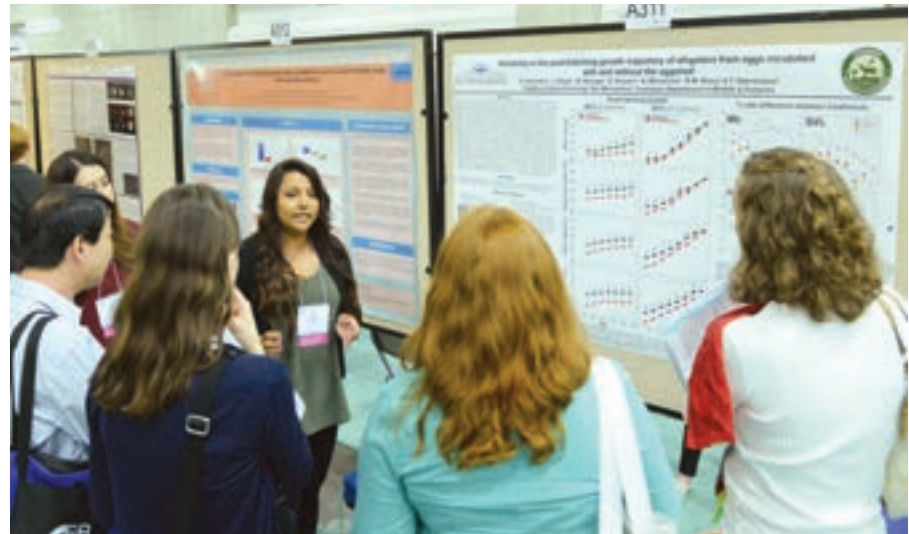
*Committee Co-chairs:*  
Paul Trainor, Ph.D., Stowers Institute for Medical Research  
Martine Dunnwald, Pharm.D, Ph.D., The University of Iowa

### **Publications Committee**

*Committee Chair:* Kathy Svoboda, Ph.D.  
Texas A & M University, College of Dentistry  
*Vice-Chair:* Kem Rogers, Ph.D.  
Western University

### **Scientific Affairs Committee (SAC)**

*Committee Chair:* Scott Miller, Ph.D.  
University of Utah School of Medicine



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