PROCEEDINGS
of the
AMERICAN ASSOCIATION OF ANATOMISTS
ONE HUNDRED EIGHTEENTH MEETING

SAN DIEGO, CA
APRIL 2-6, 2005
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American Association of Anatomists
2005-2006
Term expires after Annual Meeting in year listed.

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AAA Annual Meeting: connect, catch-up, move forward

Make the investment!

Whether you're an established investigator, an assistant prof with an enormous teaching load, or a grad student doing your first experiment, the AAA Annual Meeting offers you an extraordinary opportunity to connect with colleagues and catch up on what's happening in anatomy—both in the lab and in the classroom. By the time you head for home, you'll be glad you invested the time in your career.

The following pages provide a detailed review of the AAA program at EB 2005. Here are some highlights:

- Anatomical Science De Novo Workshop – Saturday, April 2, 8-10 a.m., Room 24AB (see page 20)
- Presley-Zeiss Student Award Session – Saturday, April 2, 3:30–4:30 p.m., Room 24AB (see page 30)
- Langman Student Award Session – Saturday, April 2, 5-6 p.m., Room 24AB (see page 30)
- Young Anatomists’ Career Development Session: How to make yourself more marketable in today’s academic environment – Sunday, April 3, 2:30–4:30 p.m., Room 21
- AAA Socializer – Sunday, April 3, 8-9 p.m., Marriott Bayside Pavilion
- Anatomy Education Roundtables – Monday, April 4, 8-10 a.m., Room 24AB (see page 23)
- Student Poster Reception – Monday, April 4, 7-8 p.m., Room 23 (see page 30)
- Young Experimental Scientists (YES) Mixer: Open to all who are still awake after 9:30 p.m.! Monday, April 4, 9:30 p.m.- midnight, Marriott Marina F/G
- AAA Awards Banquet – Tuesday, April 5, 7-10 p.m., Marriott Marina F/G (order tickets, page 22)
- AAA poster sessions: Hungry for science and popcorn? – Sunday, Monday, Tuesday, April 3-5 (see page 30)
- Career Resources Center/Placement Service – workshops and résumé critiques, free throughout meeting (see page 17)

Special Lectures

KEYNOTE SPEAKER
Sunday, April 3, 6-7 p.m., Room 22
Betty Pace – University of Texas at Dallas
Sickle Cell Disease: The Promising Path to a Universal Cure
Supported by JEOL USA, Inc. through the Association of Anatomy, Cell Biology and Neurobiology Chairpersons (AACBNC)

Organized by Steven R. Goodman, AACBNC President
The discovery of a molecular basis for sickle cell disease by Linus Pauling in 1949 ushered in a new era of molecular medicine. Over half a century later, our pursuit of a gene therapy cure continues. The most promising approach has been fetal hemoglobin induction by drug therapy. Research efforts to ascertain the molecular mechanisms for drug-mediated gamma gene activation provided the impetus for an expanded focus in the field of globin gene regulation. Several research laboratories, including ours, have identified key DNA regulatory elements and transcription factors required to produce effective gene-therapy-based strategies to treat sickle cell disease. Being equipped with exciting new research tools in the “human genome era” will speed the process to diversify gene therapy strategies for improved vector delivery systems, alternate approaches such as antisense, or RNA interference molecules. Those who choose to travel the road to cure will share in the prize to be attained in the not to distant future.

Saturday, April 2
STEREOLOGY AS A CRITICAL TOOL IN EXPERIMENTAL MEDICINE
10:30 a.m.-12:30 p.m., Room 22
Chair: Dallas Hyde (Univ. of California, Davis) J.N. Maina (Univ. of the Witwatersrand) C. Plopper (Univ. of California) M. Ochs (Univ. of Goettingen) D.M. Hyde (Univ. of California) K.H. Albertine (Univ. of Utah)

Sunday, April 3
DEVELOPMENT OF SENSORY SYSTEMS
8-10 a.m., Room 23
Chair: Kathryn Moore (Univ. of Utah) K.B. Moore (Univ. of Utah)

J.M. Fadool (Florida State Univ.) B. Perkins (Texas A&M Univ.) C-F. Chuang (The Rockefeller Univ.) B. Ye (Univ. of California, San Francisco) J. Holzschuh (Univ. of Freiburg) G. Duester (Burnham Institute) D.A. Feldheim (Univ. of California, Santa Cruz)

STEM CELLS
8-10 a.m., Room 24C
Chair: Gina Schatteman (Univ. of Iowa) M.B. Grant (Univ. of Florida) G.C. Gurtner (New York Univ. School of Medicine) M. Dunnwald (Univ. of Iowa) J. Lough (Medical College of Wisconsin) E. Careaga (Robert Wood Johnson Medical School of Medicine) J.R. Sladek
Maintaining Clean Cells
Lysosomes and Aging: The Importance of Maintaining Clean Cells

Damaged and abnormal proteins accumulate in most cells and tissues with age, and these protein deposits are deleterious to cellular function. Protein accumulation results in part from the failure of the systems that normally take care of their removal. Our studies have focused primarily in one of these removal systems, chaperone-mediated autophagy (CMA), which mediates selective targeting of cytosolic proteins to lysosomes for their degradation. CMA is active in most cell types in mammalians, but its activity varies from cell type to cell type and also depending on cellular conditions. Maximal activation of CMA is attained during stresses such as nutritional stress, mild-oxidative stress or toxin exposure. Degradation via this pathway requires the presence of a targeting motif in the substrate protein, a set of cytosolic and lysosomal chaperones and a receptor protein at the lysosomal membrane. CMA activity declines with age and in some age-related pathologies such as familial forms of Parkinson’s disease. Blockage of CMA in culture cells diminishes their ability to adapt to most types of stresses and promotes formation of protein aggregates. Using this model, we have also learned about the cross-talk among different removal systems, since in response to diminished CMA activity, cells activate other forms of autophagy that contribute to compensate temporarily for CMA failure. However, replacement of the highly selective CMA with these less selective mechanisms has detrimental consequences for cell functioning. We have identified the reason for the decline in CMA function with age as a decrease in the levels of the lysosomal receptor that mediates substrate translocation. Our group is currently developing different approaches aimed to restore normal CMA activity in old rodents. These models would help us evaluate the importance of maintaining proper protein removal until advanced ages.
Workshops

ANATOMICAL SCIENCES DE NOVO WORKSHOP  
Saturday, April 2, 8-10 a.m., Room 24AB  
Chair: Andrew Payer (Florida State Univ.)

Workshop leaders will guide small teams of participants in collaborating to build an ideal new medical school anatomical sciences curriculum from scratch, without limitations in funding and resources. The workshop will provide an opportunity for participants to share their knowledge and diverse experiences in a forum that focuses more on building new bridges than on decrying old roadblocks. Discussion will continue at AAA’s Anatomy Education Breakfast Roundtables.

Workshop Leaders:
Jeffrey Laitman (Mount Sinai School of Medicine)  
Douglas Paulsen (Morehouse School of Medicine)  
Andrew Payer (Florida State Univ.)  
William Ovalle (Univ. of British Columbia)

IN VIVO IMAGING OF DEVELOPMENT: (BIO)MOVIE STARS - PUTTING CELLS IN THE SPOTLIGHT  
Saturday, April 2, 3:30-6 p.m., Room 22  
Chair: Paul Kulesa (Stowers Institute for Medical Research)

Constant advances in imaging technology are offering unique access to in vivo events in embryogenesis. Many methods now allow much more than a peripheral view of mutant phenotypes, focusing in on cellular and subcellular phenomena with the hope of gaining insights into molecular mechanisms involved in sculpting morphogenesis. Speakers will present a wide range of imaging modalities, from (rapid) confocal and multiphoton, multispectral imaging, to magnetic resonance and ultrasound biomicroscopy. The methods are innovatively adapted to the study of cardiovascular and craniofacial diseases, cell communication, and cancer. Featured topics include: studies of abnormal hemodynamics in mice with cardiac defects, how mechanical forces influence endothelial cells, manganese-enhanced MR imaging of mouse brain development, photoactivatable GFP as a single cell marker in live embryos, and analyzing cellular dynamics in avians and Drosophila.

Dan Kiehart (Duke Univ.)  
Imaging Drosophila Development

Paul Kulesa (Stowers Institute for Medical Research)  
Imaging Chick Neural Development

Dan Turnbull (New York Univ. School of Medicine)  
Imaging Mouse Development

Mary Dickinson (California Institute of Technology)  
Imaging Mouse Cardiovascular Development

MOLECULAR IMAGING IN LIVING ANIMALS  
Saturday, April 2, 12:30-3 p.m., Room 22  
Chair: Qian Chen (Rhode Island Hospital)

The field of biological imaging is rapidly progressing. In vivo molecular imaging combines molecular/cell biology and chemistry/imaging technologies, and provides visualization of biological processes in space and time in a noninvasive manner. It reveals in vivo biological information, including gene expression patterns, enzyme activities, mutant phenotypes, protein subcellular localization and trafficking, and tissue pathogenesis. This workshop will discuss the usage, prospect, and challenge of this state-of-the-art technology. Featured topics will include: in vivo imaging of enzyme activities, including extracellular matrix metalloproteinases; in toto imaging of embryonic development with emphasis on image analysis and informatics; in vivo imaging of gene expression in transgenic animals using reporter genes such as green fluorescent protein (GFP) and firefly luciferase; and imaging approaches to studying animal models of diseases, including cancer and other metabolic diseases.

Ching-Hsuan Tung (Harvard Medical School)  
In Vivo Imaging of Enzymes

Sean Megason (California Institute of Technology)  
In Toto Imaging of Development

Michael Dustin (New York Univ.)  
In Vivo Imaging Approaches in Animal Models of Disease

Jian Q. Feng (Univ. of Missouri, Kansas City)  
In Vivo Imaging of Gene Expression

GROWTH & DEVELOPMENT  
10:30 a.m.-12:30 p.m., Room 22  
Chair: Kerby Oberg (Loma Linda Univ.)  
C.M. Krane (Univ. of Dayton)  
T.J. Mauch (Univ. of Utah)  
K.M. McHugh (Columbus Children’s Research Institute)  
S. Vadivelu (Univ. of Arizona)  
J.P. Hierck (Leiden Univ. Medical Center)  
G.F. Sfruzzza (Florida Atlantic Univ.)  
D.E. Clouthier (Univ. of Utah)  
N.A. Granger (Univ. of North Carolina, Chapel Hill)

B. Singh (Univ. of Saskatchewan)  
C.M. Eckel (Univ. of Utah)
Mini-Meeting

Development of Sensory Systems

Chairs: Chi-Bin Chien (Univ. of Utah) & Monica Vetter (Univ. of Utah)

Co-sponsored by Developmental Dynamics
Supported by an educational grant from the March of Dimes

This 2-day mini-meeting will bring together investigators working on different sensory systems in both vertebrates and invertebrates, in order to highlight related mechanisms governing their development. The symposia will span multiple stages in the development of these sensory systems, ranging from early induction and patterning to axon pathfinding and synaptogenesis.

Sunday, April 3

REGIONAL IDENTITY & INDUCTION OF SENSORY SYSTEMS
10:30 a.m.-12:30 p.m., Room 23
Linda Barlow (Univ. of Colorado Health Sciences Center)
Development of Taste Buds
Suzanne Mansour (Univ. of Utah)
Development of the Ear
Ilaria Rebay (Massachusetts Institute of Technology)
Development of the Fly Eye
John Rubenstein (Univ. of California, San Francisco)
Development of Olfactory Bulb

NEUROGENESIS IN SENSORY SYSTEMS
2:30-4:30 p.m., Room 23
Qiufu Ma (Harvard Medical School)
Specification of DRGs
Jim Posakony (Univ. of California, San Diego)
Development of Fly Mechanoreceptors
David Raible (Univ. of Washington)
Development of Cranial Ganglia
Monica Vetter (Univ. of Utah)
Fate Specification in the Vertebrate Retina

Monday, April 4

AXON GUIDANCE & SYNAPTOGENESIS IN SENSORY DEVELOPMENT
8-10 a.m., Room 23
Chi-Bin Chien (Univ. of Utah)
Retinal Axon Pathfinding
Tom Clandinin (Stanford Univ.)
Target Recognition in the Fly Visual System
Peter Mombaerts (Rockefeller Univ.)
Olfactory Axon Pathfinding
Stephen Smith (Stanford Univ.)
Synaptogenesis in the Retinotectal System

CELL MIGRATION & POLARITY DURING SENSORY DEVELOPMENT
10:30 a.m.-12:30 p.m., Room 23
Fen-Biao Gao (Univ. of California, San Francisco)
Drosophila Dendritic Development
Matt Kelley (NIDCD)
Planar Polarity in Ear Development
Jarema Malicki (Harvard/MEEI)
Development of Retinal Lamination
Tatjana Piotrowski (Univ. of Utah)
Migration in the Lateral Line

Education & Teaching Track

Saturday, April 2

ANATOMICAL SCIENCES DE NOVO WORKSHOP
8-10 a.m., Room 24AB
(See Workshops, page 20.)

INTEGRATIVE MASTER CLASS: CARDIOVASCULAR SYSTEM
12:30-3 p.m., Room 24AB
Chair: David Bolender (Medical College of Wisconsin)
Restructuring of anatomy departments, the shortage of “classically-trained” anatomists, a reduction in the number of hours dedicated to anatomical instruction, and an ever-increasing...
demand for integration of clinical information are part of the changing environment in which anatomy faculty find themselves. This symposium is the second in a series designed to provide opportunities for experienced anatomists, non-classically trained anatomists, and clinicians to refresh and improve their integrative knowledge of specific anatomical regions or systems. Featured topics include focused reviews of the anatomy and histology of the heart and blood vessels emphasizing surface landmarks and imaging; a synopsis of the critical phases in the formation of the heart, focusing on the clinical implications of common cardiac malformations; and key concepts in vascular biology. The symposium will conclude with a presentation of case-based cardiovascular problems that integrate the anatomical sciences into their solutions.

Gary Kolesari (Medical College of Wisconsin)
Anatomy & Histology of the Cardiovascular System

Dave Bolender (Medical College of Wisconsin)
Development of the Heart

Robert Tomanek (Univ. of Iowa)
Vascular Biology in the Curiculum

Anne Gilroy (Univ. of Massachusetts Medical Center)
Clinical Anatomy of the Cardiovascular System

Sunday, April 3

CSI SAN DIEGO: APPLIED ANATOMY IN PHYSICAL & FORENSIC ANTHROPOLOGY
8-10 a.m., Room 24AB

Chair: Gregory Buck (Texas A&M Univ., Corpus Christi)

This timely session promises to yield much information on how anatomy can be applied to forensic work and how the reality of anatomy applications differs from the popular images seen on network programs. David Glassman will discuss how skeletal anatomy can be used in identification of humans. Mark Teaford will talk about possible job opportunities in physical anthropology and forensics. Harrell Gill-King will describe how visual human anatomy can be used in forensic anthropology.

David Glassman (Univ. of Southern Indiana)
Skeletal Anatomy in Human Identification

Mark Teaford (Johns Hopkins School of Medicine)
Is the Grass Always Greener? Job Opportunities in Physical Anthropology & Forensics

Harrell Gill-King (Univ. of North Texas)
Applications of Human Anatomy in Forensic Anthropology: A Visual Survey

REFRESHER COURSE: ENVIRONMENTAL TOXICANTS & BIRTH DEFECTS
10:30 a.m.-12:30 p.m., Room 24AB

Chair: Suzette Chopin (Texas A&M Univ., Corpus Christi)

Although birth defects result from genetic, environmental, and unknown causes, it is frequently difficult to characterize the precise etiology. Genetic factors have been identified in 11% of birth defects, and environmental causes have been implicated in 7-10%. The remaining proportion is ascribed to unknown causes, which may include an environmental agent acting on a susceptible genome or a susceptible genome being acted upon by toxicant under certain nutritional conditions. Asciring teratogenicity to an environmental toxicant is difficult because exposure must be correlated with dose, route of exposure, and time of exposure. These correlations help determine the mechanism of action of a teratogen, which may act on cells directly or indirectly through cell signaling. In addition to the etiology and mechanisms of birth defects, the speakers will discuss folic acid responsive neural tube defects and life style factors such as alcohol, smoking, and illicit drugs.

Robert Brent (Jefferson Medical College)
The Five Principles of Teratology

Lynda Fawcett (Jefferson Medical College)
Mechanisms of Teratology

Richard Finnell (Texas A&M Univ.)
Genetic Basis of Susceptibility to Environmentally Induced Birth Defects

T.V.N. Persaud (Univ. of Manitoba)
Drugs, Alcohol & Cigarette Smoking

Monday, April 4

ANATOMY EDUCATION BREAKFAST ROUNDTABLES
8-10 a.m., Room 24AB

Supported by an educational grant from Elsevier Science, USA.
ENDANGERED SPECIES: WHO WILL TEACH ANATOMY IN 2010?
10:30 a.m.-12:30 p.m., Room 24AB
Chair: Kurt Albertine & Christine Eckel (Univ. of Utah)
Co-sponsored by the American Association of Clinical Anatomists

Teachers of histology, embryology, gross anatomy, and neuroanatomy ("the anatomies") at U.S. medical schools are, for the most part, from the baby boomer generation and are approaching retirement age. How many will be retiring? Who will replace them? Are their replacements being trained to teach? Will their replacements receive credit for teaching as part of their faculty evaluation for promotion and tenure? These questions will be addressed by a group of invited speakers. Context will be provided by reporting the latest manpower survey conducted by AAA. A dean’s perspective will be offered on the importance of teaching to the mission of medical schools and approaches to recruit and retain teachers. Others will address issues about graduate training (medical anatomy, anthropology), teaching expertise (histology, embryology, gross anatomy, neuroanatomy), and teaching location (U.S., non-U.S. [Africa]).

Nirusha Lachman (Durban Institute of Technology, South Africa)
Perspectives on the Evolution of the Anatomist

Darrell Kirch (Penn State College of Medicine)
A Dean’s Perspective on the Faculty: Where are the Teachers of the Future?

Kurt Albertine (Univ. of Utah)
Training Programs for Preparing Teacher-Scholars of Anatomy

Valerie O’Loughlin (Indiana Univ.)
Biological Anthropologists: Tomorrow’s Anatomy Educators?

Robert McCuskey (Univ. of Arizona College of Medicine)
Availability of Trained Anatomists Now and in the Future

Tuesday, April 4

BASIC & CLINICAL CONCEPT INTEGRATION IN HISTOLOGY
10:30 a.m.-12:30 p.m., Room 24AB
Chair: Doug Paulsen (Morehouse School of Medicine)

Histology comprises a highly integrative corpus of biomedical information traditionally taught in a small, but separate, course. Because its topical boundaries are somewhat blurry, covering physiologic and pathologic concepts to reinforce microscopic structure, histology has lent itself well to integration. Many integrative approaches have been used, but discussions of their strengths and weaknesses have taken place mainly within the institutions where they occur. This symposium provides a broader forum for discussing integrative principles and lessons learned. Topics covered include: integration with other anatomic sciences and physiology within the first year medical curriculum; histology’s role in problem-based learning; pathology concepts appropriate for introduction and concept reinforcement in histology; and the role of clinicians in histology teaching. The presentations will be followed by an open forum in which the audience can further explore the issues raised and share their own experiences.

Doug Paulsen (Morehouse School of Medicine)
Human Morphology: Integrating Histology, Gross Anatomy, and Embryology in a Single Course

C. Darrell Jennings (Univ. of Kentucky)
Pathologic Structure Function Relationships in Histology Education

John Hansen (Univ. of Rochester School of Medicine)
Student-centered Learning: Integrated Approach to Human Structure-function Relationships

Wojciech Pawlina (Mayo Clinic and Medical School)
Approaches to Integrating Clinical Faculty in the Teaching of Histology

ANATOMY EDUCATION: TEACH NOW OR PAY LATER
2:30-4:30 p.m., Room 24AB
Chair: Richard Drake (Cleveland Clinic Lerner College of Medicine)
Co-sponsored by the American Association of Clinical Anatomists

Anatomy education must continue its evolution! With reduced hours, it’s futile to try and “cover it all” in the first year. The future resides in ‘Integrating anatomy throughout the curriculum’ and beyond. Not moving in this direction will lead to the use of residency anatomy courses as remediation or, worse, the final two words in the title of this symposium. Speakers will discuss: 1) a new first year case-directed approach to anatomy education that is the initial step in a comprehensive longitudinal anatomy curriculum, 2) the combined efforts of anatomists and clinicians to plan and implement an anatomy curriculum that is educationally sound and relevant, and 3) the role of learners and their institutions in providing a broader forum for discussing integrative principles and lessons learned. The audience can further explore the issues raised and share their own experiences.

Sunday, April 3

Membership Committee Meeting
7:30-9:30 a.m., MH Cardiff Room

Terminology Committee Meeting
12-1:30 p.m., MH Carlsbad Room

Educational Affairs Committee Meeting
12:30-3 p.m., MH Cardiff Room

AACBNC Socializer
5:30-7:30 p.m., MH Cardiff Room

Anatomical Record Editorial Board Meeting
7-9 p.m., MH Point Loma

AAA ANNUAL MEETING/EB 2005 APRIL 2–6 SAN DIEGO

COMMITTEES/BUSINESS MEETINGS/SOCIAL EVENTS

AAA business meetings, poster sessions, and socializers are open to all members. Unless otherwise noted, all other meetings are by invitation only. CC=Convention Center, MH=Marriott Hotel.
programs that stress relevant information focused on the needs of the audience. Each of these programs prepares the student for and fosters life-long learning of anatomy.

Richard Drake (Cleveland Clinic Lerner College of Medicine)
Case-Directed Anatomy: A New Beginning

Lawrence Rizzolo (Yale Univ. School of Medicine)
Preparing Students for a Career of Learning: Use of Highly Interactive Computer Design to Integrate Clinical Cases with Anatomical Dissection

Anne Gilroy (Univ. of Massachusetts)
A Longitudinal Program in Clinical Anatomy

Symposia

Speakers for these sessions are invited by the symposia chairs.

Saturday, April 3

ANATOMICAL SCIENCES DE NOVO WORKSHOP
8-10 a.m., Room 24AB
(See Workshops, page 20.)

INTEGRATIVE MASTER CLASS: CARDIOVASCULAR SYSTEM
12:30-3 p.m., Room 24AB
(See Education & Teaching Track, page 21.)

MOLECULAR IMAGING IN LIVING ANIMALS
12:30-3 p.m., Room 22
(See Workshops, page 20.)

IN VIVO IMAGING OF DEVELOPMENT
3:30-6 p.m., Room 22
(See Workshops, page 20.)

Sunday, April 3

CSI SAN DIEGO: APPLIED ANATOMY IN PHYSICAL & FORENSIC ANTHROPOLOGY
8-10 a.m., Room 24AB
(See Education & Teaching Track, page 23.)

ROLE OF MECHANICAL FACTORS IN VASCULAR GROWTH & REMODELING
8-10 a.m., Room 22

Co-chairs: Robert Tomanek (Univ. of Iowa) & Lily Francis (Univ. of Utah)

Mechanical factors (e.g., shear stress, stretch, and pressure) constitute primary stimuli for angiogenesis and remodeling. New insights reveal important interactions between various vascular cells and the extracellular matrix. This symposium will address the events that evoke cellular and extracellular responses and lead to the activation of signaling molecules that facilitate angiogenesis and vascular remodeling. Speakers will address growth factors and signaling events, integrins, arteriolar and artery remodeling, and the vascular responses in heart and skeletal muscle.

Gerald Meininger (Texas A&M Univ.)
Integrins-Extracellular Matrix & Mechanical Factors Related to Arterial Remodeling

B. Lowell Langille (Toronto General Hospital)
Arterial Remodeling in Three Dimensions: The Integration of Responses to Multiple Physical Forces

Wei Zheng (Univ. of Iowa)
Stretch-induced Growth Factor Activation in the Coronary & Vasculature

Margaret D. Brown (Univ. of Birmingham Medical School)
Capillary Growth in Skeletal Muscle Induced by Physical Forces

DISSECTING THE BIOLOGICAL CLOCK
10:30 a.m.-12:30 p.m., Room 24C
Chair: James West (Texas A&M Univ.)

Chairpersons’ Symposium

In animals, a variety of biological processes, such as gene transcription or translation, hormone production, and sleep-wake behavior, undergo circadian or 24-hour fluctuations. The generation of these circadian rhythms and their synchronization to light-dark cycles are mediated by an internal biological clock located in the brain. Compromise of circadian clock function in maintaining temporal coordination of internal processes with each other and with the daily light-dark cycle is thought to impact on human health and performance. Speakers will discuss recent advances that have unveiled elements of the molecular clockworks in animals. Specific topics include: links between the avian clock mechanism and neuroendocrine outputs, vulnerabil-
A Human Genetic Approach to Circadian Behavior

Aging Effects on Epidermal Stem Cells

Recent advances in stem cell biology show that diverse organs harbor stem cells, termed adult stem cells. The skin is the largest organ of the body. It turns over at a rapid rate and is thus dependent on the continued presence of stem cells. The speakers will discuss characteristics of various types of multipotent stem cells in the epidermis. This includes the plasticity of epidermal stem cells and how progressive age affects their characteristics, the ability of single stem cells to give rise to a new hair plus epidermis, the migration of epidermal stem cells in the hair follicle during the hair cycle, gene profiling of stem cells in the epidermis, the migration of epidermal stem cells in the hair follicle, and the novel observation of neural crest stem cells in the epidermis of the adult hair follicle.

Jackie R. Bickenbach (Univ. of Iowa)
Aging Effects on Epidermal Stem Cells

Ariane Rochat (École Polytechnique Fédérale de Lausanne, Switzerland) Hair Follicle Morphogenesis from Single Multipotent Stem Cells

Grigori Enikolopov (Cold Spring Harbor Laboratory) Neural Potential of Stem Cells in the Hair Follicle

Maya Sieber-Blum (Medical College of Wisconsin) Neural Crest Stem Cells in the Adult Hair Follicle

CONTRACTILE MACHINERY: STRUCTURE, FUNCTION & REMODELING

2:30-4:30 p.m., Room 22

Co-chairs: Carol Gregorio (Univ. of Arizona) & Patrick Nahirney (NIH, NIAMS)

Just over 50 years ago, the sliding filament model was proposed to explain the mechanisms responsible for striated muscle contraction. Since then, the field has made tremendous strides in our knowledge of how actomyosin interactions lead to efficient contractile activity. However, a plethora of unanswered questions remain concerning muscle function. This session focuses on current investigations providing novel insights into the mechanisms governing striated muscle function: 1) establishment of the giant muscle proteins (e.g., nebulin) as critical components of the contractile apparatus; 2) identification of molecules (e.g., Muscle-LIM proteins) responsible for directly linking myofibrillar biomechanical signals to the regulation of muscle gene expression; 3) establishment of the structural dynamics of actomyosin during filament sliding by single-molecule mechanics; and 4) current approaches to genetically engineer the sarcomere by gene transfer.

Abigail McElhinny (Univ. of Arizona)
Deciphering the Function of the Nebulous Giant in Striated Muscle

Joseph Metzger (Univ. of Michigan)
Acute Genetic Engineering of the Sarcomere by Gene Transfer

Yale Goldman (Univ. of Pennsylvania)
Dynamics of Actomyosin by Single-molecule Mechanics & Fluorescence

Mary Beckerle (Univ. of Utah)
Roles of LIM Proteins in Muscle

Monday, April 3

ANATOMY EDUCATION BREAKFAST ROUNDTABLES

8-10 a.m., Room 24AB

See Education & Teaching Track, page 23.

SYSTEMS MORPHOGENETICS: PUTTING GENE FUNCTION INTO CONTEXT

8-10 a.m., Room 24C

Chair: Keith Cheng (Penn State College of Medicine)

One of the most exciting challenges in biology in the post-genomic era is the possibility of providing comprehensive biological context for gene function. Genes are being characterized by function through the generation of mutants across multiple model organisms. Normal and abnormal patterns of gene expression and function are also being probed using immunological, reverse genetic, large-scale genomic, and bioinformatic methodologies. Additional contextual data that require integration include the anatomic, developmental, life-span, physiological, and behavioral. The speakers will use examples from the zebrafish, mouse, plant, and neurobiological arenas to address the issue of providing biological context for these types of data with respect to space, time, and function. Solutions and goals for dynamic, web-based solutions to these issues will be discussed.
Keith Cheng (Penn State College of Medicine)
*Systems Morphogenetics: Providing Biological Context for Gene Function*

Jonathan Bard (University of Edinburgh)
*Anatomics: Integrating Anatomy with Molecular & Other Bioinformatics Resources*

Hong Ma (Penn State College of Medicine)
*Potential Contributions of Systems Morphogenetics to Plant Biology*

Mark Ellisman (University of California, San Diego)
*Integrative Roles for Grid Computing in the Life Sciences*

### ENDANGERED SPECIES: WHO WILL TEACH ANATOMY IN 2010?
10:30 a.m.-12:30 p.m., Room 24AB
(See Education & Teaching Track, page 24.)

#### ANATOMY OF THE NUCLEUS
10:30 a.m.-1 p.m., Room 24C

**Chair:** John Lough (Medical College of Wisconsin)
**Co-sponsored by The Anatomical Record**

The orderly replication and expression of the genome’s up to three billion base pairs of DNA are crucial processes for maintaining normal states of cellular growth and differentiation. How this mass of DNA and its attendant protein are non-randomly packaged within eukaryotic nuclei in a fashion permitting such finely tuned regulation constitutes perhaps the most intriguing question in cell biology today. Six investigators using a variety of state-of-the-art molecular and imaging strategies will address current issues in this field, ranging from how the nuclear envelope/pore complex delimits nuclear contents while permitting selective entry/egress of proteins and RNAs, to how chromatin architecture has evolved to accommodate dynamic and structural changes of gene domains that accompany modulating states of gene expression and repression.

- **Stefan Mueller** (Ludwig Maximilians Universität, Germany)
  *The Third Dimension of Primate Genome Evolution: From Chromosomes to Nuclear Architecture*

- **Douglas Forbes** (Univ. of California at San Diego)
  *The Cell Nucleus: Building the Walls & Gates*

- **Robert Goldman** (Northwestern Univ.)
  *Nuclear Lamins: Major Concepts of Nuclear Anatomy & Function*

- **Jeanne Lawrence** (Univ. of Massachusetts Medical School)
  *Mapping the Interphase Nucleus: Genome Organization in Euchromatic & Heterochromatic Neighborhoods*

- **David Spector** (Cold Spring Harbor Laboratory)
  *The Dynamics of Gene Expression*

- **Jim Holaska** (Johns Hopkins Univ. School of Medicine)
  *Filament Networks & Membrane Proteins: Functional Architectures of the Nuclear Envelope*

### CELLULAR PATHWAYS IN NEURODEGENERATION
2:30-4:30 p.m., Room 23

**Chair:** Joseph Besharse (Medical College of Wisconsin)
**Co-sponsored by The Association for Research in Vision & Ophthalmology**

Analysis of genetic factors in neurodegenerative diseases has identified fundamental cellular pathways underlying pathology. This symposium focuses on well-defined cellular pathways and how their disruption is informative in understanding degenerative disease in photoreceptors and CNS neurons.

- **Joseph Besharse** (Medical College of Wisconsin)
  *Ciliary Trafficking of Phototransduction Components & Photoreceptor Degeneration*

- **Richard Vallee** (Columbia Univ.)
  *Role of Cytoplasmic Dynein in Smooth Brain & Other Neuronal Diseases*

- **Lawrence Goldstein** (Univ. of California, San Diego)
  *Molecular Motor Pathways & Neurodegeneration*

- **Dean Bok** (UCLA School of Medicine)
  *Rescue of Photoreceptors by Virus-vectored Genes in Animal Models of Inherited Human Retinal Disease*

### EMBRYOGENESIS & THE EVOLUTION OF CRANIOFACIAL PATTERNING
2:30-4:30 p.m., Room 22

**Chair:** Pip Francis-West (King’s College, London)

The head is probably one of the most complex and intricate structures of the vertebrate body. This is highlighted by the many distinct, and sometimes subtle, evolutionary adaptations between species and the high frequency in which craniofacial development is perturbed. In the higher vertebrate, craniofacial development also shows a number of unique features when compared with the rest of the body, such as the ability of neural crest cells to give rise to hard tissue structures and the presence of placodes that contribute to the sensory organs. Speakers will discuss tissue and molecular interactions that control patterning and tissue differentiation of the face, highlighting the novelty of craniofacial development and evolutionary differences between marsupial and placental mammals. In addition, new insight into the understanding of human craniofacial syndromes and how they may be treated with stem cell technology will be discussed.

- **Paul Trainor** (Stowers Institute for Medical Research)
  *Neural Crest Cell Plasticity*

- **Kathleen Smith** (Duke Univ.)
  *Craniofacial Patterning & the Evolution of Mammals*

- **Drew Noden** (Cornell Univ.)
  *Head Mesoderm: Victims or Supporters of the Neural Crest*

- **Pip Francis-West** (King’s College, London)
  *Regulation of Cranial Skeletogenesis*
Tuesday, April 4

CELL MATRIX INTERACTION IN WOUND HEALING: THE ROLE OF MYOFIBROBLASTS
8-10 a.m., Room 23

Co-chairs: Kathy Svoboda & Yiyu Fang (Baylor College of Dentistry)

This symposium will bring together specialists in the area of tissue repair with regard to myofibroblast cell biology. The purpose of the symposium is to discuss new information about cell-extracellular matrix interactions, cell migration, myofibroblast differentiation and role in wound healing and scar formation. In addition, the role of signaling proteins will be explored in cell migration, wound healing, actin reorganization, and myofibroblast differentiation. Finally, a paper will be presented that demonstrates myofibroblast differentiation may be inhibited in the presence of nicotine.

Keith Burridge (Univ. of North Carolina)
Signal Transduction Events During Fibroblast Cell Migration

James Tomasek (Univ. of Oklahoma Health Science Center)
Actin Isoform Expression & Function in Myofibroblast-mediated Tissue Remodeling

Sandra Masur (Mount Sinai School of Medicine)
Phenotype Switching Between Fibroblasts & Myofibroblasts During Cornea Wound Healing

Yiyu Fang (Texas A&M Univ.)
Myofibroblast Role in Gingival Wound Healing

NEW APPROACHES TO REGENERATION IN MAMMALS - Henry Gray Award Symposium
8-10 a.m., Room 22

Chair: Bruce Carlson (Univ. of Michigan)
Supported by an educational grant from The University of Michigan, Department of Gerontology

The regeneration of many tissues and organs in mammals has long been viewed as an almost intractable problem, but recent years have seen major advances in this field. New technology and means of analysis have allowed the transference of lessons learned from the study of regeneration in lower vertebrates to mammals. Speakers will discuss the present status of limb, lens, and muscle in this light. A final report will concentrate on the preparation and application of natural biomatrices as scaffolds supporting the regeneration of a variety of mammalian and human tissues.

Ken Muneoka (Tulane Univ.)
Regeneration of Higher Vertebrate Limbs: Developing a Roadmap

Shannon Odelberg (Univ. of Utah)
Regenerative Cellular Plasticity & Its Potential Application in Mammals

Panagiotis Tsonis (Univ. of Dayton)
Induction of Lens Regeneration in Vertebrates

Stephen Badylak (McGowan Institute for Regenerative Medicine)
Xenogeneic Extracellular Matrix as a Bioscaffold for Tissue Reconstruction: Experiences in Humans

BASIC & CLINICAL CONCEPT INTEGRATION IN HISTOLOGY
10:30 a.m.-12:30 p.m., Room 24AB
(See Education & Teaching Track, page 23)

COMPARATIVE ANIMAL MODELS FOR STUDYING BONE & CARTILAGE MORPHOGENESIS & GROWTH
10:30 a.m.-12:30 p.m., Room 24C

Co-chairs: Lynne Opperman (Baylor College of Dentistry) & Richard Peterson (Medical Univ. of South Carolina)
Co-sponsored by the AAA Advisory Committee for Young Anatomists

Different animal models provide specific advantages for studying early development and growth. Some animal models allow access to embryos because they develop outside of the mother, as in chick embryos, and because the embryos are translucent, allowing visualization of developing internal organs, as in zebrafish embryos. Mammalian models have the advantage of sharing closer homology with human embryonic development. Topics in this symposium demonstrate how different animal models have led to fundamental paradigm shifts in our understanding of development of embryonic branchial arch structures and the maxilla, and how genes across species or across strains within species differentially regulate bone and cartilage morphogenesis.

Pamela Yelick (Harvard School of Dental Medicine)
Formation of Zebrafish Branchial Arch Structures

Stefan Judex (SUNY at Stony Brook)
Genetic & Epigenetic Influences on Bone Quantity & Quality

Joy Richman (Univ. of British Columbia)
New Paradigm for the Cellular Origin of the Chick Maxilla

Olena Jacenko (Univ. of Pennsylvania)
Differential Regulation of the Chick Type X Collagen Sequence in Mouse Cartilage

ANATOMY EDUCATION: TEACH NOW OR PAY LATER
2:30-4:30 p.m., Room 24AB
(See Education & Teaching Track, page 24.)

EVOLUTION OF NEUROBIOLOGICAL SPECIALIZATIONS IN MAMMALS
2:30-4:30 p.m., Room 23

Co-chairs: Lori Marino (Emory Univ.) & Patrick Hof (Mt. Sinai School of Medicine)

A comparative-evolutionary approach to neuroscience reveals that different mammal groups have their own distinctive neurobiological specializations that represent responses to specific
evolutionary challenges. By examining these neurobiological capacities, we develop a deeper understanding of the relationship between brain structure, function, and evolution. Speakers will discuss an array of neurobiological specializations in mammals at multiple levels of analysis. Topics include neurochemical specializations in various mammals, motor specializations in primates, sensory specializations in insectivores, and the architecture of large mammalian brains.

**Patrick Hof** (Mt. Sinai School of Medicine)
*Cellular Specialization in the Mammalian Cerebral Cortex: Morphologies & Neurochemical Phenotypes*

**Chet Sherwood** (Kent State Univ.)
*Motor Specializations in Primate Brain Evolution*

**Jon Kaas** (Vanderbilt Univ.)
*Specialization of Sensory and Motor Systems in Primate Brains*

**Leah Krubitzer** (Univ. of California, Davis)
*How to Build Complex Brains*

**DYNAMIC IMAGING OF ECM: CLUES AS TO ITS STRUCTURE & FUNCTION**
2:30-4:30 p.m., Room 24C

**Chair: Brenda Rongish** (Univ. of Kansas Medical Center)

The purpose of the symposium is to convey the dynamic nature of ECM assembly and reorganization that occurs both *in vitro* and *in vivo*. Data presented will help elucidate specific roles for key ECM components in the assembly process in cultured cells and in the embryo. New approaches in cell and embryo culture techniques and hardware and software advances in time-lapse imaging that allow simultaneous observation of cell and ECM motion will be discussed. Use of computational methods relating ECM network assembly to cell motion *in vitro* and ongoing developmental events (segmentation, neurulation) will be presented.

**Andras Czirok** (Univ. of Kansas Medical Center)
*The Dynamics of ECM Assembly in Early Avian Embryos*

**Bette Dzamba** (Univ. of Virginia)
*Assembly of ECM in Xenopus Embryos*

**Jessica Wagenseil** (Washington Univ. School of Medicine)
*Real-time Imaging of Elastic Fiber Assembly*

**Sarah Dallas** (Univ. of Missouri, Kansas City)
*Dynamic Imaging of Matrix Assembly in Osteoblasts*

**INDUCTION & PATTERNING OF THE NEURAL CREST: LESSONS FROM FISH, FROGS & MICE**
2:30-4:30 p.m., Room 22

**Co-chairs: Robert Cornell** (Univ. of Iowa) & **Eliska Krejci** (Charles Univ., Prague)

The neural crest was dubbed the “fourth germ layer” by Brian Hall because of the broad developmental potential of neural crest cells (NCC). Early work in the field focused on evaluating the destination organ of NCC derived from different axial levels of the embryo. In recent years, spurred by the interest in the therapeutic potential of stem cells, for which NCC serve as a model, workers have turned to identifying the genes that direct specification, proliferation, survival, and differentiation of NCC. Speakers in this symposium represent the many genetic techniques and model systems that have been applied to this question, including targeted gene disruption in mouse, forward mutagenesis screens in zebrafish, and molecular methodology in frogs. Presentations will focus on growth factor stimulated pathways and the transcription factors that mediate their effects, in control of neural crest cell fate. In addition, the way that normal developmental pathways are co-opted in cancerous cellular transformation will be explored.

**Trevor Williams** (Univ. of Colorado Health Sciences)
*Analysis of the Mouse AP-2 Genes: From Ectoderm to Neural Crest*

**Carole LaBonne** (Northwestern Univ.)
*The Crossroads of Development & Cancer: A View from the Crest*

**David Raible** (Univ. of Washington)
*Neural Crest Cell Fate Specification in Zebrafish*

**Robert Cornell** (Univ. of Iowa)
*Multiple Roles for AP-2 Family Members in Zebrafish Neural Crest Development*

**Thanks, Thanks, Thanks!!**

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- Aperio Technologies, Inc.
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- VisualSonics, Inc.
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AAA ANNUAL MEETING/EB 2005 APRIL 2–6 SAN DIEGO

Student Award Platform Sessions

Saturday, April 2

**PRESLEY-ZEISS POSTDOC AWARD PRESENTATIONS**
3:30 – 4:30 p.m., Room 24AB

**Karen Lunde** (Univ. of Freiburg)
*Overexpression of Dominant Activator and Repressor Variants of Maternally and Zygotically Expressed Zebrafish pou5f1/pou2, Homolog of Mammalian Oct4, Affects Dorsoventral Patterning*

**Bing Ye** (Univ. of California, San Francisco)
*Genetic Analysis of the Differential Development of Dendrite and Axon in Drosophila Peripheral Neurons*

**Evan Zamir** (Univ. of Kansas Medical Center)
*Image-based Computational Analysis of Vascular Network Deformation During Early Avian Vascularogenesis*

**LANGMAN GRAD STUDENT AWARD PRESENTATIONS**
5:00 – 6:00 p.m., Room 24AB

**Armand Balboni** (Mt. Sinai School of Medicine)
*Comparative Analysis of the Petro-occipital Fissure in Humans and Rats: Implications for Understanding the Anatomy of Age-related Hearing Loss*

**Richard Peterson** (Medical Univ. of South Carolina)
*Identification and Characterization of Versican as a Downstream Target of Prx1 During Limb Chondrogenesis*

**J. Matthew Velkey** (Univ. of Michigan)
*Neuronal Differentiation and Subtype Specification Following Inducible Expression of Neurogenin-1 in Mouse Embryonic Stem Cells*

**Jamie Wikenheiser** (Case Western Reserve Univ.)
*Differential Levels of Oxygen Tension in the Developing Chicken Heart*

**Lee Greer** (Loma Linda Univ.)*
*HOX Mediated Regulation of the FGF Pathway in the Human Melanoma Cell Line (A375)*

**Sarah Taylor** (Loma Linda Univ.)*
*Lmx1b Upregulates Emx2 During Dorsoventral Limb Patterning*

*These students will make their Langman Award presentation in the Growth & Development Platform Session on Monday, April 4, 10:30 a.m. – 12:30 p.m., in CC Room 22.

AAA Poster Sessions

Be sure to take time to surf the AAA posters, which you'll find “front and center” in the Exhibit Hall! Posters are up all day with presentation times from 12:30-2 p.m. each day so that you can connect with presenters over the lunch break. Popcorn provided!

**Sunday, April 3**
Anatomical Form & Function
Anatomical Variations
Animal Models of Disease
Cardiovascular
Vascular Biology

**Monday, April 4**
Cell Biology & Signal Transduction
Growth & Development
Imaging & Microscopy
Muscle
Neurobiology
Reproduction

**Tuesday, April 5**
Bone & Connective Tissue
Development of Sensory Systems
Stem Cells
Teaching Innovations in Anatomy

AAA Student/Postdoc Posters & Reception
Monday, April 4, 7-8 p.m., Room 23

Late-breaking Abstract Presentations
Tuesday, April 5, 12:30-2 p.m., Exhibit Hall

STUDENT AWARD PLATFORM SESSIONS • STUDENT AWARD PLATFORM SESSIONS • STUDENT AWARD PLATFORM SESSIONS

Karen Lunde  Bing Ye  Evan Zamir  Armand Balboni  J. Matthew Velkey  Jamie Wikenheiser
American Association of Anatomists  
Board of Directors Meeting  
Minutes  
Saturday-Sunday, October 16-17, 2004  
Crystal City Marriott, Washington, DC

ATTENDANCE — Board Members: Parker Antin, Rochelle Cohen (Saturday only), Marion Gordon, John Fallon, Robert McCuskey, Lynn Opperman, Robert Specian, Kathy Svoboda, Robert Tomanek, Judith Venuti, J. Matt Velkey  
Absent: David Burr, Chi-Bin Chien, Kimberly Latacha  
Guests: John Clancy (Saturday a.m.), Brian Crawford, Wiley (Saturday a.m.), Joseph LaManna, Alma Wills (Saturday a.m.)  
Staff: Angela Benson, Andrea Pendleton, Jackie Watling

The numbered sections below refer to items listed in the meeting agenda.

President Robert McCuskey called the meeting to order. Following introductions, he explained that this Board meeting would be conducted like a mini-strategic planning session. Approval of a 2005 budget was postponed (see #3, below), as was the Executive Director’s review. Dr. McCuskey mentioned that AAA is attempting to work with the American Association of Clinical Anatomists (AACA) through the Coalition of American Societies for Anatomy (CASA) on the use of human materials. The American Association of Medical Colleges (AAMC) is waiting for results from a UCLA task force before considering additional involvement; the possibility of federal legislation related to human body donations going through medical schools may be considered.

Brian Crawford, Wiley Vice President & Publishing Director and President, American Medical Publishers Association, made a presentation on the topic of “Open Access Publishing.” He made the following points:

1. The key issues are “Who pays?” and “What is the business model?”
2. Models include: author pays via grant or institution, usually after acceptance; author self-archives at institution, with manuscripts available and searchable at no cost; government-mandated archive (such as NIH).
3. Current author-pay models charge from $500 - $10,000 per article.
4. PLoS (Public Library of Science) needed more money upfront, so they have moved to a membership model, where the institution pays upfront – stakeholder pays.
5. BioMedCentral: management overlap with PubMedCentral at NIH; has small fraction of the biomed literature; spend a lot on marketing.
6. Wiley = “reader pays” subscription model
7. Hybrid model = author choice
   a. Springer: experimenting with author pays $3,000 to “turn-on” manuscript when published.
   b. Company of Biologists: letting authors choose for three journals; at $800 introductory rate, 15-20% chose open access; at $2,100 rate, only 5% chose open access.
8. Institutional self-archiving (Harnett): author reliant, technology enabled, voluntary; distributed model, but is it long-term?
9. Government-mandated: author deposits final peer-reviewed version of manuscript; enables NIH to manage their research portfolio; if open to public six-months after publication, threatens subscription revenue. Similar movements in UK and Germany pushed by PLoS; NAS also considering for chemistry publications.
10. Compulsory open access supported by library associations, smaller patient advocacy groups; elite scientists; government officials responding to potential of researchers being unable to access information due to library cutbacks.
11. Open access opponents: non-profit societies and publishers.
12. Wiley actions:
   a. Support universal access for those who can’t afford publications in developing world (HINARI);
   b. INFORM: medical publishers plan to address health literacy; working with major patient groups (heart, cancer, diabetes);
   c. Google project enabling cross-search across distributed archives;
   d. Advocacy: forming new alliances to lobby NIH; using permanent identifiers to link out to publisher Web sites. NIH silent on issues of copyright and manuscript integrity. Consider this an “unfunded mandate.”

13. Wiley is willing to:
   a. Test hybrid models
   b. Meter the use of articles
   c. Allow author self-archiving
   d. Open recent backfiles
   e. Digitize long-term backfiles with searchable, high-quality PDFs

14. Expect a “transformative model” if open access happens:
   a. Stress services to authors via peer review and editing process;
   b. With “author pays” model, payment will ultimately influence decision-making;
   c. Funding agencies will become the customers.
   d. There will be greater emphasis on how to secure the best papers for publication.

15. The Bayh-Dole Act protects investigators in regard to their ability to exploit patent rights; the NIH proposal may restrict these rights.

16. Wiley has many one-year licenses where libraries could cut out individual journals.

17. Wiley can adjust – AAA should feel threatened, but not frightened.

In a discussion with members, the following questions and points were raised:

1. The $500-900 range for “author pays” is similar to the cost of reprints, which would no longer be needed.
2. Would reviewers expect to be paid? Dr. Crawford cited the CIBER survey done in early 2004 (Scholarly Communication in the Digital Environment: What Do Authors Want? – ciber.soI.city.ac.uk/ciber-pa-report.pdf), noting that this was indicated. (Note: In my review of this study, I found no data on reviewers expecting payment.)
3. Promotion and tenure could be impacted if an author can not afford to publish.
4. Foreign authors may have more difficulty paying for their manuscripts.
5. There would be less NIH funding available for research.
6. At $1,500/manuscript for about 60,000 articles supported by NIH grants, $90 million would be diverted from research.
7. The NIH proposal threatens to put some journals out of business; meanwhile, the NIH database is subject to the federal appropriations process and faces the potential for censorship of certain subject areas (e.g., stem cells, HIV, etc.).
8. Using the non-redacted version of a manuscript creates problems because serious errors may be corrected in the manuscript after the review process.
9. Allowing NIH open access for the final published manuscript violates copyright.

Specifically discussing the possibility of open access for AAA journals, the following points were made:

1. ISI finds that 80% of the citation life of a journal article occurs after the first year, with more than 70% of journal usage after six months. For The Anatomical Record, more than 60% of the download activity occurs after two years; for Developmental Dynamics, more than 70%....[Crawford]
2. Open access after one year would be risky for AAA journals. (Crawford)
3. If AAA wants “open access” (Crawford):
   a. Two years would protect Developmental Dynamics; AR would be more threatened.
   b. Three years would be more protection.
   c. Other societies have approached Wiley about going “open access” for their journals.
   d. If there is more financial risk via open access, Wiley would ask AAA to share this risk.
4. How would Wiley separate the impact of AAA adopting a two-year open access policy from the effect of the NIH open access proposal? (Pendleton)
5. The best solution via NIH plan would be having no central repository and linking to the published version after one year. (Crawford)

The following comments were made after Brian Crawford’s departure:

1. The Wiley contract guarantees royalties through 2021, but could be in jeopardy if there were a two-year business downturn. (Fallon)
2. Publishers have found ways to adapt to publishing changes and find opportunities. There is little risk for AAA to try a two-year open access policy; Springer & Elsevier have tried some open options, but not Wiley. (Wills)
3. Find out what the impact of one-year open access has been on FASEB society journals. (Wills)
4. What is the effect of open access on impact factor? (Wills)
5. Points to make in AAA response to NIH proposal
   a. Need real data about NIH costs.
   b. Proposal is not well thought out.
   c. Should be posting of final manuscript version to prevent problems with data; then publishers must be “at the table” and compensated for the “value added” they bring to the product.
   d. If not the final version, how would NIH ensure that corrections and retractions are connected to the original article?

1. Minutes
   Two corrections were made: On page 8, details were added about Developmental Dynamics’ special issues; on page 10, reference to Dr. Story was changed to Dr. Landis.

   The Board passed the following motion:
   MOVED, that the minutes of the April 16, 2004, Board of Directors’ meeting in Washington, D.C. be approved as amended.

2. Membership Motions Approved by Executive Committee
   The Executive Committee approved the following items via faxed ballot in May 2004:
   a. Student Travel Award levels—3-year pilot trial of giving $200 to new student/postdoc members, $300 to renewing student/postdoc members.
   b. Multi-year memberships—Give members the option to pay dues for either a 3-year or a 5-year period without incurring any dues increase that might take place during that time period.
   c. Reduced dues for low-income countries—$25 without journal (non-advertised) for countries on the World Bank low-income list.

   The Board passed the following motion:
   MOVED, that membership motions approved by Executive Committee fax ballot in May 2004 be ratified, including new Student Travel Award levels for new and renewing students, multi-year memberships, and reduced dues for low-income countries.
3. Modified 2005 Budget Assumptions

Dr. McCuskey explained that the 2005 draft budget was not yet available due to Ms. Pendleton’s recent illness. Therefore, the Board was being asked to approve updated budget assumptions, pending submission of a more detailed budget at a later date.

Ms. Pendleton reviewed some changes in the 2005 Budget Assumptions since their approval in April 2004. She noted that passage of the FASEB Strategic Plan would likely include an increase in dues per member and a change in the definition of membership. This is expected to have a minimal impact on AAA for 2005, since the new definition would reduce the number of members we need to report. (See #8 on next page.)

Dr. McCuskey noted that, based on a recommendation from the Finance Committee, he will appoint a task force to assess the costs related to the Anatomical Terminology Committee. While agreeing that AAA needs to be a “player” in this area, the Finance Committee questioned the need for face-to-face meetings. The Finance Committee also suggested that AAA address the need for low-cost access to the online version of the Terminology Committee’s end product.

The Board passed the following motion:
MOVED, that the modified AAA Draft Budget Assumptions for 2005 be approved.

4. Journal Trust Fund Report

Dr. Clancy reported that the Journal Trust Fund allocation was divided approximately 1/3-1/3-1/3 between equities, fixed income investments, and cash. AAA’s portfolio increased 3.21% through September 2004, compared to an S&P increase of 0.25% for the same period. For 2003, AAA was up 10.75% compared to 26% for the S&P. He noted that the Journal Trust Fund and Investment Committee is happy with Merrill-Lynch management of AAA’s portfolio. [Note: For year-end 2004, the AAA portfolio increased 5.95%, compared to an S&P increase of 9%.]

The Board passed the following motion:
MOVED, that the Journal Trust Fund report be accepted.

5. Outreach Grants

Dr. Gordon said that there were only four Research Meeting proposals; all were good, but one (Robert L. Price, Univ. of South Carolina) was clearly superior to the others. The Board agreed to modify the criteria, particularly in regard to AAA visibility and impact, and note that, while $3,000 is generally the grant level, funds may be divided otherwise. Also, staff will ask Dr. Price if AAA can use his proposal as a good example of meeting the criteria.

Ms. Pendleton explained the funding reductions proposed by the Education Outreach Grant Committee; the Board accepted the committee’s recommendations.

The Board passed the following motion:
MOVED, that the following Research Meetings Outreach Grants be awarded:
- Robert L. Price, Ph.D., Univ. of South Carolina—$3,000 to support student travel scholarships to attend the Microscopy and Microanalysis 2005 Meeting.
- Raymond B. Runyan, Ph.D., Univ. of Arizona College of Medicine—$3,000 to support the keynote speaker at the Weinstein Cardiovascular Development Conference in May 2005.
- Rustin E. Reeves, Ph.D., Univ. of North Texas Health Science Center—$3,000 to support five invited speakers to attend the American Association of Clinical Anatomists meeting in July 2005.
- Peter Satir; Ph.D., Albert Einstein College of Medicine—$3,000 to support speaker and graduate student/postdoctoral travel awards to attend the Cilia, Mucus, and Mucociliary Interaction conference in February 2005.
The Board passed the following motion:
MOVED, that the following Education Outreach Grants be awarded:

- Mary Eder Hurley, Ph.D., D'Youville College—$2,104 to support a program of 20 two-hour sessions on “Overview of the Human Body for High School Students” scheduled for May 2005.
- Margaret H. Cooper, Ph.D., St Louis University School of Medicine—$3,000 to support a “AIMS Virtual Cadaver Demonstrations” scheduled throughout the 2005 school year.
- Sonya J. Williams, Ph.D., Langston University—$1,853 to support a “School of Arts and Sciences Annual Research Day Symposium and Workshop” scheduled for April 2005.
- Suzanne Kempke, Coastal Georgia Community College—$1,500 to support “Forensic Science 101: Incorporating Forensics into High School Science Curricula” scheduled for late May or early June 2005.
- Nathaniel T. McMullen, Ph.D., University of Arizona College of Medicine—$1,500 to support an educational lecture for “Brain Awareness Week: Brain Science 101” scheduled for March 2005.

6. FASEB Capital Campaign

The Board passed the following motion:
MOVED, that AAA allows FASEB a one-time request to solicit AAA members for contributions, provided that the solicitation clearly note that the funds will be used for capital expenditures related to the new FASEB building and renovations to the existing building.

7. Nominations Committee

The Nominations Committee report presented by Dr. Opperman was accepted by the Board.
Nominees include: President-elect – David B. Burr & Thomas H. Rosenquist; Board Members – Kenneth L. Kramer, Charles D. Little, Carol A. Nichols & Hazel Sive; Student/Postdoc Board Member – Julian A. Guttman & Chi Zhang.

8. FASEB Strategic Planning Update & Dues Proposal

Based on preliminary agreements, FASEB dues for 2005 are likely to be $13/member; emeritus and student members will not be counted, only regular & postdoc.

9. Goal 2.5: Enhance job opportunities by developing graduate student competencies in teaching the anatomical sciences.

The Board agreed to tape and transcribe the following “Education & Teaching Track” sessions at the Annual Meeting as the first step in collecting information related to this goal.
- Anatomical Sciences De Novo Workshop
- Anatomy Education Breakfast Roundtables
- Endangered Species: Who Will Teach Anatomy in 2010?

Session organizers will be asked to consider this goal during their sessions. Afterward, a task force will be formed to review ideas and develop recommendations.

Following the business portion of the meeting, Ms. Pendleton reviewed the format for the afternoon session. Members were assigned to separate groups to discuss specified topics with each group reporting back to the full Board on Sunday morning.

A. AAA Journals: Where Do We Go From Here?
(Led by Fallon with Gordon & Specian)
John Fallon made the following points in reporting back to the Board on this discussion:

1. Alma Wills has been providing excellent support in our journal negotiations.
2. AAA’s journal contracts extend until 2021, but are amended regularly.
3. The *Anatomical Record* and *Developmental Dynamics* business plans will be brought to the Board for review at the April 2005 meeting.
4. The 5-year plan for *DD* is expected to include a page increase of 15% from 2004. AAA would like Wiley to provide more analysis of the market and competition.
5. The *AR* editor search is progressing, with applications due in mid-December. The new focus of the journal will be systems biology, a niche of biology just above the cell level that includes cell-cell interactions, organs, and systems.
6. A name change or new subtitle for *AR* could attract papers from other disciplines and increase the impact factor.
7. The new *AR* editor should be encouraged to produce a first issue with prominent authors and papers.
8. Parker Antin has been added to the Journal Oversight Task Force; Duane Haines will go off the Task Force in April 2005.

**B. Create and implement a partner strategy and management system** to identify, pursue, and negotiate with relevant societies and others mutually beneficial collaborations and partnerships that advance AAA and the field. (GOAL 5.1)

(Led by Svoboda with Antin, Cohen, Velkey, Benson)

For those societies/groups we are currently attempting to partner with (AACA, AACBNC, ARVO, HAPS, JAA, Zebrafish) and for others we have established as priorities (American Association of Physical Anthropologists; possibly Canadian Anatomists, Microscopy Society, Teratology Society):

a. Define objectives and parameters for pursuing each partnership.

b. Recommend evaluation mechanisms to ensure objectives are met.

c. Recommend AAA approval processes for partnerships, if needed.

d. Recommend process for and/or identify specific point people.

A full set of notes from this Saturday’s discussion is appended to these minutes. In Sunday morning’s overview, the following points were made:

1. AAA should set specific goals related to each prospective partner, then evaluate the partnership based on these goals, including such things as:
   a. increased manuscript submission to AAA journals
   b. increased Annual Meeting attendance/abstracts
   c. increased membership
   d. increased AAA/anatomy visibility
   e. increased access to graduate students
   f. increased access to job openings
   g. insight for AAA planning
2. For each potential partner, a task force should be set up to establish goals, pursue the partnership, and evaluate results. Staff will develop a matrix to begin this process.
3. Ideas related to partnering with Human Anatomy & Physiology Society (HAPS):
   a. Get feedback from HAPS e-only members re: AAA Web site.
   b. Promote Annual Meeting to HAPS members near San Diego.
   c. Let HAPS members know about postdoc openings.
   d. Consider putting a HAPS e-member on the ACYA or Educational Affairs Committee (non-voting).
   e. Provide information for HAPS members to give to their students about careers in anatomy.
4. Is there a society of “comparative anatomists”? If not, how do we find & attract comparative anatomists to AAA? If so, what could we offer them & what could they do for us? [Note: The Society for Integrative and Comparative Biology was formed through a 1902 merger of two societies, the Central Naturalists and the American Morphological Society.]

5. The next IFAA meeting will be in 2009 in South Africa. Find out who the main contacts are.

6. Pursue contacts with anatomists in Canada & Mexico.

7. Lay groundwork with Chinese. Letter from president to:
   a. Encourage manuscript submissions;
   b. Identify key researcher to write guest editorial about state of anatomy and developmental biology in China.
   c. Invite to San Francisco Annual Meeting; encourage others to submit & attend.

C. AAA & Public Policy
   (Led by Tomanek with Opperman, Venuti, LaManna (guest), Watling)

Joseph LaManna made the following points in reporting back to the Board on this discussion:

1. It is not necessary for AAA to duplicate what our coalition partners already do in regard to public policy advocacy.
2. There are few, if any, issues that require a distinct “anatomy” position.
3. With our current consultant, AAA has not been getting any analysis or filtering of information tailored specifically for our members.
4. The Board agreed with the following recommendations:
   a. AAA will terminate arrangement with public policy consultant by year-end.
   b. AAA should rely primarily on current and future coalition partners (e.g. FASEB, AAMC, NABR, etc.) to gather information and initiate projects.
   c. AAA will use new public policy listserv to relay information to interested members on a regular basis, posting important news to AAA Web site.
   d. AAA will use listserv to poll members about their opinions and position, when needed
   e. Redesign AAA Newsletter to eliminate most public policy information, which is generally out-of-date in a quarterly publication. Reference key public policy topics being covered on listserv and Web site.
5. In regard to the NIH Public Access Policy proposal, the Board agreed that the AAA Public Affairs Committee would draft a response opposing the policy and would encourage AAA members to do so, as well.

Prepared by Andrea Pendleton
AAA Executive Director
February 16, 2005
Approved April 1, 2005
American Association of Anatomists
Board of Directors Meeting
Minutes
Friday, April 1, 2005
San Diego Marriott Hotel – San Diego, California

ATTENDANCE — Board Members: Parker Antin  David Burr, Chi-Bin Chien, Rochelle Cohen, Marion Gordon, John Fallon, Kimberly Latacha, Robert McCuskey, Patrick Nahirney, Lynn Opperman, Raymond Runyan, Robert Specian, Kathy Svoboda, Judith Venuti, J. Matt Velkey. Guests: Julian Guttman (incoming Board member); Duane Haines, Joseph Ingram, Patrick Kelly, Roger Markwald, Mark Paalman, Gary Schoenwolf (for Journal Items K1-5); Howard Garrison, Paul Kincade, Frederick Rickles (for FASEB Item L). Staff: Angela Benson, Andrea Pendleton & Jackie Watling
Absent: Robert Tomanek (representing AAA at JAA meeting)

[The lettered sections below refer to items listed in the meeting agenda.]

President Robert McCuskey called meeting to order.

A. Introduction of New Board Members
   Dr. McCuskey asked Board members to introduce them to the incoming member of the AAA Board of Directors: Julian Guttman, Univ. of British Columbia

B. Minutes
   B1. Approval of minutes
       The minutes of the October 16-17, 2004, Board of Directors meeting in Arlington, VA were approved.
   B2. Action Items: Follow-up since November meeting – No questions or discussion.

C. President’s Report
   C1. Year-end review
       Dr. McCuskey asked Board members to remind their colleagues and chairs to participate in the Anatomy Census. He observed that much had been accomplished in the past year, despite Ms. Pendleton’s extended illness, and complimented the staff for keeping the office running so smoothly. McCuskey then reviewed the society’s ongoing work to accomplish strategic planning goals over the past year, including:
        ▪ Academic Medicine article about shortage of anatomy educators (White Paper)
        ▪ Selection of new Anatomical Record editor. (GOAL 1.2)
        ▪ Development of journal business plans. (GOAL 1.2)

       He also noted many of the other accomplishments during his term as president, including:
        ▪ Doubling of Education & Teaching Track at Annual Meeting. (Action 1.1g)
        ▪ Adoption of new mini-meeting format for Annual Meeting. (Action 1.1f)
        ▪ Implementation of new Research Meetings Outreach Grants. (Action 1.3b)
        ▪ Relaunch of AAA Web site & development of Education & Teaching Tools component. (GOAL 2.1)
        ▪ Launch of E-membership pilot project for HAPS. (GOAL 5.5)
Adoption of nominating guidelines for AAA officers. GOAL 4.4
Implementation of archival decisions.
Creation of Coalition of American Societies for Anatomy (CASA). (GOAL 5.4; GOAL 5.6)

In regard to CASA, Dr. McCuskey noted that AAA must evaluate the best way to proceed. He made the following observations:
- Interaction with the Association of Anatomy, Cell Biology and Neurobiology Chairpersons (AACBNC) has had its ups and downs. While we may be entering a more interactive phase, the group nonetheless is not participating as a CASA partner.
- Representatives from the American Association of Clinical Anatomists (AACA) have also not responded to CASA, as promised.
- Negative press regarding the “Body Worlds” exhibit has not materialized, perhaps because of the extensive “due diligence” carried out by those who mounted the exhibit in Los Angeles.
- The future of anatomy education and curricula development is an important area for CASA to address.
- Another potential area for CASA involvement relates to body donation programs. In Arizona, for example, the state legislature, working with funeral directors, may consider stiffening the Anatomical Gift Act to require that all body donations be made through a medical school program.

Dr. McCuskey said that other near-term challenges include the transition to a new editor for The Anatomical Record and an assessment of The New Anatomist to determine if it should continue as is or be modified in some way. Wiley will assist AAA is surveying readers and evaluating the role that NA plays in the AR impact factor. Dr. McCuskey also reported that Dr. Duane Haines will step down as NA editor at the end of this year. He noted that the publication could run without a member editor through 2006 until further decisions are made about its format and content. [Task force: Lynne Opperman, chair; Kurt Albertine; Richard Drake; John Fallon; Andrea Pendleton]

C2. Enhancing communication with AAA’s FASEB Board Representatives [GOAL 5.2]
Dr. McCuskey said that AAA’s FASEB Board representatives, Drs. Kathryn Jones and Richard Marchase, will be kept apprised of AAA Board activities. They were invited to this meeting, but were unable to attend.

D. Secretary-Treasurer’s Report (Dr. Burr)
D1. Finance Committee draft minutes (10-15-04 & 1-28-05) – FYI only

D2. Journal Trust Fund [GOAL 6.2]

D2a. Journal Trust Fund Report
Dr. Burr noted that AAA takes a conservative investment approach to conserve capital, rather than to make money; thus, only one-third of the society’s assets are in equities. Nonetheless, Merrill-Lynch expects an upturn in the market and recommends that AAA increase its equity holdings by about $200,000 to equal 40% of the portfolio. In addition, Merrill-Lynch recommends maintaining the fixed income portion of the portfolio by purchasing high quality corporate bonds, preferred stocks, and 1-4 year certificates of deposit as other fixed income investments continue to mature.

Dr. Specian suggested that AAA consider keeping a minimum dollar amount in the Journal Trust Fund, rather than a minimum percentage of the portfolio. Dr. Burr will raise this idea with the Journal Trust Fund & Investment Committee. {In response to a question raised at the meeting, Merrill-Lynch fees for 2004 were $10,463.}
D2a1. Quarterly Performance Review
Dr. Burr reviewed the YTD First Quarter 2005 report from Merrill Lynch, which shows that the Journal Trust Fund had a return of .57% through the end of February. He pointed out the following details:

- The Cumulative Quarterly Time-weighted Return (March 2000-Dec. 2004)—page 5;
- AAA in fairly high quality bonds (A to AAA) and a high percentage of these will come due in the next 2-5 years—page 9;
- AAA’s cumulative Rate of Return has been nearly 55% over the past 9 years.

The Board passed the following motion: MOVED, that the Journal Trust Fund report be accepted.

D2a2. AAA Investment Policy (for reference)
Dr. Burr pointed out that investment policy puts journal royalties at 74% of AAA income in 2002. (In 2004, it was 66%; for 2005, with the special royalty, it will be nearly 72%.

D2b. Investment comparison for FASEB societies
Dr. Burr noted that AAA’s investment policy results in not making a lot when the market is up, but not losing a lot when the market is down.

D2c. Transfer of money to Journal Trust Fund
Dr. Burr reviewed the projected cashflow for 2005 and reported that the Finance Committee had decided to make two transfers of $350,000 each from the operating account at Bank of America to the Journal Trust Fund—one at the end of April and the other at the end of May (after receiving the $250,000 special royalty and the 2004 reconciliation payment from Wiley). Ms. Pendleton explained that there was a historical reluctance to transfer money from the checking account to the Journal Trust Fund because of an earlier instance when funds had to be moved back to the checking account. However, the AAA budget is now easier for the membership to access and understand and the Board has established a policy for when JTF funds may be used. She also noted that the Bank of America sweep account would be terminated and AAA would consider investing in short-term certificates of deposit instead.

D3. 2004 Unaudited Year-end Income & Expense Statement
Dr. Burr pointed out that AAA’s revenues were 117% of budget and expenses were 86% of budget for 2004. Ms. Pendleton noted that the $20,174 spent for office furnishings in 2004 will be depreciated over seven years and is not included with 2004 expenses.

D4. 2005 Budget
Ms. Pendleton noted that the rental cost for the National Office will be somewhat lower (saving about $5-8,000), based on a long-term lease agreement being negotiated with FASEB whereby the penalty for termination will only equal the long-term price reduction. 2005 First Quarter Year-to-date details were presented for information only.

Dr. McCuskey said that a task force will be appointed to make recommendations regarding the future of AAA’s Anatomical Terminology Committee. AAA currently spends $12,000 a year for committee members to participate in an international process of rewriting anatomical terminology. The task force will assess the value of the terminology product to the community. [Task force: Gary Schoenwolf (chair), Stephen Carmichael, Kathryn Jones]
The Board passed the following motion:
MOVED, that the 2005 Budget be accepted.

D5. Revised Budget Process
Ms. Pendleton explained that the revised process shifts responsibility for the approving budget assumptions to the Finance Committee and moves this from April to mid-summer, enabling more realistic projections. The Board will then review and approve the budget in the fall, as usual.

The Board passed the following motion:
MOVED, that the revised budget process and timetable be approved, to include:
1. July Finance Committee Conference Call -- approval of budget assumptions
2. August — development of draft budget
3. October Board Meeting -- approval of budget
4. April Board Meeting -- quarterly report on current year’s budget; re-estimate of current year projections, as needed
5. Summer – development of draft assumptions & budget for following year

D6. Dues for 2006
Dr. Burr noted that AAA typically increases dues in alternate years, which would mean an increase for 2006. However, in light of the changing FASEB dues structure and changes in journal charges related to e-only options, he proposed that AAA hold dues steady for 2006 and charge a task force of the Finance Committee with assessing the current AAA dues structure/categories and recommending changes by the fall meeting. Among options to consider: eliminating category for International Members and significantly lowering dues for students.

The Board passed the following motion:
MOVED, that AAA dues in all member categories remain the same in 2006 as they are in 2005.

D7. 2004 Audit Issues
To comply with auditor request, the Board held a brief Executive Session to give members an opportunity to raise any concerns about how the staff is handling financial oversight. The Secretary-Treasurer will pass any concerns on to the auditor for review.

D8. Election results – FYI only

D8a. Appointment of interim Secretary-Treasurer
Dr. McCuskey explained that it was necessary to appoint an interim Secretary-Treasurer to replace Dr. Burr, who now becomes president-elect. In accordance with the bylaws, he proposed that Richard Drake be appointed to fill the remaining three years of the term, with the understanding that he would run against another candidate at that time.

The Board passed the following motion:
MOVED, that AAA Richard Drake be appointed Secretary-Treasurer to complete the remaining three years of the term vacated by David Burr, who has become President-Elect.

E. Annual Meeting/Experimental Biology (Dr. Gordon)

E1. EB 2004 financial summary
Dr. Gordon pointed out that the Annual Meeting almost broke even in 2004, costing just over $7200, compared to a budgeted net cost of $14,380.
E2. **EB 2005 preliminary data**

AAA had one less abstract in 2005 than in 2004, based on preliminary data. In response to a question, Ms. Pendleton said that about 80% of AAA attendees are AAA members. The following questions were raised:

- Has meeting participation reached a plateau?
- Are there new audiences to attract?
- Would AACA consider becoming a guest society?

In a related discussion, Dr. Gordon suggested that AAA consider establishing a lifetime achievement award for an anatomy educator, equivalent to the Henry Gray Award now given for lifetime achievement in scientific research. Staff will examine similar awards and bring a proposal to the next Board meeting.

E3. **Programming for EB 2006 [Goal 1.1]**

Dr. Gordon said that numerous session proposals had been received and that the Program Committee would review them on April 6.

F. **Membership**

F1. **Committee appointments**

It was noted that Ann Poznanski should be replaced on the Archives Task Force, since she is now in medical school and has not renewed her membership. Task force appointments do not require Board approval.

**The Board passed the following motion:**

MOVED, that the list of 2005-2006 committee appointments be approved.

F2. **New Members for 2005 approval**

**The Board passed the following motion:**

MOVED, that the list of new members for 2005 be accepted [98 Regular; 66 Student/Postdoctoral]

F3. **Membership**

Dr. McCuskey thanked Ms. Benson for her excellent efforts in regard to membership service. Ms. Benson reviewed the 2005 Marketing Plan and membership data. She noted that AAA has 31 fewer members today than at the same time last year. Based on calls made to non-renewing members, she said that students typically site the cost of membership or the fact that they are not presenting at the Annual Meeting as their reason for not renewing; Regular members generally say that they are focusing on organizations more aligned with their work. The following points were made in response to questions and comments:

- Information on “Market Trends” (page 4) will be revised to reflect that there has been a decrease in anatomy lab hours required at medical schools, rather than an elimination of the requirement that students take anatomy.
- AAA has only a single meeting and does not self-publish its journals; thus it offers fewer products to members than other societies that may have more meetings, plus spin-off products—books, courses, etc.—from meetings and journals.
- The journal “backfile” soon ready for launch should be a valuable product to offer on a members-only basis for those whose institutions do not purchase it.
- AAA had a booth at the following meetings in 2004: American Association of Medical Colleges; American Society for Cell Biology; Association of Anatomy, Cell Biology & Neurobiology Chairpersons; Human Anatomy & Physiology Society; International Federation of Anatomy Associations; Zebrafish,
F4. **Partnership Matrix**

Ms. Pendleton said that the matrix was developed in response to Board discussion at its October 2004 strategic planning review. The Membership Committee will be asked to assess partnership priorities, based on implementation of the matrix concept. Members asked that the Society for Integrative and Comparative Biology be considered as a potential partner.

In discussing the need to make connections with Chinese anatomists, the following points were made:
- Asian anatomy groups are meeting in Turkey this year, which might be a good place to make contacts.
- Dr. Svoboda should send a letter to her counterpart with the Chinese Society for Anatomical Sciences.
- Dr. Specian can provide names of Chinese institute directors, who should also be contacted.
- The Chinese should be encouraged to submit manuscripts to AAA’s journals.

F5. **Education Goals 2.1 & 2.5**

Ms. Pendleton said that the Educational Affairs Committee would be addressing the goal of including information about the clinical relevance of anatomy in the Education & Teaching Tools section of the website. Also, the EAC and the Advisory Committee for Young Anatomists (ACYA) would work together on Goal 2.5: Enhance job opportunities by developing graduate student competencies in teaching the anatomical sciences. Several sessions during the Annual Meeting will address aspects of these topics.

G. **Awards**

G1. **Henry Gray Award & Ladman Award**

Dr. Fallon reported that Dr. Roger Markwald had been selected to receive the Henry Gray Award and that Dr. Stephen Carmichael would receive the AAA/Wiley A.J. Ladman Exemplary Service Award.

G2. **Presenting Henry Gray Award Only to Individuals, Not Collaborators**

The Board passed the following motion:
MOVED, that the Henry Gray Award be given only to recognize the accomplishments of an individual, not for collaboration.

G3. **Honorary Members**

Dr. Fallon reported that his committee was recommending that John Gurdon be named an Honorary Member and that the Program Committee be asked to consider him as keynote speaker for the Annual Meeting.

The Board passed the following motion:
MOVED, that John Gurdon (University of Cambridge) be nominated as an AAA Honorary Member and brought to the AAA Annual Business Meeting for approval.

G4. **Electronic-only Submission of Award Nominations & Materials**

The Board passed the following motion:
MOVED, that AAA require all award nominations and materials be submitted either online or electronically via e-mail.

G5. **Committee Scope Revisions**
The Board passed the following motion, correcting one typographical error:
MOVED, that a revised set of committee scopes be approved, updating procedures and language to conform to current practices.

G6. Student Award Submissions
Ms. Pendleton reviewed the data for this year’s submissions and the rationale for having changed the Student Travel Award from $250 to $200 for new members and $300 for renewing members. She noted that it was too soon to tell if the drop in the number of new student members applying for travel awards (from 43 to 27) was related to this shift, but that making the awards $250/$300 would not lose any money if it attracted more students.

The Board passed the following motion:
MOVED, that the Student Travel Award be increased to provide $250 for new student/postdoctoral members and $350 for renewing student/postdoctoral members.

H. Advisory Committee of Young Anatomists
The report was provided for information only; no discussion was needed.

I. Archives
Ms. Pendleton reported that Marcia Peri of the University of Maryland had twice contacted Dr. George Erikson to ask that he turn over AAA materials, primarily photos, to the AAA archive at the University of Maryland. Both efforts were unsuccessful because Dr. Erikson does not believe that the materials belong to AAA.

The Board passed the following motion:
MOVED, that AAA make no further attempt to deal with Dr. Erikson and, instead, plan to deal with his heirs at the appropriate time.

J. Public Policy

J1. Issues Overview
Ms. Pendleton reminded members that they agreed in October to primarily work with coalition partners such as FASEB, NABR, AAMC, etc., rather than developing AAA initiatives in most public policy areas. She reviewed the key policy areas in her written report—NIH budget, conflict of interest regulations, enhanced public access, and others.

J2. NABR Legal Strategy
Ms. Pendleton that partners involved in the National Association for Biomedical Research (NABR) Legal Strategy related to “animal personhood” had regrouped, following termination of the contract with NABR’s legal counsel. The current project now calls for an animal law symposium (likely spring 2006), meetings with NIH institute directors, a recently launched animal law website, and research to assess the degree to which “animal personhood” theories represent a legal threat to animal research.

Ms. Pendleton noted that AAA has just launched a Public Policy Listserv and asked members to help “prime the pump” by responding to messages on the list. She also said that AACBNC members who are not AAA members are allowed to join the list on a trial basis. Ms. Pendleton also suggested that AAA consider creating an Anatomy Chairs’ listserv as a special service to the AACBNC. Dr. Burr and Dr. McCuskey will raise this possibility with AACBNC President Steven Goodman and AACBNC Secretary-Treasurer Bill Rhoten.
K. Journals

K1. Anatomical Record
Dr. Markwald highlighted the following points from his written report:

- **AR** received 354 manuscripts in 2004: 248 new and 106 revisions.
- About 35% are from the U.S.
- Turnaround time averages 32 days.
- The submission & review process is done entirely online.
- 2003 impact factor = 2.019
- There were four special issues in 2004.
- Neuro papers are up 25% thanks to efforts of Dr. Lin.
- Dr. Laitman has succeeded in getting the evolutionary biology community to consider AR as their first choice journal.
- Dividing AR into Parts A & B has confused readers and authors and has confounded the impact factor.
- 2006 marks AR’s 100th anniversary

Dr. Markwald thanked the Board for allowing him to serve as AR editor and praised the choice of Kurt Albertine as the next editor.

K2. Developmental Dynamics
Dr. Schoenwolf highlighted the following points from his written report:

- Manuscript submission is up 22% year-to-date.
- Overall acceptance rate is about 35%.
- Turnaround is about three weeks from submission to decision.
- The delay to print is still significant; the backlog must be resolved.
- All four model systems are posted on online databases.
- Journal images are now posted at three levels of resolution to offer improved quality for PowerPoint presentations.
- “Disease Connections,” a new section linking development and disease, has debuted.
- Beginning in 2006, “Patterns & Phenotypes” will be published online only, reducing color costs.
- Assuming Board approval, DD will appoint Ken Irvine (Rutgers Univ.) as Drosophila Associate Editor.

K3. New Anatomist
Dr. Paalman reviewed his written report and noted that about one-third of the articles in NA are education-related. Therefore, Bob Trelease and Rick Drake have been added to the editorial board. He said that articles in the virtual issue on “Dissection and Anatomy Education” were among the most downloaded articles in 2004. He also thanked Dr. Haines for his service as editor, noting that he will step down at the end of 2005.

K4. Publisher’s Report
Mr. Ingram announced that Nancy Olsen had resigned from Wiley and that they would move quickly to replace her and will not lose momentum on AAA’s journals. Until she is replaced, he will be AAA’s primary contact. Mr. Ingram highlighted the following aspects of Wiley’s written report:

- Both journals are doing well and growing, including increases in color.
- Revenues for both journals are also up.
- Institutional print subscriptions are decreasing.
- Wiley would print an extra 200 pages in the June and July issues of Developmental Dynamics to eliminate the backlog of manuscripts awaiting publication.
- Wiley will bring DD production down to 8-10 weeks from acceptance to print.
Mr. Kelly reviewed the various possible approaches to “open access publishing and explained the approach that Wiley will likely take in response to NIH’s recently announced policy on “enhanced public access.” For authors who identify themselves as NIH grantees, Wiley will offer to submit their accepted manuscript to NIH; a 12-month embargo will be required. Mr. Kelly noted that Wiley would consider taking legal action if NIH required that manuscripts be free after 6 months or if they went beyond a “dumb” archive by adding links or other features to the manuscripts.

K5. Discussion
In response to questions and comments, the following additional points were made:
- Board members asked that Wiley consider an “opt-out” policy for submission to NIH rather than an “opt-in” policy, automatically submitting a manuscript unless the authors says not to. Mr. Kelly will broach this request with Wiley management.
- Mr. Ingram will find out how ISI Alerts work.
- Mr. Kelly noted that ISI can provide data on which authors and topics are being cited; Wiley will find out what this data costs.
- Wiley will determine how ISI counts citations related to articles that only appear online.
- In addition to providing AAA with impact factor data, Wiley will track AR & DD ranking and cited half-life over time, compared to competitors.
- The Cell & Developmental Biology backfile is now available for one-time purchase by libraries and free access for AAA members; headers and references are searchable.

[All journal-related guests left at this point in the meeting.]

K6. Selection of AR Editor-in-Chief

The Board passed the following motion:
MOVED, that Kurt Albertine (University of Utah) be appointed to a 5-year term as editor-in-chief of The Anatomical Record.

K7. “Free Access” to AAA journals online
Ms. Pendleton explained that all indications point to the likelihood that Wiley will begin offering free online access to all of its journals one year after publication within the next couple of years. Since the NIH policy is already in force, it was agreed that AAA would wait for Wiley to make an overall corporate policy change, rather than push for AAA open access any sooner.

K8. Developmental Dynamics business plan

K8a. Electronic-only for DD in 2006
Dr. Fallon explained that the trade-off for Wiley’s increasing the page budget for Developmental Dynamics was that AAA must agree to have members receive only an electronic version beginning in 2006. He noted that, according to Dr. Schoenwolf, the DD audience is ready for this step. AAA will prepare members for this via the newsletter, Web, and individual e-mails to those who receive DD, explaining that the change makes production enhancements possible, including additional color. At the same time, AAA will promote the free availability of the journal backfiles.

Ms. Pendleton said that a potential downside of sending only an electronic version of the journal would be the loss of a branding opportunity—readers who never see a print copy of the journal could stop identifying it with AAA. One way to alleviate this problem is for
AAA to automatically send each member the monthly table of contents to both journals, rather than waiting for someone to sign up for “Content Alert.” Ms. Pendleton will arrange this with Wiley.

The Board passed the following motion:
MOVED, that beginning in calendar year 2006, members who select Developmental Dynamics as their journal will receive an electronic-only subscription with the option to purchase a print copy at a cost to be determined (approx. $80).

K8b. Funding request for Drosophila editor

The Board passed the following motion:
MOVED, that AAA provide $5,000 for 2005 and $8,500 in 2006 and 2007 to cover the cost of adding a Drosophila editor for Developmental Dynamics.

K9. Anatomical Record business plan
While members felt that, ultimately, AR would also only be offered to members in electronic form, they agreed that this would not occur in 2006 for several reasons: the AR audience may not be ready for this move; the new AR editor needs time to implement changes in journal content and appearance; such a change could be negotiated as part of the AR business plan.

K10. Require expense reports from editors

The Board passed the following motion:
MOVED, that by February 1 of each year, AAA require that the editors-in-chief of The Anatomical Record and Developmental Dynamics submit an annual financial report for the prior year showing, in broad categories, how editorial office funds have been expended.

K11. Future of The New Anatomist
Dr. McCuskey said that, after several years of publication, it’s time to assess the impact of The New Anatomist and recommend changes, if needed. Such an assessment should be proposed as part of the AR business plan and should include the incoming editor. [The task force appointed following the meeting includes: Lynne Opperman, chair; Kurt Albertine, Rick Drake, John Fallon, and Andrea Pendleton.]

L. FASEB
FASEB President Paul Kincade made the following points:
- Thanked AAA for appointing Kathryn Jones and Dick Marchase as our Board representatives.
- FASEB is in the implementation phase of its recent strategic plan.
- FASEB will be more transparent and efficient in regard to its financial arrangements.
- Communication will be improved.
- New public affairs strategies will be implemented.

Dr. Burr expressed his concern that, under the proposed plan, the FASEB Finance Committee would be totally selected by the FASEB Board. Dr. Kincade explained that there would be four Board representatives and four others chosen from among those nominated by the societies. Dr. Burr noted his preference for a model where there would be a rotation of which societies get to choose a representative, but that the final selection not reside with the FASEB Board.
Dr. Rickles explained that FASEB is not yet out of the woods financially, but is able to manage its debt and will likely break even on its 2005 operating budget. Beyond 2005, no cash flow or load problems are anticipated, but the expected deficit is likely to average $137 million a year. Economies
were achieved by eliminating seven staff and restructuring the accounting operation, among other steps. FASEB is reducing costs by making services more competitive and moving to multi-year rental agreements.

Dr. McCuskey asked about the potential impact of adding or losing member societies. Dr. Kincade noted that FASEB is negotiating with some new societies and may lose the Biophysical Society. While he does not want to see the basic research character of the organization change, he said that more may be done to appeal to the clinical components of societies.

Dr. Garrison explained that a new paradigm on Capital Hill—where power is now concentrated at the leadership level rather than with committee chairs—has led to the need for FASEB to develop a more diversified public affairs strategy and to motivate new champions. He encouraged members to participate in the advocacy process through letters, visits, letters to the editor, etc., noting that influence needed to be more “bottom up” than “top down.” In responses to a question about NIH budget prospects, he said that FASEB would continue to push for the 6% needed to keep science moving forward in a reasonable way, despite tight fiscal constraints. Board members also suggested that FASEB consider taking the campaign for health-related funding to the public, since Dr. Garrison noted how difficult it is to connect with legislative leaders.

M. New Business
Ms. Pendleton noted that the next Board meeting would take place from November 4-6, with the Finance Committee meeting on Friday evening and the Board meeting all day Saturday and Sunday morning.

In a final brief discussion, the Board agreed to co-sponsor a symposium being proposed for the 2006 AAAS meeting on the teaching of evolution at the pre-college and undergraduate levels. Based on Dr. Chien comment that he was unsuccessful in getting enough outside funding for this year’s mini-meeting, Dr. Gordon asked if AAA could support all four mini-meeting symposium. Members agreed that the Program Committee should make recommendations about symposia funding and might consider options such as limiting the number of nights or setting a per diem rate.

Ms. Pendleton asked for feedback on providing print Board materials as well as online. Various suggestions included: providing a single PDF instead of individual linked documents; making CDs instead of binders; having a wireless internet connection available for members to use their laptops at the meeting. Staff will explore alternative options.

N. Thanks & Wrap-up
Dr. McCuskey thanked outgoing Board members—Kimberly Latacha, Lynne Opperman, and Bob Specian—who cycle off the Board of Directors after serving for three years, and John Fallon, who ends his service as President Emeritus. He noted that they would be thanked more formally at the Annual Business Meeting on Monday.

He also urged all Board members to attend the Student Award Platform Sessions on Saturday and the Student/Postdoc Poster Session & Reception on Monday.

The meeting was adjourned at approximately 5 p.m.

Prepared by Andrea Pendleton
AAA Executive Director
Approved by AAA Board of Directors,
November 5, 2005
The meeting was called to order by President Elect Kathy Svoboda. Approximately 45 people attended. Dr. Svoboda explained that President Robert McCuskey left the Annual Meeting early due to his mother’s death.

A. Approval of minutes
The minutes of the April 19, 2004, meeting in Washington, DC were approved.

B. President’s Report (presented by Dr. Svoboda)
B1. Committee Appointments – motion to approve
Dr. Svoboda asked for a motion to approve committee appointments; the motion was approved.

B2. Presidential Wrap-up
Dr. Svoboda reviewed the key accomplishments of the past year, which included:
   a. Publication of an Academic Medicine article about the shortage of anatomy educators
   b. Selection of a new editor of The Anatomical Record (see below)
   c. Development and approval of journal business plans
She also noted that the Board had approved an increase in Student/Postdoctoral Travel Awards, with new members receiving $250 and renewing members receiving $350.

C. Past President’s Report (Dr. Fallon)
C1. Nomination of Honorary Member
Dr. Fallon asked for a motion to approve John Gurdon (University of Cambridge) as an AAA Honorary Member; the motion was approved.

C2. Selection of Editor-in-Chief for The Anatomical Record
Dr. Fallon thanked his fellow members of the Anatomical Record Editor Search Team: Michiko Watanabe (chair), Robert McCuskey, Andrea Pendleton, and Gary Schoenwolf. He reported that there were 12 applicants for the position, including several members of the Editorial Board. One of those members, Kurt Albertine, had accepted the position with great enthusiasm and would begin a transition period on July 1, 2005.

D. President Elect’s Report (Dr. Svoboda)
D1. Anatomy Census
Dr. Svoboda reported that the Census survey was posted online and was still underway.

E. Secretary-Treasurer’s Report (Dr. Burr)
E1. 2004 Year-end Income & Expense Statement
Dr. Burr reported that 2004 had been a healthy year financially, with unaudited revenues nearly $180,000 over budget and expenses about $170,000 under budget.

E2. Dues Structure for 2006
Dr. Burr offered a motion that AAA dues in all member categories remain the same in 2006 as they are in 2005. The motion was passed.

E3. New Members for 2004 Approval
Dr. Burr offered a motion to approve 98 new Regular members and 66 new student/postdoc members. The motion was approved.
E4. **Deceased members**
   Dr. Burr asked for a moment of silence to remember those members who had died over the past year.

E5. **Election results**
   Dr. Burr presented the 2005 election results, as follows:
   - **President-Elect**: DAVID B. BURR – Professor & Chair of Anatomy and Cell Biology, Indiana Univ. School of Medicine
   - **Board of Directors**
     - CHARLES D. LITTLE – Professor of Anatomy and Cell Biology, Univ. of Kansas
     - HAZEL L. SIVE – Member, Whitehead Institute for Biomedical Research and Professor of Biology, MIT
     - JULIAN GUTTMAN – postdoctoral fellow, Biotechnology/Michael Smith Laboratory, Univ. of British Columbia

He explained that AAA Bylaws call for the President to nominate and the Board to approve a candidate to fill any Board vacancy. Thus, Dr. McCuskey had nominated Richard Drake (Director of Anatomy, Cleveland Clinic Lerner College of Medicine) to complete the remaining three years of the term vacated by David Burr, who has become President-Elect.

F. **Experimental Biology** (Dr. Gordon)
   Dr. Gordon reported that, although abstract submissions appear to have reached a plateau, there appeared to be great attendance at this year’s sessions and the Program Committee has received good proposals for EB 2006.

G. **Executive Director’s Report** (Ms. Pendleton)
   G1. **Membership data**
   Ms. Pendleton reported that membership was down about 4% from the same time in 2004 and that most of the drop was in the Student/Postdoc category. She noted that current members are the best recruiters and urged everyone to encourage those in their department to join.

   G2. **Focus Groups**
   Several focus groups were conducted at this year’s Annual Meeting to help assess how members and non-members feel about AAA. Ms. Pendleton thanked those who had participated and urged everyone to consider AAA a “continuous focus group” where staff and leadership are always ready to hear what members have to say and do their best to improve the organization.

   Ms. Pendleton introduced and thanked AAA staff members Angela Benson and Jackie Watling, detailing their key activities over the past year.

H. **New Business** (Dr. Svoboda)
   Dr. Svoboda thanked outgoing Board members: Drs. John Fallon, Kimberly Latacha, Lynne Opperman, and Robert Specian

   In Dr. McCuskey’s absence, Dr. Fallon passed the gavel to Dr. Svoboda and congratulated her on assuming the role of AAA President.

   Dr. Svoboda adjourned the meeting and asked all members to stay for the AAA Student/Postdoc Poster Session & Reception.

*Prepared by Andrea Pendleton*
*AAA Executive Director*
*Approved April 3, 2006*
*San Francisco*
American Association of Anatomists
Journal Trust Fund

Merrill-Lynch Account #733-04299

2003 Account Snapshot

Beginning Value  January 1, 2003  $2,413,309
Total Account Value as of  December 31, 2003  $2,672,423
Total Income & Appreciation for  2003  $259,114
Time-Weighted Annual Return for 2003  10.75%

2004 Account Snapshot

Beginning Value  January 1, 2004  $2,672,423
Total Account Value as of  December 31, 2004  $2,831,553
Total Income & Appreciation for  2004  $159,130
Time-Weighted Annual Return for 2004  5.95%

2005 Account Snapshot

Beginning Value  January 1, 2005  $2,831,553
Total Account Value as of  December 31, 2005  $3,638,159
Funds Added  April 2005  $350,000
Total Income & Appreciation for  2005  $106,671
Time-Weighted Annual Return for 2005  3.1%

2006 Year-to-date

Beginning Value  January 1, 2006  $3,638,159
Funds Added  May 2006  $300,000

Current Portfolio Value  June 30, 2006  $ 4,027,392
Time-weighted Annual Return  Year-to-Date  2.43%

Time-weighted Annual Return for 2001  6.20%
Time-weighted Annual Return for 2000  3.05%
Time-weighted Annual Return for 1999  8.70%
Time-weighted Annual Return for 1998  6.83%

Asset Allocation Mix

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06-30-06 = 3%/63%/34%
# AMERICAN ASSOCIATION OF ANATOMISTS

## STATEMENT OF FUNCTIONAL EXPENSES
FOR THE YEAR ENDED DECEMBER 31, 2005
WITH SUMMARIZED INFORMATION FOR 2004

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<td>Rent (Note 8)</td>
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<td><strong>TOTAL</strong></td>
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<th>Journal</th>
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<th>Total Expenses</th>
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<td>37,285</td>
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</table>

| $ 208,596 | $ 304,867 | $ 77,028 | $ 1,006,748 | $ 78,965 | $ 1,085,713 | $ 1,074,582 |
## AMERICAN ASSOCIATION OF ANATOMISTS

### STATEMENT OF FINANCIAL POSITION

**AS OF DECEMBER 31, 2005**

**WITH SUMMARIZED FINANCIAL INFORMATION FOR 2004**

### ASSETS

#### CURRENT ASSETS

<table>
<thead>
<tr>
<th>Item</th>
<th>2005</th>
<th>2004</th>
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</thead>
<tbody>
<tr>
<td>Cash and cash equivalents</td>
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<td>Investments - current (Note 2)</td>
<td>74,179</td>
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<tr>
<td>Accrued interest</td>
<td>23,732</td>
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<td>Accounts receivable</td>
<td>205,536</td>
<td>157,320</td>
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<td>Prepaid expenses</td>
<td>141,234</td>
<td>123,729</td>
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<tr>
<td><strong>Total current assets</strong></td>
<td><strong>870,340</strong></td>
<td><strong>1,109,196</strong></td>
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#### FURNITURE AND EQUIPMENT

<table>
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<tr>
<th>Item</th>
<th>2005</th>
<th>2004</th>
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</thead>
<tbody>
<tr>
<td>Furniture and equipment</td>
<td>60,989</td>
<td>60,989</td>
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<tr>
<td>Less: Accumulated depreciation</td>
<td>(44,109)</td>
<td>(40,977)</td>
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<td><strong>Net furniture and equipment</strong></td>
<td><strong>16,880</strong></td>
<td><strong>20,012</strong></td>
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#### OTHER ASSETS

<table>
<thead>
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<th>Item</th>
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<th>2004</th>
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<tr>
<td>Investments - noncurrent (Note 2)</td>
<td>3,614,431</td>
<td>2,818,807</td>
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<tr>
<td><strong>TOTAL ASSETS</strong></td>
<td><strong>$4,501,651</strong></td>
<td><strong>$3,948,015</strong></td>
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### LIABILITIES AND NET ASSETS

#### CURRENT LIABILITIES

<table>
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<tr>
<th>Item</th>
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<th>2004</th>
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<td>Accounts payable (Note 4)</td>
<td>$43,196</td>
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<tr>
<td>Accrued vacation</td>
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<td>Deferred dues</td>
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<td>Other deferred revenue</td>
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<td><strong>Total current liabilities</strong></td>
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<td><strong>240,669</strong></td>
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#### NET ASSETS

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<td>Unrestricted:</td>
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<tr>
<td>Undesignated</td>
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<td>Board designated (Note 3)</td>
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<td>Temporarily restricted (Note 5)</td>
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<td>Permanently restricted (Note 6)</td>
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<td><strong>Total net assets</strong></td>
<td><strong>4,296,428</strong></td>
<td><strong>3,707,346</strong></td>
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**TOTAL LIABILITIES AND NET ASSETS**

<table>
<thead>
<tr>
<th>Item</th>
<th>2005</th>
<th>2004</th>
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<tbody>
<tr>
<td><strong>TOTAL LIABILITIES AND NET ASSETS</strong></td>
<td><strong>$4,501,651</strong></td>
<td><strong>$3,948,015</strong></td>
</tr>
</tbody>
</table>
NEW AAA REGULAR MEMBERS
(accepted April 2005)

Chinedu Ashinze
University of Ilorin

Ken Balak
Jefferson College
Dept. of Biology

Mary Barbe
Temple University
Physical Therapy; Anatomy & Cell Biology

Steven Bender
North Texas Center for Head, Face & TMJ Pain

Noel Boaz
Ross University School of Medicine
Dept. of Anatomy

Kristen Bruzzini
Maryville University
Dept. of Preprofessional Studies

John Burch
Fox Chase Cancer Center

Todd Camenisch
College of Pharmacy, University of Arizona
Dept. of Pharmacology and Toxicology

Joseph Cameron
Jackson State University
Dept. of Biology

Kenneth Catania
Vanderbilt University
Dept. of Biological Sciences

Dhruba Chakraborty
International Medical University
Dept. of Human Biology

Sandia Chinapen
San Juan Bautista School of Medicine
Dept. of Anatomy

Cecile Cooper
Cleveland Chiropractic College - LA
Dept. of Undergraduate Studies

Enrico Crivellato
University of Udine
Medical School
Dept. of Medical & Morphological Research

Ana Maria Cuervo
Albert Einstein College of Medicine
Dept. of Anatomy & Structural Biology

Matthew Cykowski
UTHSC-San Antonio
Dept. of Cellular and Structural Biology

Marina D’Angelo
Philadelphia College of Osteopathic Medicine
Dept. of Anatomy

Noel Boaz
Ross University School of Medicine
Dept. of Biomedical Sciences

R. Deepthi
Melaka Manipal Medical College
Dept. of Anatomy

Anthony DeStephen
Columbus, NJ

Leo Donnelly
Imperial College
Dept. of Biological Structure & Function

Richard Duckett
La trobe University
Dept. of Human Biosciences

James Fadool
Florida State University
Dept. of Biological Science

Carmen Fernandes
Nelson R. Mandela School of Medicine
Dept. of Anatomy

Robin Fisher
UCLA
Dept. of Psychiatry/ Neurobiology

Yves Fromes
Institute of Myology

Clifford Fulton
University of Southern Indiana
Dept. of Biology

David Gantt
Philadelphia College of Osteopathic Medicine
Dept. of Anatomy

Rita Getz
CCOM at Midwestern University
Dept. of Anatomy

Noelle Granger
University of North Carolina
Dept. of Cell & Developmental Biology

Lori Hensley
Ouachita Baptist University
Dept. of Biology

Robert Hill
New York College of Osteopathic Medicine
Dept. of Anatomy

Brian Hoey
Columbia College
Dept. of Biology

Walter Horton
Northeastern Ohio Universities College of Medicine
Dept. of Anatomy

Roger Hoversland
Indiana University School of Medicine
Dept. of Anatomy and Cell Biology

Jan Jensen
University of Colorado, Health Sciences Center
Barbara Davis Center

Shantaram Joshi
University of Nebraska Medical Center
Dept. of Genetics & Cell Biology

Rajdeo Kallichearan
Ross University
Dept. of Anatomy

Suzanne Kempke
Coastal Georgia Community College
Dept. of Natural Sciences

Makhdoon Khan
Des Moines University
Dept. of Anatomy

Elisa Konieczko
Gannon University
Dept. of Biology

Thaddeus Krupinski
HoHokus-Hackensack School of Business and Medical Sciences

Kuo Hsing Kuo
University of Northern British Columbia
Northern Medical Program

Albert Lamperiti
Temple University School of Medicine
Dept. of Anatomy & Cell Biology

Robert Hill
New York College of Osteopathic Medicine
Dept. of Anatomy

Nikollaq Leka
University of Tirana
College of Medicine
Dept. of Morphology & Anatomy

Alphonse Leure-duPree
Penn State College of Medicine
Program on Education in Human Structure

Fanxin Long
Washington University Medical School

Joshua Lopez
Willed Body Program, UA COM
Dept. of Cell Biology & Anatomy

Wilfredo Lopez-Ojeda
University of Central Florida
Dept. of Molecular Biology & Microbiology

Kimberly Loscko
Mount Carmel College of Nursing
Dept. of Biological Sciences

Callin Lucaciu
Canadian Memorial Chiropractic College
Dept. of Anatomy

Ross Lumpkin
Thieme Medical Publishers

Karen Lunde
University of Freiburg
Dept. of Developmental Biology

Shelley Maxfield
Pima Community College
Dept. of Life Sciences

Shelley Metten
University of Utah
Dept. of Neurobiology

Ayami Nakazawa
Pujita Health University
School of Medicine
Dept. of Anatomy II

John Nolte
University of Arizona
College of Medicine
Dept. of Cell Biology & Anatomy

Francisco Pelegri
University of Wisconsin-Madison
Dept. of Genetics

Brian Perkins
Texas A&M University
Dept. of Biology

Matusz Petru
University of Medicine and Pharmacy “Victor Babes”
Dept. of Anatomy

David Phelps
Penn State College of Medicine
Dept. of Pediatrics

Sireesha Podugo
University of Missouri at Kansas City School of Biological Sciences

Michael Price
Dartmouth Medical School
Dept. of Anatomy

Elizabeth Rega
Western University
Dept. of Anatomy

Donald Rigamonti
USUHS-GSN
<table>
<thead>
<tr>
<th>Name</th>
<th>Institutional Affiliation</th>
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<tbody>
<tr>
<td>Heather Roberts</td>
<td>Sierra College, Dept. of Biological Sciences</td>
</tr>
<tr>
<td>Oren Rosenthal</td>
<td>Lake Erie College of Osteopathic Medicine (LECOM), Dept. of Anatomy</td>
</tr>
<tr>
<td>Lewis Rubin</td>
<td>Women and Infants’ Hospital/Brown Medical School, Dept. of Pediatrics</td>
</tr>
<tr>
<td>Julie Rutherford</td>
<td>Moorehead, MN</td>
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<tr>
<td>Shouichiro Saito</td>
<td>Gifu University, Laboratory of Veterinary Anatomy, Dept. of Veterinary Medicine</td>
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<tr>
<td>Kenneth Saladin</td>
<td>Georgia College &amp; State University, Biological &amp; Environmental Sciences</td>
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<tr>
<td>Kathy Schaefer</td>
<td>Randolph Macon Women’s College, Dept. of Biology</td>
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<tr>
<td>Sheila Scoville</td>
<td>Eastern Virginia Medical School, Dept. of Pathology &amp; Anatomy</td>
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<tr>
<td>Jodi Sita</td>
<td>La Trobe University, Dept. of Human Biosciences</td>
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<tr>
<td>Kwang-Sup Soh</td>
<td>Seoul National University, Dept. of Physics</td>
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<tr>
<td>Juan Solis-Soto</td>
<td>Universidad Autonoma de Nuevo Leon, Facultad de Medicina y Immunologia</td>
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<tr>
<td>Nikos Solounias</td>
<td>NYIT, New York College of Osteopathy, Dept. of Anatomy</td>
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<tr>
<td>Robert Spears</td>
<td>Baylor College of Dentistry, Dept. of Biomedical Sciences</td>
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<tr>
<td>Leslie Sprunger</td>
<td>Washington State University, Dept. of Veterinary &amp; Comparative Anatomy</td>
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<tr>
<td>Ryoji Suzuki</td>
<td>Akita University, Dept. of Anatomy</td>
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<tr>
<td>Yoshitaka Tamada</td>
<td>Osaka Dental University, Dept. of Anatomy</td>
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<tr>
<td>Shigenori Tanaka</td>
<td>University of Kanazawa, Dept. of Anatomy &amp; Neuroembryology</td>
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<tr>
<td>John Tarpey</td>
<td>St. Mary’s College of California, Dept. of Biology</td>
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<tr>
<td>Mark Teaford</td>
<td>Johns Hopkins Medical School, Dept. of Functional Anatomy &amp; Evolution</td>
</tr>
<tr>
<td>Gunther Von Hagens</td>
<td>Institute for Plastination</td>
</tr>
<tr>
<td>Nephi Walton</td>
<td>Virtual Anatomy</td>
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<tr>
<td>Ned Williams</td>
<td>Minnesota State University, Mankato, Dept. of Biological Sciences</td>
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<tr>
<td>Robert Wordinger</td>
<td>UNTHSC at Fort Worth, Dept. of Cell Biology &amp; Genetics</td>
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<tr>
<td>Terry Wulster</td>
<td>County College of Morris, Dept. of Biology</td>
</tr>
<tr>
<td>Xiaoming Zhang</td>
<td>University of Kansas, Medical Center, Dept. of Anatomy &amp; Cell Biology</td>
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</table>

**American Association of Anatomists**

**Deceased Members**

**April 2004 – March 2005**

- **Harold R. Antiff**
  Calgary, AB, Canada
- **Sidney A. Cohn**
  Memphis, Tennessee
- **Edmund S. Crelin**
  Branford, Connecticut
- **Marie Hortense Alphonse De Groodt-Lasseel**
  University of Antwerpen, Antwerpen, Belgium
- **Pieter Dullemeijer**
  Institute of Evolutionary and Natural Science, Oegstgeest, Netherlands
- **Laurel E. Glass**
  Portland, Oregon
- **Albert Hirschman**
  Bayside, New York
- **Marvin Alexander Jackson**
  Howard University, Department of Pathology, Washington, DC
- **Timothy P. Pons**
  Wake Forest University School of Medicine, Department of Neurosurgery, Winston-Salem, North Carolina
- **Johannes A.G. Rhodin**
  University South Florida College of Medicine, Department of Anatomy, Tampa, Florida
- **Harold N. Schnitzlein**
  Texas Chiropractic College, Department of Anatomy, Bryan, Texas
- **Joyce Elizabeth Shriver**
  New York, New York
- **Morton Spinner**
  Rochester, Minnesota 55902
- **Robert Eugene Yoss**
  Rochester, Minnesota
## NEW AAA STUDENT MEMBERS

(accepted April 2005)

<table>
<thead>
<tr>
<th>Name</th>
<th>Institution</th>
<th>Department</th>
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<tbody>
<tr>
<td>Justin Adams</td>
<td>Washington University</td>
<td>Dept. of Anthropology</td>
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<td>Karen Austin</td>
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1888-1889 Joseph Leidy
1891-1894 Harrison Allen
1894-1895 Thomas Dwight
1895-1897 Frank Baker
1897-1899 Burt Green Wilder
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1984-1985 A. Kent Christensen
1985-1986 John V. Basmajian
1986-1987 Douglas E. Kelly
1987-1988 Henry J. Ralston, III
1988-1989 Roger R. Markwald
1989-1990 Jerome Sutin
1990-1991 Karen Hitchcock
1992-1993 Alan Peters
1993-1994 Donald A. Fischman
1994-1995 Charles E. Slonecker
1995-1996 Michael D. Gershon
1996-1997 Gary C. Schoenwolf
1997-1999 Bruce M. Carlson
1999-2001 Robert D. Yates
2001-2003 John Fallon
2003-2005 Robert S. McCuskey

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Masatoshi Takeichi (RIKEN Center for Developmental Biology)

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### BASMAJIAN/WILLIAMS AND WILKINS AWARD RECIPIENTS

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### HENRY GRAY LAUREATES

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### CHARLES JUDSON HERRICK AWARD RECIPIENTS

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</tr>
<tr>
<td>1994</td>
<td>A. S. LaMantia</td>
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<tr>
<td>1995</td>
<td>M. Tessier-Lavinge</td>
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<tr>
<td>1996</td>
<td>L. Krubitzer</td>
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<tr>
<td>1997</td>
<td>Carla B. Green</td>
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<td>G. F. Striedter</td>
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<tr>
<td>1999</td>
<td>Mahendra Rao</td>
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<tr>
<td>2000</td>
<td>Cori Bargman</td>
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<td>2001</td>
<td>Jeffrey C. Magee</td>
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<td>2002</td>
<td>W. Martin Usrey</td>
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<tr>
<td>2003</td>
<td>Lique Coolen</td>
</tr>
<tr>
<td>2004</td>
<td>Linda J. Richards</td>
</tr>
<tr>
<td>2005</td>
<td>Kenneth Catania</td>
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### A.J. LADMAN EXEMPLARY SERVICE AWARD RECIPIENTS

<table>
<thead>
<tr>
<th>Year</th>
<th>Name</th>
</tr>
</thead>
<tbody>
<tr>
<td>1999</td>
<td>George E. Erikson</td>
</tr>
<tr>
<td>2000</td>
<td>William P. Jolie</td>
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<tr>
<td>2001</td>
<td>David G. Whitlock</td>
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<tr>
<td>2002</td>
<td>Charles “Chuck” Slonecker</td>
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<tr>
<td>2003</td>
<td>Robert D. Yates</td>
</tr>
<tr>
<td>2004</td>
<td>Robert O. Kelley</td>
</tr>
<tr>
<td>2005</td>
<td>Stephen W. Carmichael</td>
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LANGMAN GRADUATE STUDENT PLATFORM PRESENTATION AWARD RECIPIENTS
(Formerly the Jan Langman Award)
1987 C. R. Vanderburg 1994 None 2001 Lara Hutson
1990 Howard Pomeranz 1997 Mojgan Parizi 2004 Lily Francis

H.W. MOSSMAN DEVELOPMENTAL BIOLOGIST AWARD RECIPIENTS
2002 Dider Y.R. Stainier 2004 Olivier Pourquie

PRESLEY-ZEISS POSTDOCTORAL FELLOW PLATFORM PRESENTATION AWARD RECIPIENTS
(formerly the Presley-Carl Zeiss Young Investigator Award)
2000 Julian A. Guttman 2003 Kevin Niswender
2001 Dorry L. Segev 2004 Chi Zhang

GRADUATE STUDENT POSTER PRESENTATION AWARD RECIPIENTS
2002 Christopher Iannotti 2004 Richard Peterson
2003 Anthony Person 2005 William Shane Journeay

POSTDOCTORAL FELLOW POSTER PRESENTATION AWARD RECIPIENTS
2002 Ann-Marie Broome 2004 Patrick Nahirney
2003 Chi Zhang 2005 Tamara Franz-Odendaal

STUDENT/POSTDOC EDUCATION RESEARCH AWARD
2004 Ross Bryan

UNDERGRADUATE STUDENT POSTER PRESENTATION AWARD
2005 Daisy Conduah

YOUNG ANATOMISTS PUBLICATIONS AWARD RECIPIENTS
2002 Eduard Dedkov 2004 Patrick Nahirney
2003 Stephen Moorman 2005 Joshua Gross

DISSERTATION AWARD RECIPIENTS
1989 Kelly McMasters 1994 None 1998 Derek Molliver

GENETECH STUDENT RESEARCH AWARD RECIPIENTS
1998 Mary Janatpour 2000 Isobel A. Scarisbrick
1999 Not presented 2001 Dacia I. Hunton
Amended and Restated: April 22, 2002

BY-LAWS
OF
AMERICAN ASSOCIATION OF ANATOMISTS, INC.

PREAMBLE

It is hereby declared that the By-Laws of the American Association of Anatomists, Inc., contained herein can be referred to by the members as the Constitution of the American Association of Anatomists, Inc. The name of the Association shall be the “American Association of Anatomists, Inc.”, hereinafter called “the Association”. The purpose of the Association shall be the advancement of the anatomical sciences.

ARTICLE I

OFFICES

The New York office of the Association shall be located at such place in the City of New York, State of New York as the Board of Directors determine. The Association may also have other offices at such other places both within and without the State of New York as the Board of Directors may from time to time determine or as the business of the Association may require.

ARTICLE II

MEMBERS

Section 1. Membership. Membership shall be open to all persons interested in the purposes of the Association. The members and the Board of Directors may establish such other criteria for membership, including a schedule of dues, as they deem appropriate.

Section 2. Classes of Members. The Association shall include regular members, regular members emeritus, student or postdoctoral-fellow members, honorary members, and sustaining associate members. Only dues paying members can hold office in the Association; however, student and post-doctoral fellow members are eligible only for seats on the board of directors. Only regular members, regular members emeritus, student or postdoctoral-fellow members and honorary members may vote. Members who have not paid their dues for the current calendar year will be classified as inactive and will not receive mailings to the membership and cannot vote.

(a) Regular Members. Candidates for regular membership must be persons engaged in the teaching or investigation of anatomical or cognate sciences, with an advanced degree or equivalent experience.

(b) Regular Members Emeritus. A member who has paid dues for the previous ten (10) years and who has attained retirement status at his/her institution, may inform the Secretary-Treasurer of that fact in writing, and will be awarded the status of regular member emeritus and will have the same privileges as a regular member except he/she will not receive the journals gratis.

(c) Student or Postdoctoral-Fellow Members. To retain student or postdoctoral-fellow status, such member must obtain his/her advisor’s signature when paying dues each year. Such members in good standing may submit abstracts for presentation at the Annual Meeting of the Association and will receive all mailings sent to regular members as well as special mailings.
(d) **Honorary Members.** Honorary members who have distinguished themselves in anatomical or cognate research or in supporting the mission of the Association may be elected by the membership.

(e) **Sustaining Associate Members.** Any corporation or institution interested in anatomical sciences, and in affording support to the Association, may become a Sustaining Associate Member upon invitation of the Board of Directors. The representatives of Sustaining Associate Members, unless they also qualify as members, shall not be entitled to vote, hold office or endorse candidates for membership in the Association.

Section 3. **Application for Membership.**

(a) **Regular Membership.** The candidate must 1) have a clearly demonstrated interest in the anatomical or cognate sciences based on his/her professional activities or, 2) have one (1) substantive paper in the anatomical or cognate sciences as first author or, 3) have been chiefly responsible for at least one (1) of several collaborative papers on anatomical or cognate subjects. Such papers must have appeared in print before the meeting at which his/her name is to be considered. Those candidates approved by the Board of Directors must first be affirmed by a two-thirds vote of the members present in person or by proxy at the Annual Business Meeting of the Association.

(b) **Honorary Membership.** Nominations are presented to the Board of Directors. Approval must be unanimous, and nominations with reasons for recommendation shall be presented to the members present at the Annual Business Meeting of the Association, a three-fourths vote of members present in person or by proxy and voting being necessary for election.

(c) **Student or Postdoctoral-Fellow Membership.** Student or postdoctoral fellows may be nominated for membership in the Association by a regular member who testifies in writing that the nominee is actively engaged in research on anatomical or related topics, or shows other evidence of strong commitment to a professional career in anatomy or cognate sciences. The candidate for such membership must be endorsed by his/her advisor or sponsor, who may be counted as the nominator if he/she is a regular member.

Section 4. **Meetings and Voting.**

(a) **Meetings.** The Annual Meeting of the Association’s members shall be held at the place, time, and date, as may be fixed by the Board of Directors, or, if not so fixed, as may be determined by the President. Special meetings shall be held whenever called by the Board of Directors, the President or ten (10) percent of the membership. Rulings shall be in accordance with Roberts Rules of Order.

(b) **Notice of Membership Meetings.** Written notice of the place, date, and hour of any meeting of the members shall be given to each member entitled to vote at such meeting not less than ten (10) days nor more than sixty (60) days before the date of the meeting. Such notice shall be deemed to have been given when it is deposited in the United States mail. Notice may be by facsimile transmission, telegraph, telex, courier service, electronic mail or hand delivery. Notice of special meetings shall indicate the purpose for which they are called. Notice of meetings need not be given to a member who attends without protesting lack of notice before or at the meeting’s commencement.

(c) **Quorum, Adjournment of Meetings.** At all meetings of the members, including the Annual Business Meeting of the Association, at least one-hundred (100) members or one-tenth of the membership, whichever is lesser, shall be present in person or by proxy to constitute a quorum for the transaction of business. At any adjourned meeting for which a quorum was present at the original meeting, any business may be transacted which might have been transacted at the original meeting. If the adjournment is for more than thirty days, notice of the adjourned meeting shall be given.
(d) **Voting.** At any meeting of the members, each voting member present in person or by proxy who has paid current dues, if any, shall be entitled to one vote. Upon demand by any member, any vote for directors or any question before the meeting shall be by ballot.

(e) **Proxies.** Voting by proxy shall be permitted.

(f) **Action by the Members.** Except as otherwise provided by law or by these By-Laws, any corporate action authorized by a majority of the votes cast at a meeting of the members shall be an act of the members, provided that the favorable votes be at least equal to the quorum of the members as defined in subsection (c) of this Section 4 (hereinafter termed “Action by the Members”).

Section 5. **Dues and Membership.**

(a) **Dues.** The dues of the Association shall be determined by the Board of Directors and ratified at each Annual Meeting of the Association. Dues are payable on or before January 1 of a calendar year. Individuals who have not paid by January 1, may be placed in an inactive status. The Association shall establish a grace period during which a member who is in arrears on dues shall be put on “inactive status” and may continue to receive certain benefits. At the end of this grace period, the member will be put on “inactive status” unless the dues have been waived under other provisions of these By-Laws. Payment of dues at any time during the calendar year will reinstate the member to active status who will then receive all mailings for the calendar year. Honorary members do not pay dues; however, they have the same privileges as regular members. A regular member emeritus, while retired, will no longer be required to pay dues but must pay to receive the journals.

(b) **Term of Membership.** Membership in the Association shall be for the calendar year for which the membership dues have been paid.

(c) **Renewal of Regular and Student or Postdoctoral-Fellow Membership.** Such membership in the Association may be renewed annually by the payment when due of the appropriate amount of membership dues.

**ARTICLE III**

**BOARD OF DIRECTORS**

Section 1. **Powers and Number.**

(a) **Powers.** The Board of Directors shall have general power to control and manage the affairs and property of the Association in accordance with the purposes and limitations set forth in the Certificate of Incorporation. The Board of Directors shall consist of fourteen (14) individual voting members elected by the membership of the Association, six (6) of whom are officers, and eight (8) councillors elected as provided hereafter in Article III, Section 2(b), two of whom shall be student or postdoctoral-fellow members.

(b) **Number.** The number of directors may be fixed from time to time by resolution of the Board of Directors, but in no event may there be less than three (3) directors, provided that any such resolution shall require a majority vote of the entire Board of Directors.
Section 2. Election and Term.

(a) **Members and Program Chairs as Directors.** The fourteen (14) individual directors shall be elected by Action by the Members and each director shall hold office until his/her term ends at the Annual Meeting of the Association or at the director’s earlier death, resignation or removal.

(b) **Councilors as Directors.** Notwithstanding the foregoing, two (2) of the six (6) non-student/postdoctoral councilors who shall serve on the Board of Directors shall be elected annually to serve three (3) Terms (as defined in Article IV, Section 1 below), thereby creating three (3) classes of councilor-directors. One (1) of the two (2) student or postdoctoral-fellow councilors shall be elected annually to serve two (2) terms (as defined in Article IV Section 1 below). Each director so elected shall serve until the expiration of such director’s respective term or until the election or appointment of such director’s successor, or until such director’s earlier death, resignation or removal.

Section 3. Vacancies and Newly Created Directorships. Newly created directorships resulting from an increase in the authorized number of directors and vacancies occurring in the Board of Directors for any cause, including any such vacancy occurring by reason of the removal of any director from office with or without cause, may be filled by a candidate nominated by the President of the Association and ratified by the vote of a majority of the directors then in office. Each director so elected shall serve until the end of the next Annual Meeting of the Association or until the election or appointment of such director’s successor, or until such director’s earlier death, resignation, or removal.

Section 4. Removal. A director may be removed with or without cause by Action by the Members. Provided there is a quorum of not less than a majority of all directors present, a director may be removed for cause by the vote of two-thirds of the Board of Directors present at the meeting at which such action is taken.

Section 5. Resignations. Any director may resign at any time by giving written notice to the President and Board of Directors. Such resignation shall take effect at the time specified therein or, if no time is specified, at the time of acceptance thereof as determined by the President or Board of Directors.

Section 6. Meetings. The Board of Directors will meet at the Annual Meeting of the Association and at least one (1) additional time each year, approximately six (6) months apart and at such time and place as may be fixed by the Board of Directors or as may be specified in a notice of meeting. The Board of Directors may meet at other times and places at the discretion of the President or a quorum of the Board, either in person or otherwise, including by conference telephone in accordance with Article III, Section 15.

Section 7. Notice of Meetings. Notice need not be given of regular meetings of the Board if the time and place of such meetings are fixed by the Board of Directors. Notice of each special meeting of the Board of Directors must be given to each director not less than two (2) weeks before such meeting. Notice may be in writing and sent by mail, addressed to such director at his or her address as it appears on the records of the Association. Such notice shall be deemed to have been given when it is deposited in the United States mail. Notice may also be by telephone or sent by facsimile transmission, telegraph, telex, courier service, electronic mail or hand delivery. Notice of a special meeting need not be given to a director who submits a signed waiver of notice before or at the meeting’s commencement.

Section 8. Place and Time of Meetings. Meetings of the Board of Directors shall be held at the location, within or without the State of New York, which is fixed by the Board of Directors or, in the case of a special meeting, by the person or persons calling the special meeting.
Section 9. Quorum. At each meeting of the Board ten (10) directors shall constitute a quorum for the transaction of business, so long as such number constitutes at least one-third of the directors constituting the entire Board of Directors. If a quorum is not present at any meeting of the Board of Directors, a majority of the directors present may adjourn the meeting without notice other than an announcement at the meeting, until such a quorum is present.

Section 10. Manner of Acting. The vote of a majority of the directors present at any meeting at which there is a quorum shall be the act of the Board of Directors.

Section 11. Conflicts Policy. Any potential conflict of interest which could result in a direct or indirect financial or personal benefit to a Director, officer or staff member must be disclosed in good faith or known to the Board of Directors or committee authorizing a contract or other transaction. The interested individual may participate in the information-gathering stage of the Board of Directors’ or committee’s discussion, but shall retire from the room in which the Board of Directors or a committee thereof is meeting and shall not participate in the final deliberation or decision regarding such contract or other transaction. Such interested individual may not vote on such contract or other transaction. Interested Directors may be counted in determining the presence of a quorum at the meeting of the Board or of a committee which authorizes such contracts or other transactions.

The minutes of the meeting of the Board of Directors or committee thereof shall reflect (a) that the conflict of interest was disclosed, (b) that the interested Director, officer or staff member was not present during the final discussion or vote of the Board of Directors or committee thereof and (c) that the interested individual did not vote.

All questions as to whether a conflict of interest exists shall be resolved by a vote of the Board of Directors in which the interested individual may not vote.

A conflict of interest disclosure statement shall be furnished annually to the Board by each Director, officer and staff member. The disclosure statements shall be reviewed annually by the Board of Directors or by a committee thereof.

In connection with all actions taken by the Board of Directors with respect to any contract or transaction between the Association and one or more of its directors or officers, or between the Association and any other corporation, firm, association, or other entity in which one or more of the directors or officers of the Association is a director or officer or has a substantial financial interest, affiliation, or other significant relationship, each such interested director or officer of the Association shall:

(a) disclose to the Board of Directors the material facts as to such director’s or officer’s interest in such contract or transaction and as to any such common directorships, offices, or significant financial interest, affiliation, or other significant relationship, which disclosure shall be duly recorded in the minutes or resolutions relating to such actions, and

(b) abstain from voting on any such contract or transaction.

In determining whether to approve such contract or transaction, disinterested directors shall take into account the restrictions regarding either self-dealing under section 4941 of the Internal Revenue Code of 1986, as amended (the “Code”), in the case of an organization classified as a Private Foundation, or excess benefit transactions under section 4958 of the Code in the case of an organization classified as a Public Charity.

Section 12. Organization. At each meeting of the Board of Directors, the President, or, in the President’s
absence, the President-Elect or in the absence of both a person chosen by the directors present, shall act as president. The Secretary-Treasurer shall act as secretary of each meeting of the Board of Directors. In the absence of the Secretary-Treasurer, the president of the meeting shall appoint a secretary of the meeting.

Section 13. Committees of Directors.

The Board of Directors may, by resolution adopted by a majority of the entire Board, designate one or more Standing Committees, to have and exercise such power and authority as the Board of Directors shall specify and as permitted by law. Each Standing Committee shall be appointed by the President, approved by the Board of Directors and ratified by Action of the Members.

The Standing Committees include:

(a) Executive Committee. The officers of the Association shall comprise an Executive Committee of the Board of Directors and shall have the authority to take actions for the Board of Directors between meetings. Four (4) officers shall constitute a quorum of the Executive Committee. Such actions by the Executive Committee are to be reported at the next meeting of the Board of Directors. The Executive Committee of the Board of Directors may meet separately from the Board of Directors either in person or otherwise, including by conference telephone in accordance with Article III, Section 15 hereof.

(b) Finance Committee. The Finance Committee shall consist of seven (7) people: the Secretary-Treasurer, who shall serve as chair, the President, the Past President, the President-Elect, the chair of the Journal Trust Fund Committee, one (1) program chair, and the Executive Director, who shall serve as a non-voting member. The Committee shall be responsible for oversight of the financial structure of the Association and shall make financial policy recommendations to the Board of Directors. The Committee’s activities shall include review of financial management policies, coordinating the preparation of a budget, and the audit, development, and investment policy.

(c) Journal Trust Fund and Investment Committee

Ad Hoc Committees of the Association. When deemed necessary, the President, with the consent of the Board of Directors, may establish Ad Hoc committees of the Association to serve for fixed periods of time. Ad Hoc committees shall have only the powers specifically delegated to them by the Board.

Operation of Committees. At each meeting of a committee, a majority of the voting members of the committee shall be present to constitute a quorum. The vote of a majority of the members of a committee present at any meeting at which there is a quorum shall be the act of the committee.

Representatives and Delegates to Affiliated Groups. The Board of Directors shall appoint representatives or delegates to external bodies with which the Association affiliates. The Board of Directors shall have the power to establish and disestablish relationships with various scientific and governmental groups.

Section 14. Meeting by Conference Telephone. Any one or more members of the Board of Directors or any committee thereof may participate in a meeting of the Board of Directors or such committee by means of a conference telephone or similar communications equipment allowing all persons participating in the meeting to speak and hear each other at the same time. Participation by such means shall constitute presence in person at a meeting.
Section 15. **Action Without a Meeting.** Any action required or permitted to be taken by the Board of Directors or any committee thereof may be taken without a meeting if all members of the Board of Directors or such committee consent in writing to the adoption of a resolution authorizing the action. The resolution and the written consents thereto by the members of the Board of Directors or such committee shall be filed with the minutes of the proceedings of the Board of Directors or such committee.

Section 16. **Scientific Meetings.** The time and place of the Association’s Scientific Meetings shall be determined by the Board of Directors.

Section 17. **Compensation of Directors.** The Association shall not pay any compensation to directors for services rendered to the Association, except that directors may be reimbursed for reasonable expenses incurred in the performance of their duties to the Association.

### ARTICLE IV

**OFFICERS AND COUNCILORS**

Section 1. **Officers, Term of Office and Qualifications.** The officers of the Association shall consist of a President, a Secretary-Treasurer, two (2) Program Chairs, a President-Elect, and a President-Emeritus. The period of time from the end of the Annual Meeting of the Association until the end of the next Annual Meeting of the Association is hereby defined as a “Term.” The President shall serve on the Board of Directors for two (2) Terms as President-Elect and shall continue after his/her two-term active Presidency as a member of the Board of Directors for two (2) Terms with the title President-Emeritus. This maintains a degree of leadership continuity for the Association. If the President becomes incapacitated, the President-Elect shall complete the President’s term and then serve his/her own term. If the President-Elect becomes incapacitated his/her successor shall be elected at the next Annual Meeting. The Secretary-Treasurer and Program Chairs shall serve on the Board of Directors four (4) Terms and can run unopposed for an additional four (4) terms with the approval of the Board of Directors. The Program Chairs serve staggered terms. All officers shall be subject to the supervision and direction of the Board of Directors.

Section 2. **Election.**

(a) **Nominating Committee.** At each Annual Meeting preceding an election, the President for the coming year—in consultation with the current President or President Elect—shall appoint a Nominating Committee of five (5) members at least one (1) of whom shall be a past member of the Board of Directors. The committee shall be approved by the Board of Directors and ratified by Action of the Members at the Annual Business meeting of the Association. This committee shall make its nominations to the Secretary-Treasurer for members of the Board of Directors who are to be elected to fill expiring terms, to serve beginning at the end of the next Annual Meeting of the Association, not less than four (4) months before the next Annual Meeting of the Association. The Nominating Committee shall submit two (2) names for such vacancy, except that a Program Co-chair may run unopposed. So far as possible, the Nominating Committee shall take into consideration the geographical distribution of the members of the Association when making their recommendations for membership on the Board of Directors. Each nominee must have agreed to serve if elected.

(b) **Election Procedures.** A printed ballot bearing all names submitted by the Nominating Committee will be prepared with space provided for write-in candidates for each elected position. This ballot is to be mailed to all members at least three (3) months prior to the next Annual Meeting of the Association. Each member wishing to vote shall return the marked ballot to the National Office postmarked not later than one (1) month prior to the Annual Meeting of the Association. The ballots will be tabulated and certified.
Any candidate receiving a plurality of votes shall be elected at the Annual Business Meeting of the Association. In case of a tie for any elected position, the two (2) candidates with the most votes shall be voted on at the Annual Business Meeting of the Association; the one receiving the greater number of votes shall be declared elected.

Section 3. Removal. Any officer elected by the members or appointed by the Board of Directors to fill a vacancy may be removed by the vote of a majority of the Board of Directors, either with or without cause, at any meeting of the Board at which a majority of the directors is present.

Section 4. Resignations. Any officer may resign at any time by giving written notice to the President.

Section 5. Vacancies. A vacancy in any office arising from any cause may be filled for the unexpired portion of the term in the manner prescribed in Article III, Section 3 of these By-Laws, substituting “officer” for “director”.

Section 6. Duties of Officers and Councilors. An overall goal of all officers and councillors is to promote the Association and to encourage membership and participation in the Association’s activities.

Section 7. President. The President of the Association is a voting member of the Board of Directors. He/she is the principal spokesperson for the Association and represents the Association generally to Congress, the Executive Branch, the Media and to the lay public. The President chairs the Board of Directors Meetings, the Annual Business Meeting of the Association and the Past-President’s Breakfast. The President also has administrative oversight of any Scientific Meeting of the Association and supervises the National Office and the Executive Director. An additional responsibility of the President is the making of appointments to Association committees (other than the Board of Directors), prior to the second year of service as President, in consultation with the President Elect; to the Federation of American Societies of Experimental Biology (FASEB) Board of Directors, and to other FASEB committees. He/she serves on the Finance Committee. The President is the responsible officer of the Association. In the event of death, incapacity or resignation of the President, the President-Elect will assume the office and responsibilities of the President.

Section 8. President-Emeritus. The President-Emeritus of the Association is a voting member of the Board of Directors. The President-Emeritus will assume any special responsibility delegated to him/her by the President.

Section 9. President-Elect. The President-Elect of the Association is a voting member of the Board of Directors. The President-Elect serves on the Finance Committee. It is the responsibility of the President-Elect to educate him/herself in the relationship of the Association to FASEB in preparation for assuming the office of President. An additional responsibility of the President Elect, in consultation with the current President, is the making of appointments to Association committees prior to the first year of service as President.

Section 10. Secretary-Treasurer. The Secretary Treasurer of the Association is ultimately responsible for: Financial oversight of the operational budget, Journal Trust Fund, 2nd Century Fund, and Bensley Trust Fund; Chairing of the Finance Committee; serving on FASEB Finance Committee; short and long range planning and development and presentation of Annual Budget to Executive Committee and members at the Annual Business Meeting; contracts regarding journals/publications; policy for payments (signature authority and dollar limits) for the Executive Director consistent with the budgets developed and approved by the Finance Committee and Board of Directors; policy for financial reports from FASEB and National Office; minutes and Association’s archive; major contact for academic inquiries regarding AAA; liaison with other professional groups (e.g., American Association of Clinical Anatomists, Cajal Club, Association of Anatomy, Cell Biology and Neurobiology Chairpersons, and international societies);
advocacy for AAA and discipline in teaching, research, and public service; being a consultant to journals/editorial boards; other duties as determined by the Board of Directors.

Section 11. Program Chairs. The Program Chairs of the Association are responsible for the scientific aspects of the Association’s Scientific Meetings and oversight for the meeting budget. Thus, all decisions regarding the Call for Abstracts, topic categories, symposia, minisymposia, poster sessions, and programming and sorting of the Association’s scientific abstracts and other scientific presentations, ultimately reside within the authority of the Program Chairs. The Program Chairs make decisions regarding the Annual Meeting in consultation with the President and the Executive Director.

Section 12. Councilors. Councilors are responsible for assuming any assignments from the President.

Section 13. Replacement of Officers. In the event of death, incapacity, or resignation of officers other than the president, the Board of Directors will appoint a replacement to serve until an election is held.

ARTICLE V

STAFF AND NATIONAL OFFICE

Section 1. National Office. The Association shall have a National Office housing an Executive Director and staff. The National Office shall be concerned with the day to day activities of the Association.

Section 2. Executive Director. The Executive Director of the Association shall be a salaried employee hired by the Board of Directors and is responsible for: Maintenance of National Office, including development and management of its budget and staff; oversight of day-to-day FASEB accounting function for AAA, including management of accounts payable and accounts receivable at National Office with timely reports to the Secretary-Treasurer, as requested; maintaining database with timely updates to the Secretary-Treasurer; oversight of Association’s programs, including but not limited to membership, communications, public affairs, meetings, marketing, elections and awards; serving ex officio on Standing Committees; assisting Secretary-Treasurer in AAA budget development; assisting Secretary-Treasurer with preparation of minutes of meetings and maintenance of Associations’s archive; other duties as determined by the Board of Directors.

Section 3. Additional Personnel. The Executive Director may employ such other staff personnel with such titles as the Executive Director shall determine according to available administrative funds and needs of the Association.

Section 4. Compensation. The Board of Directors shall establish the rate of compensation and benefits for the Executive Director of the Association.

ARTICLE VI

EXECUTION OF INSTRUMENTS

Section 1. Contracts and Instruments. The Board of Directors, subject to the provisions of Article III, Section 1, may authorize any officer or officers or agent or agents of the Association to enter into any contract or to execute and deliver any instrument in the name of and on behalf of the Association. Such authority may be general or may be confined to specific instances.

Section 2. Deposits. Funds of the Association may be deposited from time to time to the credit of the Association with the depositories that are selected by the Secretary-Treasurer and approved by the Board of Directors.
Section 3. Orders for the Payment of Money and Endorsements for Deposit.

(a) All checks, drafts or other orders for the payment of money, notes, or acceptances issued in the name of the Association shall be signed by the officer or officers or agent or agents of the Association authorized, and in the manner determined by resolution of the Board of Directors.

(b) Endorsements for deposit to the credit of the Association in any of its authorized depositories may be made, without countersignature, by any officer of the Association or may be made by hand-stamped impression in the name of the Association, unless otherwise provided by resolution of the Board of Directors.

Section 4. Sale or Transfer of Securities. Stock certificates, notes, bonds, or other securities held or owned by the Association may be sold, transferred, or otherwise disposed of when endorsed for transfer by the officer or officers or agent or agents of the Association authorized, and in the manner determined by resolution of the Board of Directors.

Section 5. Bonding. All officers and agents having custody or control of any funds of the Association shall be bonded for an amount fixed by the Board of Directors.

ARTICLE VII

JOURNALS OF THE ASSOCIATION AND THE ANATOMIC JOURNAL TRUST FUND

Section 1. The Secretary-Treasurer shall hold, on behalf of the Association, the assets of the Anatomical Journal Trust Fund. It is the intention to hold the corpus of this Fund intact as a safeguard against possible emergencies. The income shall be employed with due consideration given to the Association’s status as an organization classified under section 501(c)(3) of the Code.

Section 2. The President shall nominate, for ratification by the Board of Directors and members of the Association, a Journal Trust Fund and Investment Committee, consisting of three (3) members, with terms of appointment so arranged that one (1) member shall retire at each Annual Meeting of the Association, subject to reappointment if the membership approves. The Secretary-Treasurer shall serve as an ex-officio member of this Committee.

Section 3. The Board of Directors shall appoint Editors of the Journals owned or sponsored by the Association, in consultation with the publishers of the Journals. The editors shall report to the Board of Directors.

ARTICLE VIII

INDEMNIFICATION

To the fullest extent permitted by the laws of the State of New York:

Section 1. The Association shall indemnify any person (and his/her heirs, executors, or administrators) who was or is a party or is threatened to be made a party to any threatened, pending, or completed action, suit, or proceeding (brought in the right of the Association or otherwise), whether civil, criminal, administrative, or investigative, and whether formal or informal, including appeals, by reason of the fact that he is or was a director, officer, employee, or agent of the Association, or is or was serving at the request of the Association as a director, officer, partner, trustee, employee, or agent of another corporation, partnership, joint venture, trust, or other enterprise, for and against all expenses (including attorneys’
fees), judgments, fines, and amounts paid in settlement actually and reasonably incurred by such person or such heirs, executors, or administrators in connection with such action, suit, or proceeding, including appeals.

Section 2. The Association shall pay expenses as incurred in defending any action, suit, or proceeding described in subsection (1) of this Article in advance of the final disposition of such action, suit, or proceeding, including appeals.

Section 3. The Association may purchase and maintain insurance on behalf of any person described in subsection (1) of this Article against any liability asserted against him, whether or not the Association would have the power to indemnify him against such liability under the provisions of this Article or otherwise.

Section 4. The provisions of this Article shall be applicable to all actions, claims, suits, or proceedings made or commenced after the adoption hereof, whether arising from acts or omissions to act occurring before or after its adoption. The provisions of this Article shall be deemed to be a contract between the Association and each director, officer, employee, or agent who serves in such capacity at any time while this Article and the relevant provisions of the laws of the State of New York and other applicable law, if any, are in effect, and any repeal or modification thereof shall not affect any rights or obligations then existing with respect to any state of facts or any action, suit, or proceeding then or theretofore existing, or any action, suit, or proceeding thereafter brought or threatened based in whole or in part on any such state of facts. If any provision of this Article shall be found to be invalid or limited in application by reason of any law or regulation, it shall not affect the validity of the remaining provisions hereof. The rights of indemnification provided in this Article shall neither be exclusive of, nor be deemed in limitation of, any rights to which any such officer, director, employee, or agent may otherwise be entitled or permitted by contract, the Certificate of Incorporation, vote of directors, or otherwise, or as a matter of law, both as to actions in his official capacity and actions in any other capacity while holding such office, it being the policy of the Association that indemnification of the specified individuals shall be made to the fullest extent permitted by law.

Section 5. For purposes of this Article, references to “other enterprise” shall include employee benefit plans; references to “fines” shall include any excise taxes assessed on a person with respect to an employee benefit plan; and references to “serving at the request of the corporation” shall include any service as a director, officer, employee, or agent of the Association which imposes duties on, or involves services by, such director, officer, employee, or agent with respect to an employee benefit plan, its participants, or beneficiaries.

**ARTICLE IX**

**GENERAL PROVISIONS**

Section 1. **Operational Year.** The operational year for the Association shall start at the beginning of the calendar year; however, membership on the Board of Directors and other committees of the Association shall begin at the termination of the last day of the Annual Meeting of the Association. The Fiscal Year of the Association shall end on December 31.

Section 2. **Seal.** The corporate seal shall have inscribed thereon the name of the corporation, the year of its organization and the words [“Corporate Seal, Not-for-Profit, New York.”] The seal may be used by causing it or a facsimile thereof to be impressed or affixed or in any manner reproduced.

Section 3. **Books and Records.** The Association shall keep correct and complete books and records of accounts of the activities and transactions of the Association, including a minute book, which shall...
contain a copy of the Certificate of Incorporation, a copy of these By-Laws, and all minutes of meetings of the Board of Directors and committees thereof.

ARTICLE X

AMENDMENTS BY MEMBERS AND/OR BOARD OF DIRECTORS

Section 1. Certificate.

Members. As authorized under section 802 of the New York Not-for-Profit Corporation Law, the members may by Action by the Members authorize any amendment or change in the Certificate of Incorporation.

Section 2. By-Laws.

(a) Members. As authorized under Section 602 of the New York Not-for-Profit Corporation Law, the members may by Action by the Members authorize any amendment or change in the By-Laws. Any proposed changes in the By-Laws of the Association must be presented in writing to the Board of Directors at least six (6) months before an Annual Meeting of the Association. Due notice of such proposed changes shall be published in the Newsletter or otherwise sent to each member at least one (1) month in advance of the Meeting at which action is to be taken. Action by the Members is necessary to amend the By-laws at a meeting of the membership. In an emergency declared by the Board of Directors, the By-Laws may be modified without delay or advanced notice by mail ballot, only if seventy (70) percent of the members of the Association who return their ballots agree to the change, and if the Board of Directors agrees unanimously.

(b) Board of Directors. As authorized under Section 602 of the New York Not-for-Profit Corporation Law, the Board of Directors may amend or repeal these By-Laws at any meeting of the Board of Directors, at which a quorum is present, by a vote of two-thirds of the directors present or by unanimous written consent of the Board of Directors provided that the amendment is ratified by Action by the Members at the next annual meeting of the Association.
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Title _________________________________
Institution _____________________________________________
Department _____________________________________________
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How did you learn about AAA?  ☐ AAA Journal  ☐ Colleague  ☐ FB Meeting  ☐ FASEB  ☐ Professor
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☐ Cytokines, Growth Factors & Receptors
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☐ Musculoskeletal SYSTEMS
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☐ Neuroscience of Learning
☐ & Memory
☐ Organ Growth & Function
☐ Pathology & Human Disease
☐ Pineal Gland & Circadian Rhythms
☐ Plasticity: Developmental or Adult
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☐ Stem Cell Biology
☐ Teaching Innovations
☐ Transgenic Animals & Other Models
☐ Transplants
☐ Urinary System
☐ Vascular Biol. & Pathology
☐ Zebras
☐ Other
☐ Other

Personal Information

(The answers to these questions are for statistical purposes only and will be held in complete confidentiality.)

Date of Birth, ______________________
☐ Male  ☐ Female

Race:
☐ Amer. Indian/Alaskan Native
☐ Asian or Pacific Islander
☐ Black
☐ White (non-Hispanic)
☐ Hispanic
☐ Other (specify)______________

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