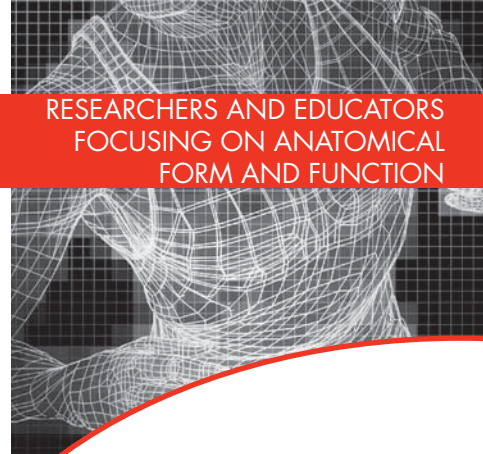


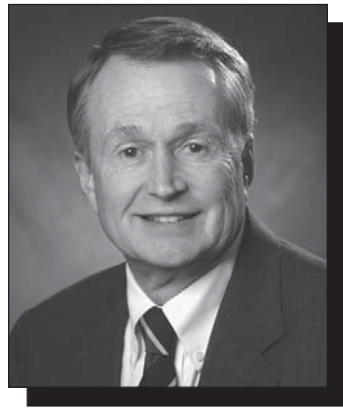
# NEWS

VOLUME 17, NUMBER 3, SEPTEMBER 2008



## Marchase to lead FASEB into White House transition

**R**ichard B. Marchase, vice president for research and professor of cell biology at the University of Alabama at Birmingham, took office as FASEB's 93rd president on July 1. An AAA member since 1994, Marchase represented AAA at various FASEB Funding Consensus Conferences prior to joining the FASEB Board of Directors in 2002 as AAA's representative. He has also chaired AAA's Public Affairs Committee and served as president of the Association of Anatomy, Cell Biology, and Neurobiology Chairs and as that group's representative to the National Caucus of Basic Biomedical Science Chairs.



Among his priorities for the coming year, Marchase will continue to spearhead FASEB's efforts to engage voters on critical science policy issues. "The presidential election and the incoming administration present unique opportunities to highlight the importance of biomedical research on a national scale," said Marchase. "It is vital that our nation's leaders recognize the value of agencies like the National Institutes of Health and the National Science Foundation. I look forward to working with Congress and the new Administration to build a sustainable commitment for scientific research."

Marchase pointed to recent appropriations bills from Congress that include increased funding for science as evidence that research is gaining ground as a national priority. "However, as FASEB President, funding is not going to be my only focus," he continued. "With public funding comes a justifiable need for accountability in

how these funds are used. The challenge is in establishing systems that ensure the public trust in a manner that does not create unnecessary regulatory burdens nor unduly delay scientific progress. FASEB will be addressing these issues on a number of fronts over the next year, from biosecurity to conflict-of-interest to animal and human subjects protection."

In a recent interview with *The Scientist* (published online on July 10), Marchase stressed that his primary goal between now and November is "to approach both political parties and attempt to reestablish scientific funding and a respect for science as important parts of their platforms... We would really love to see a science advisor who had the ear of the President."

Marchase has several active NIH awards for research infrastructure and to support his laboratory, which studies the effects of hyperglycemia on recovery from trauma. A graduate of The Johns Hopkins University (Ph.D., Biophysics), Marchase has received many honors, including one of the inaugural Presidential Young Investigator Awards from the National Science Foundation. He moved to the University of Alabama at Birmingham in 1986 and chaired the Department of Cell Biology from 1990-2000.

With Marchase as FASEB president, AAA becomes the only FASEB society that has had more than one of its members serve as president in this century. Mary Hendrix served in this position from 2000-2001. ❖

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## View from the Top

### Congress considering plastination import ban

For many years now, the various “*Body Worlds*” exhibits have been traveling to museums around the U.S. These exhibits demonstrate human and animal anatomy and physiology, and have heightened the awareness of the public to important issues of human health. It is estimated that more than 23 million people, both children and adults, have seen one of the *Body Worlds* exhibits since 1995.

While these exhibits have demonstrated they have significant educational and scientific value, I admit that my most intense reaction was to the artistry of the human body. When I viewed *Body Worlds 2* in Chicago, I was impressed at the conversations that occurred all around me; people are genuinely interested in the anatomy and structure of their bodies and in the physiological processes that make them work.

There are several different traveling exhibits, not all of equal quality and not all produced by the same group. Arguably, the best presentations have been those of Gunther von Hagens from the Institute for Plastination in Heidelberg, Germany, the man who developed the plastination process. There are other exhibits that share some of the same elements of *Body Worlds* and go by other names. One of these—*Bodies . . . the Exhibition*—has come under fire for questionable practices regarding informed consent. Although there are many controversial ethical issues surrounding these exhibits, perhaps the most controversial is whether appropriate informed consent was obtained to use these bodies as part of an exhibit.

This question highlights one of the most profound ethical concerns that this exhibit could raise. Informed consent is, after all, an important moral and legal right to make decisions about what can be done with one’s body. Reviews of informed consent have been performed for some of the exhibits, though not all. One was undertaken by Dr. Hans-Martin Sass of Georgetown University. Sass reviewed the provenance of all bodies that were being displayed in an earlier *Body Worlds* exhibition to ensure that prior informed consent/permission to donate had been obtained for each one. His report indicated this to be the case.

Such assurances do not apply to all of the exhibits. Fueled by related concerns, a bill (HR 5677, “*To amend the Tariff Act of 1930 to prohibit the importation into the United*”  
*continued on page 4*

# AAA Calls on NIH to Modify Open Access Implementation

September editorials in *The Anatomical Record* and *Developmental Dynamics* make it clear that both AAA journals are “fully compliant (and then some)” with the public access mandates of key funding agencies. “Beyond that,” the *DD* editorial notes, “a large percentage of our content—including all reviews, special issues, primers, and highlights—is open access immediately upon publication and all *DD* content is open access 1 year after publication.” *AR* follows a similar policy.

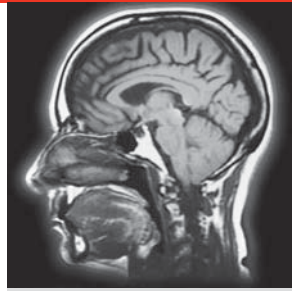
Beyond being in full compliance with the congressional/NIH mandate, AAA’s publisher Wiley-Blackwell will take care of the submission process, depositing articles monthly with a 12-month embargo on their release. This relieves authors of the burden of submitting to PubMed Central.

Unfortunately, the NIH public access Web page (<http://publicaccess.nih.gov/>) continues to give a misleading impression regarding journal compliance. In its May 30 letter to NIH commenting on the NIH Public Access Policy, AAA points out that only journals that make the final *published* version of NIH-funded articles available to PMC within 12 months (as opposed to the final peer-review version required by law) appear on the NIH list of compliant journals that researchers are encouraged to check prior to submitting a manuscript for publication. “Why doesn’t actual compliance with the law entitle a journal to appear on this list?” AAA asks.

Focusing on additional problems regarding NIH implementation of the mandate, AAA also asks:

- How much will it cost NIH to effectively implement the public access policy and how does this cost translate into lost opportunities for research?
- How will international copyright considerations be addressed to protect rights holders?
- Will NIH modify its guidelines, as originally assured, to state that its deposit requirement only applies to peer-reviewed manuscripts that report findings of empirical research and not to literature reviews?

Noting its concern that “the ultimate NIH goal is to shorten the compliance timeline leading to immediate access,” AAA once again urged NIH to consider the potential unintended consequences of its actions as the public access mandate is put into practice. ❖



## Members in the News

### Valerie O’Loughlin recognized (again) for anatomy teaching excellence

Valerie Dean O’Loughlin, associate professor of anatomy and cell biology and director of undergraduate human anatomy in the Indiana University School of Medicine-Medical Sciences Program on the campus of IU Bloomington, recently received a Trustee’s Teaching Award from the IU School of Medicine. The award is given to faculty members viewed as the best teachers from among all tenured, tenure track faculty, clinical faculty and full-time lecturers. O’Loughlin was the 2007 recipient of AAA’s Basmajian Award, recognizing excellence in teaching gross anatomy and outstanding accomplishments in biomedical research or scholarship in education.



Valerie O’Loughlin

### Gina Schatteman selected as AAAS Science & Technology Fellow

Gina C. Schatteman, associate professor in the Department of Integrative Physiology at the University of Iowa, heads to NIH this month for a one-year AAAS Science & Technology Fellowship in the Office of Science Education, a division of the Office of the Director.

According to AAAS, the Fellowships “help to establish and nurture critical links between federal decision-makers and scientific professionals to support public policy that benefits the wellbeing of the nation and the planet.” The ultimate goal is to improve public policymaking through the infusion of science, and to increase public understanding of science and technology.”

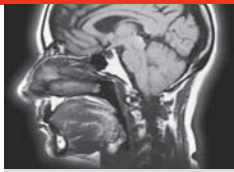
Schatteman chairs AAA’s Public Affairs Committee, representing AAA on FASEB’s Science Policy



Gina Schatteman

*continued on next page*





## Members in the News

*continued from previous page*

Committee. She is also an associate editor of *The Anatomical Record* and formerly served on the AAA Annual Meeting Program Committee.

### U of Saskatchewan bestows top teaching award on Baljit Singh

Baljit Singh is the recipient of the University of Saskatchewan's Master Teacher Award, its highest teaching honor, presented to one teacher each at the spring and fall convocation ceremony. Singh, professor of veterinary biomedical sciences, lectures in anatomy at the University's Western College of Veterinary Medicine.

Acknowledging that "this fundamentally important discipline may lack the glamour and excitement of many clinically oriented courses," the release announcing Singh's selection noted that he "has the unique ability to raise the profile of the subject material. His lectures have been described on repeated occasions as dynamic, full of enthusiasm, well organized, innovative, fantastic, and challenging. He is totally concerned that students learn and understand."

Singh currently serves on AAA's Educational Affairs Committee, following his recent service on the Membership Committee and the Advisory Committee for Young Anatomists.



*Baljit Singh*

View *continued from page 1*

*States of plastinated human specimens*") sponsored by Rep. Todd Akin (R-MO), was recently introduced in Congress. Although it is unlikely that this bill could stand on its own, it could very well be passed into law if it were attached to the more detailed and more important Tariff Bill.

Passage of this bill as currently written would effectively ban importation of *all* plastinated specimens. Not only would this stop what many consider to be an important and effective educational presentation, but it could also affect those of us who use plastinated specimens for our own health-related instruction. After all, von Hagens began plastinating bodies for the sole purpose of providing them to teaching hospitals and medical schools in Europe, not to create traveling exhibits. Preventing importation of all plastinated specimens could severely restrict their use for medical education. There are four companies globally that plastinate (although some medical schools, like ours, have their own plastination laboratories); only one of these is in the U.S. Restricting all importation could have the effect of limiting access to plastinated specimens for medical education and could also create a monopoly for the U.S. companies, which could affect both the quality and price of specimens.

### What is AAA doing?

In November 2003, with only the von Hagens' exhibit touring the world, AAA's Board approved the following position:

The von Hagens' *Body Worlds* exhibit offers superb plastination specimens illustrating the anatomy of both humans and animals. Many of the displays convey significant lessons about human and comparative anatomy. Individuals must make their own decisions about whether or not the potential educational value is outweighed by other aspects of the presentations. Should it be confirmed that von Hagens does not have the informed consent of body donors, as required by the Uniform Anatomical Gift Act, AAA would object to the public display of such bodies.

Congress and those who appeal to Congress for any form of redress often opt for an "easy fix," rather than delving deeply into a subject to understand the nuances it presents. In this case, it seems easier to ban the import of plastinated specimens outright, rather than figure out how to prohibit those that have been improperly acquired.

The bill is much too broad and should be amended to limit the ban to those plastinated specimens for which written consent of the donors cannot be provided. AAA is working with FASEB to determine how to achieve such a revision to limit the impact on specimens used for medical

## Anatomy in Motion

- ❖ Connect with colleagues via AAA's meeting, listservs, and Web site.
- ❖ Keep up with the latest research at AAA's Annual Meeting at EB 2009 & with your free subscription to *Developmental Dynamics* or *The Anatomical Record*, plus *Anatomical Sciences Education*.
- ❖ Use AAA's online Education & Teaching Tools to add spark to your lectures.
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education. Those of you with representatives on the House Ways and Means Committee (<http://waysandmeans.house.gov/members.asp>) may wish to educate them about the importance of plastination to the educational enterprise.

Banning the entry of all plastinated specimens into the U.S. is an example of a situation in which the best of intentions may have unintended consequences. We need to be sure we adhere to ethical standards, but without sacrificing the potential heuristic value of the materials in question. In this case, there is a middle ground that could provide a compromise acceptable to all groups. ❖



AAA President



## Public Policy

### NIH funding boosted thanks to floods, wildfires & wars

Luckily for NIH, there's always an emergency somewhere—floods, wildfires, wars—because, were it not for Congress's penchant for funding via supplemental appropriations, there would likely be no new funds for NIH until the next president takes office.

Congress adjourned in late June for its July 4<sup>th</sup> recess, leaving behind an FY2008 supplemental (HR 2642) for the president's signature. Originally called the "Military Construction and Veterans Affairs Appropriations Act," the measure wound up including \$425 million in research funding: \$150 million each for NIH and FDA and \$62.5 million each for NSF, NASA, and DOE's Office of Science.

In mid-July, Senators Arlen Specter (R-Pa.) and Tom Harkin (D-Iowa) introduced a \$5.2 billion supplemental targeted entirely for biomedical research—\$4 billion for NIH and \$1.2 billion for the National Cancer Institute. In a press release, the long-time NIH champions pointed out that their proposal "seeks to reestablish NIH funding at levels consistent with inflation" after five consecutive years of inflationary cuts. "Funding for NIH is grossly insufficient and Congress must do something about this scandalous situation," Specter said.

Although the senators offered the bill as stand-alone legislation, their hope is that at least some of the funding will make its way into a second FY2008 supplemental spending package that is now expected to come to the Senate floor in September, after Congress returns from its month-long August recess and before they adjourn for election campaigning.

Specifically, it's anticipated that Harkin will put \$500 million for NIH into the \$50 billion supplemental under similar terms as the \$150 million that was in the first emergency supplemental bill, distributed across the institutes and centers on a pro-rata basis. Although the House of Representatives intends to markup and vote on a second FY2008 emergency supplemental bill as well, the White House has not yet indicated a willingness to sign such a measure.

In the meantime, the most likely scenario for FY2009 funding is a *very* long-term continuing

*continued on next page*

### Developmental Biologist & Anatomist Tenure/Tenure Track Positions Dept. of Oral Biology – UIC College of Dentistry

Positions include a combination of teaching and research responsibilities. A research focus in the areas of craniofacial biology with expertise in developmental biology, biochemistry, or molecular biology is desired. Evidence of a strong research background and the ability to conduct an externally funded research program are preferred. Minimum qualifications include research experience at a Ph.D. level or equivalent and teaching experience at a University level. Candidates at the Assistant Professor, Associate Professor, or Professor levels will be considered. Currently, the following two positions are available.

#### Developmental Biologist - Histology

The primary teaching responsibility for this position is in the area of histology. The preferred candidate is a developmental or molecular biologist. Ideal areas of interest include craniofacial development, neural crest cell biology, tissue regeneration, or organogenesis.

#### Anatomist

Full-time anatomy faculty position to teach anatomy to dental students; preferred candidate will have experience using innovative tools and strategies.

The College of Dentistry is located in close proximity to downtown Chicago. The University of Illinois at Chicago provides all the benefits of a major urban research university. For fullest consideration, submit *curriculum vitae* and three references by September 30, 2008 to: Human Resources, UIC College of Dentistry, M/C 621, 801 S. Paulina St., Chicago, IL. 60612 or e-mail to [denthr@uic.edu](mailto:denthr@uic.edu). Please reference Job Code OBADB in your cover letter. AA/EOE



## Public Policy *continued from previous page*

resolution (CR). Congress typically passes a CR to give itself a few extra weeks to approve the budget. This year, however, they are expected to punt—kicking the tough budget decisions all the way to the 111<sup>th</sup> Congress, which convenes in January.

—Based on information reported in  
*FASEB's Washington Update*

## Zerhouni announces changes in peer review process

NIH Director Elias A. Zerhouni has announced significant changes in the NIH peer review system, based on the results of a year-long “self-study” process.

Implementation of the recommendations is expected to be carried out over the next 18 months. Top priorities relate to engaging the best reviewers, improving the quality and transparency of reviews, ensuring balanced and fair reviews across scientific fields and career stages, and developing a permanent process for continuous review of the peer review system.

As part of the implementation, Zerhouni also said that NIH will spend \$1 billion over the next five years on investigator-initiated high-risk, high-impact transformative research “to prevent a slowdown of transformative research, despite difficult budgetary times.” (See related article on risky research, page 10.)

More information about the peer review implementation plan is available at <http://enhancing-peer-review.nih.gov>.

## New computer-based tool will reveal NIH funding by category

NIH unveils reports from a new computer-based tool this spring that will offer a public view of how the agency sorts its research into categories representing research areas, diseases, and conditions. While actual funding allocations will not change, NIH cautions that they may appear different under the new Research, Condition, and Disease Categorization (RCDC) system, as the agency begins classifying intramural and extramural research using the same definitions.

Under the new system, a category can be a research area such as neuroscience, a disease such as diabetes, or a condition such as chronic pain. The RCDC system will continue to report on nearly 240 categories that the NIH has historically reported to Congress and the public; these categories can be viewed online at

# AAA Outreach Supports Anatomy Education From Coast to Coast

**A**AA's Outreach Grant Program provides funding for education and research workshops and symposia either as stand-alone activities or under the umbrella of other national or international societies. Proposals are evaluated on the basis of visibility, impact, quality of participants, and value to the Association. Applications are due August 1 each year; details and an application form are available at [www.anatomy.org](http://www.anatomy.org).

## Organization for the Study of Sex Differences

The Organization for the Study of Sex Differences (OSSD) held its second annual meeting in New Orleans in June.

OSSD is a new international scientific society for basic and clinical scientists who share an interest in

exploring sex/gender differences in all areas of biological, behavioral, and medical science. OSSD's overall mission is to enhance the knowledge of sex/gender differences

by facilitating interdisciplinary communication and collaboration among scientists and clinicians of diverse backgrounds. While membership is steadily growing, the Society's small budget can only cover the operating cost of the annual meeting.

OSSD membership is diverse, complementing the diversity found in the AAA membership. Both societies share a number of common interests, including neurobiology; cellular, molecular, and developmental biology; cardiovascular; genetics; immunology; endocrinology; and cancer. In view of these overlapping interests, an AAA outreach grant provided support for three invited speakers for a symposium on “Sex Differences in Sleep,” organized by AAA member Jessica A. Mong (Univ. of Maryland, School of Medicine).

Gender-related differences in sleep patterns and their regulation influence the risk for and mechanisms of sleep disorders that are strongly associated with other diseases, such as mood and anxiety disorders. While sleep complaints are twice as prevalent in women, women



*Ketema Paul (front) at the OSSD poster session. Paul was one of three OSSD speakers supported by an AAA Outreach Grant.*



are underrepresented in studies of sleep disorders. The understanding of basic sex differences in sleep physiology across species will lead to a better understanding of the role that sleep plays in normal development, maturation, adaptation, aging, and disease propensity.

The symposium's goals were to present recent findings on sex differences in sleep in both animal and human models. Ketema N. Paul (Morehouse School of Medicine) presented his recent work on a mouse model investigating the influences of gonadal hormone over sleep and anxiety in a rodent model. The author reported on her work on sex differences in the functional neuroanatomy and molecular mechanisms underlying the hormonal modulation of sleep. Namni Goel (Univ. of Pennsylvania, School of Medicine) presented her findings on gender differences in human sleep and circadian rhythms, and Timothy Roehrs (Henry Ford Sleep Clinic, Ann Arbor) talked about sleep and menopause.

*Jessica A. Mong, Ph.D., Assistant Professor,  
Dept. of Pharmacology and Experimental Therapeutics,  
University of Maryland School of Medicine, Baltimore*

## Learning anatomy: Like finding \$5 in your washed jeans, but more scientific

With support from an AAA Outreach Grant, the Keck School of Medicine, University of Southern California, sponsored a two-day workshop on "Understanding the Anatomical Basis Of Specific Diseases" for 25 students from Bravo Bio-Medical Magnet High School in Los Angeles. The workshop included lecture and lab components, plus practical experiences with light- and electron microscopy and ultramicrotomy. Especially unique was the role



*Year 2 medical students (at left) discuss the answers to practical exam questions with high school students who have just completed the practical exam. Exam questions were based on presentations and demonstrations given during the workshop.*

modeling participation of six Year 2 medical students who led breakout discussions with groups of five high school students.

Diseases presented were: peptic ulcer, pituitary tumor, glomerulonephritis, lacrimal dry eye disease, and epidermolysis bullosa. All the relevant structural details and immunostaining techniques were discussed to illustrate how anatomical tools can clarify many aspects of

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[www.nih.gov/news/fundingresearchareas.htm](http://www.nih.gov/news/fundingresearchareas.htm). According to NIH, scientific experts have worked together for the past two years to create a definition for each category.

The RCDC system will search all funded grants and contracts in the NIH database and create project summaries. Matching key words and concepts, each project summary will be compared to the category definition to determine how closely they match. If the RCDC project summary meets the threshold score set by NIH experts, RCDC assigns that grant or contract to that category.

An hour-long webinar (<http://rcdc.nih.gov/webinar>) on June 11 introduced the system to the public. Additional information and updates are available at <http://rcdc.nih.gov/index.aspx>.

## New procedure to protect data sent to peer reviewers on CDs

Affirming its commitment to protecting sensitive data and confidential information in grant applications, NIH has implemented a new process to password-protect data on the CDs that reviewers use prior to study section meetings.

According to the Center for Scientific Review, NIH is now encrypting the applications, summary statements, appendix materials, and additional materials on the CDs sent to reviewers. CDs produced for each review meeting will have a unique password that reviewers use to open PDF application files on their CD. Once they receive their CD, reviewers can obtain the password from the "CD Password" page on the Internet Assisted Review Web system.

Instructions will be sent to peer reviewers with the CDs and further information is available at <http://grants.nih.gov/grants/guide/notice-files/NOT-OD-08-071.html>.

## NRSA now supports postdoctoral clinical research experience

NIH has expanded National Research Service Award (NRSA) support to postdoctoral scholars interested in clinical research careers and funded through the Clinical and Translational Science Award (CTSA) program.

When the CTSA program was first implemented, support for postdoctoral trainees was provided only through a KL2 (career development) program. However, experience gained in the first two years of awards has shown a need for institutional NRSA support for postdoctoral trainees in CTSA programs.

*continued on page 9*



## Animals in Research

### Veto override preserves use of Class B dealers...for now

Both the House and Senate easily overrode a presidential veto of the 2008 Farm Bill (*aka* the Food, Conservation and Energy Act—HR 2419) in late June, following an unexpected hiccup when the bill had to be re-passed and re-vetoed due to a clerical error in its preparation.

Both the ban on Class B dealers as suppliers of random-source dogs and cats and the prohibition against live animal demonstrations of medical devices for sales purposes were stricken from the final version of the bill. The only change made to the Animal Welfare Act was an increase in the maximum fine for violations from \$2,500 to \$10,000.

Rather than prohibit Class B dealers, the Farm Bill conference report asks USDA to review the results of an upcoming NIH study of its grantees' reliance upon animals supplied by Class B dealers, as requested by the Senate Appropriations Committee. Once this assessment is completed, the Class B issue will resurface.

### New Web sites provide resources, info links about animal research

Two recently launched Web sites will assist scientists who use animal models in their research. *Medical Research with Animals: For Researchers and Institutions* ([http://grants.nih.gov/grants/policy/air/researchers\\_institutions.htm](http://grants.nih.gov/grants/policy/air/researchers_institutions.htm)), created by NIH, offers resources on preparing for and managing crises, guidance from the NIH Office of Laboratory Welfare (OLAW); links to training on animal care and use, research models, and science and ethics; information on grant writing when research with animals is proposed; and links to funding opportunities. The site also includes an NIH fact sheet on the benefits of animals in research and will soon have a new series of stories—*Advances in Animal Research*—featuring the work of NIH-supported scientists.

*AnimalResearch.info* is both a Web site and the international collaboration of scientists and researchers who created the site, including the Research Defence Society (UK), Coalition for Medical Progress (UK), Americans for Medical Progress (US), and European Coalition for Biomedical Research (EU). The site features sections on Medical Advances, Drug

### Outreach *continued from previous page*

specific diseases. Students participated in practical exam demonstrations to reinforce basic concepts presented in lecture.

Students submitted essays describing the benefit they received from attending the workshops. Success of the program is best illustrated in the following excerpt from the winner of the best essay, *Blown Away* by Chris Ortega:

At first, I was flabbergasted that I had been chosen to go to USC and pretend to be a mini-med student there for two Saturdays. After all, it's not every day that you get to go to a university when you're a sophomore and actually learn what medical students learn.

I learned a lot of new things, especially about kidneys. I was amazed at how in-depth the information went. It showed how blood filtration worked at such a small scale that it actually left me feeling like I wanted to know more about how it worked. It also showed me how fragile the body is, and how just one thing going wrong can affect the whole body.

One thing that I didn't expect at all was the electron microscope. It has always astonished me how small we can see things using them. How can you not be amazed seeing things like the surface of the rough ER and seeing every little nook, pockmark, and cranny? When I got my chance to work it, I was speechless. It'd never crossed my mind that I'd ever use one of those, something that I'd only read about. It was a great surprise, kind of like finding \$5 in your washed jeans, but more scientific.

This experience has really affected me. Before, I was uncertain about going to medical school. Frankly, I thought it'd be too serious and boring. I thought I'd never be able to handle all of that, and that I wasn't going to like it. Now that I've had a taste of it, however, I've changed my tune. I liked it, all of it. It was engaging and fun. The med students, most of all, cemented my choice. They were genuinely nice people, and they overturned my preconceived notions of medical school at once. Now, I know that I truly want to continue and become a plastic surgeon.

*Joel E. Schechter, Ph.D., Professor, Department of Cell and Neurobiology, University of Southern California, Keck School of Medicine*

### Day-With-A-Scientist at Mount Sinai

Exposing 7<sup>th</sup> and 8<sup>th</sup> graders to role models in the workplace influences what they eventually become as workers. Day-With-A-Scientist (DWAS) is a part of Mount Sinai School of Medicine's Early MEDBound Program for



public school students, immersing them in human anatomy and medicine, and offering a broad range of role models. The program involved 48 public school students and eight teachers and staff, plus 15 Mount Sinai faculty and staff for each DWAS event.

In four separate sessions this academic year, DWAS focused on anatomy of organ-systems—their role in health and illness; diagnostic techniques and treatments; prevention—skills in note-taking, library research, oral presentation; and how to be a knowledgeable health consumer. Featured areas and their related departments included: Rehabilitation Medicine, prosections; Department of Medicine, liver; Cardiac Institute, heart; Orthopaedics, bone kits.

Students were welcomed by faculty and staff of the Center for Excellence in Youth Education (CEYE), under the direction of

Lloyd Sherman. Each received a specially designed Study Guide containing the agenda and key questions for that day's six activities; they also rated each session according to what they felt they had learned.

Activity I was dissection of an organ (ordered from a biological supplier). The organ systems were selected for their relevance to community health issues that impact morbidity and mortality in the East Harlem community. Jeffrey Laitman, Joy Reidenberg, and two second-year medical students helped participants with the anatomy labs. Working in pairs, they drew and labeled sketches at various stages of their dissection activity.

Activity II was a presentation by a scientist on the physiology of the organ; Activity III focused on organ pathology. Each presenter used authentic vocabulary and excellent illustrations.

Over lunch, the students met with faculty who spoke about the latest trends in health care and prevention of illness relating to the day's topic. The afternoon program was equally rich. In groups of four to six, the students visited diagnostic and treatment clinics and research labs where they met faculty and staff representing a variety of career pathways, interests, and lifestyles. Then they proceeded to the Levy Library, where they were asked to find and summarize one book on the day's topic. The day concluded with each student pair giving an oral



*Junior high school students studying a section of the central nervous system – cranium and upper portion of the spinal column.*

*continued next page*

Development, Good Science, Facts & Expertise, and Links to other resources. It encourages contributions either in the form of articles or edits to existing articles, which may be reviewed by senior site contributors who are experts in their fields to ensure the accuracy and consistency of information.

### **Newcomer takes helm at AAALAC**

The aptly named Christian E. Newcomer is the new executive director for AAALAC International (Association for Assessment and Accreditation of Laboratory Animal Care). He now oversees the administration of AAALAC's three offices; supervises fiscal and personnel management for the association; provides oversight of AAALAC's Accreditation, Program Status Evaluation and Education & Outreach programs; and serves as AAALAC International's spokesperson.



*continued on page 15*



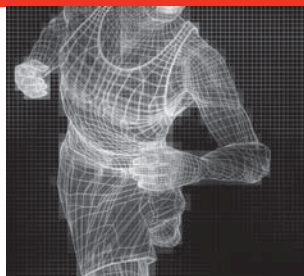
### **Public Policy** *continued from page 7*

To be eligible, postdoctoral trainees must have received, as of the beginning date of the NRSA appointment, a Ph.D., M.D., D.D.S., or comparable doctoral degree from an accredited domestic or foreign institution. Research training at the postdoctoral level must emphasize specialized training to meet national research priorities in the biomedical, behavioral, or clinical sciences that are within the scientific purview of the NIH awarding components participating in this research training program.

No postdoc may receive more than three years of support at the postdoctoral level, including any combination of support from institutional training and individual fellowship awards. In addition, tuition and fees at the postdoctoral level are limited to those required for specific courses in support of the approved training program, which should be identified prior to matriculation.

More information is available at <<http://grants.nih.gov/grants/guide/notice-files/NOT-RM-08-023.html>>.

—Jennifer Hobin, FASEB Office of Public Affairs



## News & Notes

### Studies examine med school faculty satisfaction and retention

Two recent *Analysis in Brief* reports from the American Association of Medical Colleges (AAMC) look at long-term retention and attrition of U.S. medical school faculty and medical school faculty job satisfaction.

According to the first assessment, over a 10-year period, “first-time assistant professors were more likely than faculty members overall to leave academic medicine, with a 43% attrition rate versus a 38% attrition rate.” The analysis also found a “disproportionately high departure rate of both women and non-white faculty from academic medicine.”

The second study, which examined key areas of medical faculty job satisfaction and dissatisfaction, found a “disconnect for some faculty members between what they value in the workplace and actual workplace opportunities.” Based on responses from more than 3,200 faculty, the analysis showed that “higher areas of satisfaction tend to stem from the faculty member’s relationships with colleagues, the school, and patients. In contrast, areas of lower satisfaction seem to stem from the institutional environment...78% of respondents reported that they would again choose an academic career, but only 65% of respondents said that they would do so at their current institutions.”

Both reports are available at <[www.aamc.org/data/aib](http://www.aamc.org/data/aib)>.

### New funding strategies needed for young scientists, risky research

A report from the American Academy of Arts and Sciences released in June concludes that a significant investment in young scientists and high-risk research is critical to sustaining U.S. competitive advantage. *Advancing Research In Science and Engineering* (ARISE), based on analyses of the Committee on Alternative Models for the Federal Funding of Science led by Thomas R. Cech (Howard Hughes Medical Institute), calls for prompt action by all stakeholders—government, industry, universities, and foundations.

Maintaining that “time spent submitting repeated grant applications is a distraction from the research endeavor itself and poorly utilizes the potential of this highly creative resource,” the report recommends the creation or strengthening of existing large, multi-year

### Outreach *continued from previous page*

presentation on the most important thing they learned; logbooks recorded their evaluations.

*Lloyd R. Sherman, EDD, Cl. Associate Professor;  
Director, Center for Excellence in Youth Education,  
Mount Sinai School of Medicine*

### Clinical Applications of Anatomy

Northeastern Ohio Universities College of Medicine and Pharmacy’s (NEOUCOM) first year Anatomy Outreach program, supported by an AAA Outreach Grant, took place in April and May 2008.

More than 150 students from 8 demographically diverse high schools participated in the program: two inner-city schools, two suburban schools with a significant proportion of underrepresented minorities, two rural, one affluent



*Students from Twinsburg High School examine a human heart.*

suburban high school, and one urban high school. Students were either in honors biology, anatomy, or allied health classes offered to juniors and seniors.

The students’ teachers were e-mailed a clinical case (deep vein

thrombosis) one to two weeks prior to their scheduled visit and asked to distribute the case to their students. The case had several exercises (*e.g.*, diagram the flow of blood through the chambers of the heart or describe the three layers of the heart) designed to ensure students had a basic understanding of the cardiovascular system prior to their arrival at NEOUCOM.

Two-hour sessions were staffed by an anatomy graduate student and a NEOUCOM faculty member. Prior to beginning the case, students were given an exercise designed to illustrate the importance of interpreting plane of section in determining the shape of a three-dimensional object. A banana was sliced in different planes and students were asked to draw the profile of each of the different slices. Subsequently, nine circular profiles were shown and students were asked to draw the three-dimensional shape of the object. They were surprised to see that the object was a long-coiled tube moving in and out of plane of section.

The next part of the exercise was examination of the human heart and blood vessels. Three human hearts were available for study. Students were asked to identify the major vessels of the heart, the chambers, and the valves.

*continued on page 15*

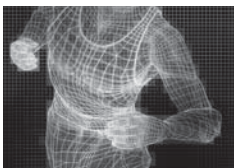
# AAA Expands Global Scope by Joining Asian Pacific Congress

**A**AA has accepted an invitation to join the Asian Pacific International Congress of Anatomists (APICA), which has met every three years since 1996. While most members are from Asian countries, the term “Asian Pacific” is meant to encompass all countries bordering the Pacific Ocean; thus, AAA qualifies for admission. At the 5<sup>th</sup> APICA meeting, held this spring in Tehran, AAA’s admission was approved unanimously.

For more than a decade, AAA and the Japanese Association of Anatomists (JAA) have had an exchange arrangement whereby they have provided speakers for one another’s annual meetings – one year, two AAA members speak at the JAA meeting; the next year, two JAA members speak at the AAA Annual Meeting.

Earlier this year, AAA President David Burr met with several JAA leaders to discuss the value of this exchange and consider possible changes in this arrangement. Based on this meeting, the AAA Board of Directors agreed in April to bring the speaker exchange arrangement to a close after the 2008 AAA Annual Meeting.

In its place, as proposed by JAA leaders, AAA will develop a plan to actively participate in APICA, beginning with the 2011 meeting to be held in either India or Indonesia. This will allow AAA to maintain close ties with the JAA, while expanding its international outreach by developing ties with other anatomy associations in the region. ❖



## News & Notes *continued from previous page*

awards for early-career faculty, the provision of seed funding “to explore new ideas for which no results have yet been achieved,” and enhanced mentoring programs.

Considering ways to encourage investment in high-risk, transformative research, the report recommends that federal agencies “consider targeted programs, grant mechanisms, and policies—and adapt existing grant programs—to foster transformative research; establish metrics with which to evaluate their success;

...strengthen the application and review processes,” and encourage program officers “to engage with the professional communities they fund.”

The full report is available at <[www.amacad.org/ariseFolder/ariseReport.pdf](http://www.amacad.org/ariseFolder/ariseReport.pdf)>.

## Center for American Progress launches new science policy publication

The Center for American Progress (CAP), a non-profit, non-partisan educational and research organization has launched a new publication, *Science Progress*, “to improve the understanding of science among policymakers and other thought leaders and to develop exciting, progressive ideas about innovation in science and technology for the United States in the 21st Century.” The inaugural issue, available both in print and online ([www.scienceprogress.org](http://www.scienceprogress.org)), includes articles on advances in genetics, open access publication, and dual-use research. The publication also features a blog, enabling readers to respond to commentary from prominent scientists on CAP’s Advisory Board.

## New rules for visitors to U.S. from “visa waiver” countries

If you’re planning to visit the U.S. or live in the U.S. and expecting visitors from abroad, the Department of Homeland Security has added an extra step to your travel to-do list. Beginning last month, visitors traveling to the U.S. from visa waiver countries (those typically not requiring a visa) will have to register online at least three days in advance of travel. This rule will affect scientists traveling to the U.S. for scientific meetings or other collaborative activities. Moreover, it is likely there will be a reciprocal agreement requiring U.S. visitors to countries for which they do not need a visa to begin registering in advance of travel sometime in the near future. Details are available at <[http://travel.state.gov/visa/temp/without/without\\_1990.html](http://travel.state.gov/visa/temp/without/without_1990.html)>.

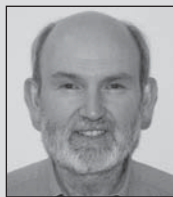
## 2008 AAMC Data Book available

The *2008 AAMC Data Book* from the American Association of Medical Colleges provides a statistical abstract of U.S. medical schools and teaching hospitals, with 86 tables of current and historical data on the following topics: Applicants and Students; Faculty; Medical School Revenue; Tuition, Financial Aid, and Student Debt; Graduate Medical Education; Teaching Hospitals; Health Care Financing; Biomedical Research; Physicians; Faculty Compensation; and reference data such as Price Indices.

A complete list of the tables is available at <[www.aamc.org/data/databook/dbtoc.htm](http://www.aamc.org/data/databook/dbtoc.htm)>; for ordering information, please go to <[www.aamc.org/publications](http://www.aamc.org/publications)> or call 202-828-0416.



## MEET YOUR DEVELOPMENTAL DYNAMICS EDITORS



**Gary C. Schoenwolf—**  
EDITOR-IN-CHIEF

University of Utah School of Medicine, Dept. of Neurobiology and Anatomy, and Children's Health Research Center

Ph.D. in Developmental Biology, University of Illinois, Champaign/Urbana

*Current research:* Early patterning of the vertebrate embryo

*My interest in anatomy began when....* I took a course in embryology/developmental anatomy as an undergraduate.

*My favorite spare-time activity is...* collecting Native American art.

*In my next life, I'd like to be...* exactly what I was in this life.



**Parker Antin**

University of Arizona, Dept. of Cell Biology and Anatomy

Ph.D. in Anatomy, University of Pennsylvania

*Current research:* Vertebrate development

*DD topical area:* Gastrulation, cardiovascular development, myogenesis

*My interest in anatomy began when...* as an undergraduate, I took a course in embryology and then did an independent study on sea urchin fertilization.

*My favorite spare-time activities are...* yoga, skiing, dance, travel.

*In my next life, I'd like to be...* a climbing guide.



**John F. Fallon**

University of Wisconsin-Madison, Dept. of Anatomy

Ph.D. in Biology, Marquette University

*Thesis:* *In Vitro* Analysis of the Control of Cell Death in a Zone of Prospective Necrosis from the Chick Wing Bud

*Current research:* Pattern formation; gene expressions and tissue interactions during vertebrate limb development. Cell death and apoptosis during embryonic development. Feather development and patterning. Evolution of tetrapod digits

*DD topical area:* Reviews Editor: I seek manuscripts that convey the excitement of current research in developmental biology and that may act as a catalyst to attract the brightest young minds to the discipline.

*My interest in science began in earnest when...* I took a course from John Saunders on cell biology. John was so excited about what he told the class each session, I thought, "this is for me." After Saunders' course, I gave up a long held goal of earning a Ph.D. in philosophy and never looked back. The professor of philosophy I was going to study with asked me to read one serious philosophy book a year—I have kept that promise.



**Pip Francis-West**

King's College London, Dept. of Craniofacial Development

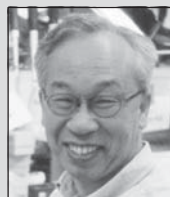
Ph.D. in Molecular Biology, London University

*Thesis:* Production and Characterization of Antigens Against Schistosomiasis

*Current research:* Growth factor regulation of musculoskeletal differentiation and patterning in the head and limb

*DD topical area:* Craniofacial and limb development

*My favorite spare-time activities are...* socializing, art appreciation, walking, and running.



**Hiroshi Hamada**

Osaka University, Developmental Genetics Group, Graduate School of Frontier Biosciences,

Ph.D. in Molecular Biology Okayama University Medical School

*Thesis:* Ribosomal RNA Processing in Animal Cells

*Current research:* Early embryonic patterning and organogenesis in the mouse

*DD topical areas:* Embryonic patterning, organogenesis, transcriptional regulation during development, stem cells

*My interest in anatomy began when....* I was a student in medical school.

*In my next life, I'd like to be...* an archaeologist.



**Min Han**

Howard Hughes Medical Institute and Dept. of MCD Biology, University of Colorado at Boulder

Ph.D. in Molecular Biology, UCLA

*Current research:* Cell signaling and developmental regulation, lipid functions, microRNA functions, cell migration and nuclear positioning

*My interest in anatomy began when...* I was a postdoctoral fellow studying development of the nematode at Caltech.

*My favorite spare-time activity is...* reading history books or "analyzing" certain sporting events.



**Ken Irvine**

Howard Hughes Medical Institute & Waksman Institute, Rutgers University

Ph.D. in Biochemistry, Stanford University

*Current research area:* Signaling, growth, and patterning during development

*DD topical area:* *Drosophila*

*My interest in anatomy began when...* I learned about the bithorax complex.

*My favorite spare-time activity is...* Spare time?? When I'm not working, my family keeps me busy.

*In my next life, I'd like to be...* an astronaut.



**Catherine E. Krull**

University of Michigan, Biologic and Materials Sciences

PhD, Anatomy (major); Neuroscience (minor), University of Arizona

*Current research area:* Molecular mechanisms that influence cell migrations and axon pathfinding

*My interest in anatomy began...* as an occupational therapist, before I earned my Ph.D. I had a mentor who was a senior researcher in anatomy. She was the one who really inspired me to attend grad school and get my Ph.D. in anatomy.

*My favorite spare-time activity is...* working out with weights, swimming.

*In my next life, I'd like to be...* a singer of what is now called 'the oldies,' Motown songs especially.



Suzanne L. Mansour

University of Utah, Department of Human Genetics  
Ph.D. in Biochemistry, University of California, Berkeley  
*Current research area:* FGF signaling in development and disease

*My interest in anatomy began when...* I was a postdoc and saw my first mutant mouse.

*My favorite spare-time activities are...* reading, hiking and finding good restaurants.

*In my next life, I'd like to be...* Next life? Which one?



Takashi Mikawa

Cornell University Medical College, Dept. of Cell and Developmental Biology

Ph.D. in Biophysics, Kyoto University

*Current research:* Morphogenesis

*DD topical area:* Gastrulation, cardiac development, angiogenesis, myogenesis

*My favorite spare-time activities are...* walking, thinking.



Angela Nieto

Instituto Cajal, de Neuroscience de Alicante

Ph.D. in Biochemistry and Molecular Biology, Universidad Autónoma de Madrid

*Thesis:* Disassembly and Regeneration of Nucleoprotein Particles by Chemical Modification

*Current research:* Cell movements during early development in vertebrates: Functional analysis of the Snail gene family in physiology and pathology

*DD topical area:* Neural crest, neural patterning, neurogenesis

*My interest in anatomy began when....* I moved to D. Wilkinson's lab as a postdoc back in 1989. I became fascinated by the developing embryos.

*My favorite spare-time activities are...* visiting art exhibitions and attending concerts. I used to love traveling to remote places, but I am traveling too much for work.

*In my next life, I'd like to be...* a scientist or an opera singer.



David M. Ornitz

Alumni Endowed Professor and Head, Dept. of Developmental Biology, Washington University in St. Louis School of Medicine

Ph.D. in Biochemistry, and M.D., University of Washington, Seattle

*Current research area:* Fibroblast growth factor signaling in organogenesis, physiology, and tissue repair. We are also investigating the function of the Otopetrins, a novel multi-transmembrane domain protein family.

*My interest in anatomy began...* as a graduate student with the realization that there are very specific genetic regulatory elements to control gene expression in individual cell types and that the interactions between genes expressed in specific cell types can control development.

*My favorite spare-time activity is...* running and hiking. I also like travel, river rafting, movies and theater.

*In my next life...* I would still be doing the same thing, but hopefully with better funding.



Lilianna Solnica-Krezel

Dept. of Biological Sciences, Vanderbilt University; Dept. of Cell & Developmental Biology, Vanderbilt University Medical Center

Ph.D., Oncology, McArdle Laboratory for Cancer Research, University of Wisconsin-Madison

*Current research area:* Inductive and morphogenetic events during zebrafish development; emphasis on gastrulation.

*My interest in anatomy began...* when I became interested in animal development, particularly vertebrate gastrulation, as a graduate student. These interests developed further when, as a postdoctoral fellow, I participated in a large-scale genetic screen for mutations affecting zebrafish embryonic development.

*My favorite spare-time activities are...* reading, walking and growing orchids,

*In my next life, I'd like to be...* a scientist.



H. Joseph Yost

University of Utah, Huntsman Cancer Institute, Center for Children—Depts. of Oncological Sciences and Pediatrics

Ph.D. in Genetics, University of Chicago

*Thesis:* The Effects of Heat Shock and Heat Shock Proteins on RNA Processing (in *D. melanogaster* and *S. cerevisiae*)

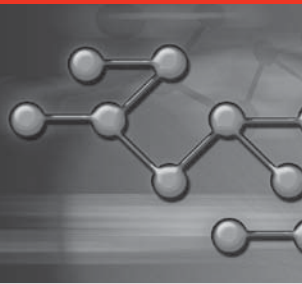
*Current research:* Zebrafish genetics and *Xenopus* embryology; cell signaling, cell migration; left-right asymmetries; cardiovascular development; proteoglycans

and glycosaminoglycans in development; zebrafish cancer biology

*DD topical area:* Early development and patterning; organogenesis

*My interest in science began when...* I did projects in grade school on Lepidoptera metamorphosis and Orthoptera dorsal vessel development.





## Hotlinks

Here are some of the new resources you can get to through *AnatomyLink* ([www.anatomy.org](http://www.anatomy.org)). If you've found a site that you'd like to share with colleagues, just go to "Resource Links" and click on "Send it to us."

### [www.humanskullatlas.com](http://www.humanskullatlas.com)

The *Human Skull Atlas* is an ongoing project in development by AAA member Bob Hutchins of Baylor's College of Dentistry at the University of Texas. This atlas is a simple and clean reference intended for medical professionals and those with an interest in cranial anatomy. A limited demo version is available from the site, which includes the anterior and posterior views of the skull and bony landmarks, as well as a disarticulated view of the ethmoid bone. A full version is available for purchase for \$30 online. There are some navigational stumbling blocks found in the demo version of the site, as one must access the menu button to see additional features from each screen, and clicking on a given bone is not linked to its disarticulated view. However, there are also some very nice features, such as the ability to pull up the articulations of a given bone from five views on the same page, and to either locate bony landmarks by name or discover the name by rolling over a feature on the image.

### [www.phds.org](http://www.phds.org)

*PhDs.org* is designed as a portal for current and prospective graduate students and postdocs. The site includes a graduate school search engine, with listings by departments and degree type. Users may create their own customized rankings for departments within a field by weighting criteria such as selectivity, tuition, and program size. A job board is searchable by sector, position type (including tenure-track vs. non-tenure track), keyword, and location. A variety of articles from other sites linked under Career Resources include targeted information on getting the most out of ones graduate and postdoctoral training experiences. While the collection of articles may be uneven, user rankings can help to determine which are the most valuable.

*continued on page 20*

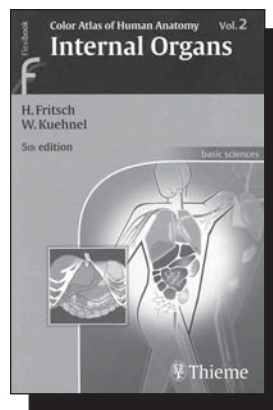
## Anatomy Book Shelf

Following publication in the AAA newsletter, all book reviews are available online at [www.anatomy.org/reviews/review.htm](http://www.anatomy.org/reviews/review.htm).

### COLOR ATLAS OF HUMAN ANATOMY, VOL. 2, INTERNAL ORGANS

Helga Fritsch and Wolfgang Kuehnel  
Georg Thieme Verlag; 2008; 5<sup>th</sup> edition; 494 pp, 194 color plates; softcover; \$37.95

The second installment of the three-volume *Color Atlas of Human Anatomy* focuses on the anatomy of internal organs. Each organ is introduced in a brief overview, followed by descriptions of its gross and microscopic anatomy, general



physiology, neurovascular supply, and lymphatic drainage. Clinical correlations are also included in discussions of topographic, cross-sectional, and radiologic anatomy of the organ. Therefore, this volume represents a hybrid between typical anatomy atlases and typical anatomy texts, by placing equal attention on text and figures.

New to the 5<sup>th</sup> edition is a chapter on pregnancy and human development, which stands out as the best-written among all chapters, perhaps because the authors specifically designed it with an eye toward modern interdisciplinary teaching methods and medical curricula. Nonetheless, I do not understand the advantage of adding this chapter to the newest edition of the atlas. The author's stated goal was to provide a valuable, pocket-sized resource for medical and dental students trying to learn the anatomy of internal organs. Discussions of conception, implantation, embryonic development, and postnatal growth do not seem to support this goal, and merely add length to the volume with little benefit. The most valuable aspects of the new chapter are the detailed descriptions of the gross and microscopic anatomy of the placenta and the discussion of parturition, specifically the anatomy and physiology behind cervical dilation and expulsion of the fetus.

While the focus on images and figures is apparent throughout the volume – for every two pages, the text on the left page refers to the figures on the right page – I was disappointed in the quality of the figures for much of the volume. Given the remarkable attention to detail I have come to expect from the most recently published Thieme atlases, the schematic depictions of much of the anatomy were unfulfilling. If I were a beginning anatomy



student, this volume would likely frustrate me because of the lack of attention to detail in labeling figures (or depicting anatomical features) when compared with other atlases. Therefore, I am not sure I would recommend this volume to a beginning student. Instead, this volume is more appropriate for medical students in their clinical years, and would serve as a valuable tool for reinforcing anatomy on-the-go.

*Jason M. Organ, Ph.D.  
Saint Louis University School of Medicine  
Center for Anatomical Science and Education*

## DIFIORE'S ATLAS OF HISTOLOGY WITH FUNCTIONAL CORRELATIONS

*Victor P. Eroschenko  
Lippincott Williams & Wilkins, December 2007, 11<sup>th</sup>  
edition, 465 pp., \$ 68.95*

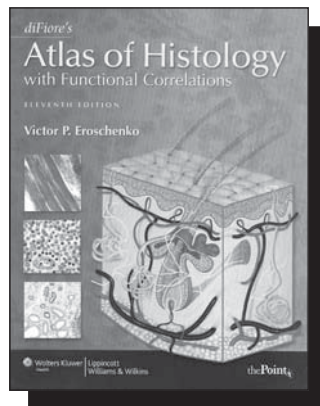
When I first received a copy of *diFiore's Atlas of Histology*, I was well impressed by the quality of the drawings that illustrate almost 90% of all pictures in the book. The well organized material covers almost all areas of histology that would be taught in a variety of health science courses, making it suitable for medical students as well as health-related careers, such as nursing, physiotherapy, or psychology.

It balances between a textbook and an atlas, which can be a problem for medical students, since it does not have the depth we would expect from an histology textbook for medical school. The large number of drawings makes it good as an atlas, but sometimes a photograph of the actual tissue would seem more valuable for using it in the lab.

As a natural tendency of including more clinical information in medical books, the book introduces what is called functional correlations—some clinical data insights related to that specific information at the end of each chapter. It is very interesting, but the use of that material is actually more informational than instructional. Perhaps dividing the book into clinical scenarios or themes instead of systems would make these functional correlations more clinically relevant.

The text is well written and clear and the index at the end and the summary at the beginning are well organized and help the reader to find the intended subject. Overall, the book has a great general appearance, is very colorful,

*continued on next page*



## Animals in Research *continued from page 9*

Newcomer was the Associate Provost for Animal Research and Resources and associate professor in the Department of Comparative Medicine at The Johns Hopkins University. He has also served as director of the Veterinary Resources Program for the Office of Research Services/OD at the National Institutes of Health, and as director of the Division of Laboratory Animal Medicine for The University of North Carolina at Chapel Hill. Newcomer holds a B.S. in zoology and M.S. in pathology from the University of Michigan and a V.M.D. from the University of Pennsylvania.

## Outreach *continued from page 10*

Arteries and veins were also available for study and students were asked to contrast the characteristics of arteries with those of veins. There was also an interactive session on the microanatomy of the heart, blood vessels, and blood cells using our virtual microscopy program. Students were asked to view images of the heart and blood vessels and correlate them with the structures that they observed in the dissected specimens. Finally, they were asked to correlate the basic anatomy of the cardiovascular system with the deep vein thrombosis case.

After a school tour that included the gross anatomy lab and the new pharmacy compounding lab, students had lunch with graduate, medical, and pharmacy students who shared their professional school experiences.

The program was designed to be entertaining, educational, and inspirational. Based on feedback from students and teachers, the program exceeded expectations. In the words of two teachers whose classes participated in the program:

*The program was probably the best I have ever taken my students to participate in. It was educational, interactive, fun, exciting, and a great overall experience. Thank you for the invitation!*

*Thanks again for the wonderful opportunity for my students. They talked about it for the rest of the school year and I am sure they will remember it for a long time. ❖*

*Jon M. Walro, Ph.D., Professor, Dept. of Anatomy,  
Northeastern Ohio Universities College of Medicine*



## RFA's & RFPs

Check AAA's Web site ([www.anatomy.org](http://www.anatomy.org)) for regular updates on research grants, fellowships, and other funding opportunities. Just go to "Awards/Grants" and click on "RFPs/ RFA's."

### Harnessing Inflammation for Reconstruction of Oral and Craniofacial Tissues (R01)

NIDCR seeks applications that will elucidate the molecular mechanisms of resolution of acute and chronic inflammation, and will develop novel multidisciplinary approaches for predictable control and patterning of tissue inflammatory microenvironments. Requires interdisciplinary and multidisciplinary research that integrates advances in disciplines such as cell and developmental biology, stem cell biology, and immunology, with advances in chemistry, pharmacology, and bioengineering. Multiple PI application strongly encouraged. Letters of intent due Sept. 30; applications due Oct. 31. Runs parallel with Exploratory/Developmental (R21) grant (see below). <<http://grants.nih.gov/grants/guide/rfa-files/RFA-DE-09-001.html>>

### Harnessing Inflammation for Reconstruction of Oral and Craniofacial Tissues (R21)

Runs parallel with R01 grant (see above). Letters of intent due Sept. 30; applications due Oct. 31. <<http://grants.nih.gov/grants/guide/rfa-files/RFA-DE-09-002.html>>

### NIGMS National Centers for Systems Biology (P50)

NIGMS invites applications for National Centers for Systems Biology to promote institutional development of pioneering research, research training, and outreach programs focused on systems-level inquiries of biomedical questions within the NIGMS mission. Letters of intent due Sept. 24; applications due Oct. 24. <http://grants.nih.gov/grants/guide/rfa-files/RFA-GM-09-009.html>

### Book Shelf *continued from previous page*

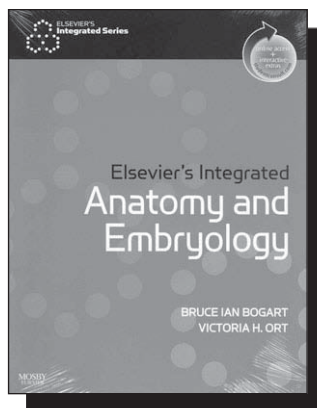
and offers a very pleasant reading experience. While not a first choice for the medical student (particularly with less expensive classic histology textbooks available), it can be a good choice for the non-medical student as an atlas full of drawings and basic content, at a fairly good price.

Ariel Gustavo Scafuri, M.D., Ph.D.,  
Dept. of Morphology, Universidade Federal do Ceara

### ELSEVIER'S INTEGRATED ANATOMY AND EMBRYOLOGY

Bruce Ian Bogart and Victoria H. Ort  
Moby Elsevier, 2007, 403 pp +index, \$39.95

*Anatomy and Embryology* is part of Elsevier's Integrated Series of review books for the USMLE Step 1 exam. The books in this series are also designed to allow students easy access to review material while they are taking the course. In addition to the text, students gain access to the student consult site, which contains additional content and sample questions for each chapter. Beyond the standard review material, which is concise and plainly written, there is



ample clinical material that reinforces the basic information. A major asset of this series is that, where appropriate, there are vignettes to concepts from the other basic sciences, allowing the student to better integrate this information.

The gross anatomy in this text is concise and should provide good review of the material for the USMLE.

The embryology, while not as extensive, provides an adequate explanation of normal development from a morphological basis, but contains little molecular development.

One drawback to this book is the lack of sample questions on the basic information in the chapters. While these are available on the Web site, having some review questions in the text would be helpful for students who may not have total access to the Internet. A second drawback is that this volume appears to be short on integration—for example, there are no vignettes for the physiology or biochemistry of digestion and peristalsis during discussion of the digestive system, or for the physiology of heart contraction and EKGs in the thorax section.

Overall, this text is a good addition to Elsevier's integrated series of review texts and should provide adequate review material, along with the added Student

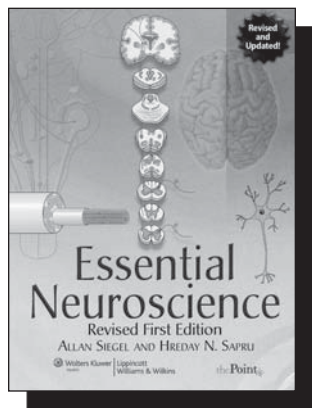
Consult Web site, for gross anatomy and embryology course work or the USMLE.

*Allan R. Sinning, PhD.  
Department of Anatomy  
University of Mississippi Medical Center*

## ESSENTIAL NEUROSCIENCE

*Allan Siegel and Hreday N. Sapru  
Lippincott Williams & Wilkins, October 2007; revised  
1<sup>st</sup> edition; 521 pp. + glossary and index, \$62.95*

This is the revised first edition of this textbook written for medical and graduate students. In comparing the first printing with this edition, it appears that the major revision is the ability of the book's owner to login to <http://thePoint.lww.com/Siegel> and have access to the book's fully searchable online text.



Each chapter begins with specific learning objectives and ends with self-assessment questions in the USMLE format. The book first presents foundational concepts and support systems and concludes with chapters discussing the

sensory, motor, and integrative systems. Clinical cases included in each chapter give a concise history, examination results, and a succinct explanation of the patient's neurological deficits.

The authors do a very nice job of reducing unnecessary detail and emphasizing the neuroscience information that has clinical relevancy. The balanced presentation of the neuroanatomy and physiology enables the reader to grasp the essential concepts and principles that are being presented. Whenever feasible, the authors take the opportunity to give the neuroscience under discussion a clinical context.

The multi-colored artwork is clean and presents both the neuroanatomical and functional considerations concisely. Figure legends are well-written and represent the essential information that the authors are attempting to communicate in their figures. Tables are used sparingly, but when they are used, they present the information in a clear and concise manner.

An extensive glossary thoroughly describes or defines the technical terminology used throughout the book, and there are cross-references throughout the glossary. The index is to be applauded because the authors have keyed it to indicate references to figures, tables, glossary

*continued on next page*

## Integrative Systems Biology Approaches to Auditory Hair Cell Regeneration (R01)

NIDCD invites grant applications using comprehensive systems biology approaches intended to restore lost auditory hair cells and their sensory function following damage to the inner ear from a variety of factors including disease, aminoglycosides, noise, and aging. Runs parallel with NIH Exploratory/Developmental (R21) grant (see below). <http://grants.nih.gov/grants/guide/pa-files/PA-08-177.html>

## Integrative Systems Biology Approaches to Auditory Hair Cell Regeneration (R21)

Runs parallel with R01 grant (see above). <http://grants.nih.gov/grants/guide/pa-files/PA-08-176.html>

## Carlin Bokal Joins AAA National Office

AAA newest staff member is Carlin Bokal, who joins the National Office after almost eight years in Career Services at The Catholic University of America, where she most recently served as associate director. Her responsibilities there included providing career counseling for undergraduate and graduate students and alumni, job and internship search assistance, mock interviews, and developing career-related programming. She also spent two years in career consulting work and was an academic advisor at the University of Maryland, College Park.



All of this experience, plus Carlin's MA/AGS in Community and Career Counseling from the University of Maryland, College Park, will stand her in good stead as she assumes the newly created position of Education & Professional Development Associate. In this role, Carlin will be responsible for AAA's education-related projects, both those that currently exist and those that are still a gleam in someone's eye! Among these are AAA's Outreach Grant program, the Education & Teaching Tools component of the Web site, our Postdoctoral Fellowship and Education Research Scholarship programs, the upcoming Anatomy Educator Training program, and a mentoring program to be launched next spring. Stay tuned!

Carlin lives in Columbia, Maryland, with her husband and two children. ❖



## Book Shelf *continued from previous page*

entries, and related topics or more detailed subtopic lists, in addition to the pages where a topic or concept is discussed.

Since neuroimaging is playing an increasingly fundamental role in all aspects of neurological diagnosis and management, a suggestion for future editions of this text would be the inclusion of much more imaging. There are many opportunities throughout the text to facilitate the student's recognition of common neurological disorders using a variety of imaging modalities.

*Essential Neuroscience* gives the reader a strong foundation in basic neuroscience concepts and principles important for understanding diseases and dysfunction of the nervous system.

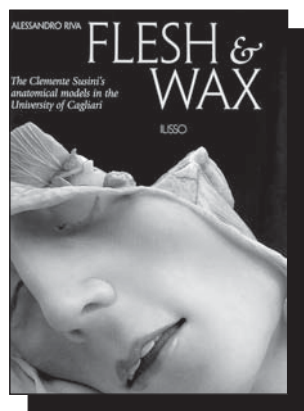
Bruce F. Giffin, M.S., Ph.D.,  
Dept. of Cancer and Cell Biology,  
University of Cincinnati College of Medicine

## FLESH & WAX: CLEMENTE SUSINI'S ANATOMICAL MODELS IN THE UNIVERSITY OF CAGLIARI

Alessandro Riva, editor

Ilisso Publishing House, 2007; 211 pp., €56.00

Alessandro Riva's *Flesh & Wax* is not your ordinary coffee table book. It is a book about beautiful models, but these are not models of the Tyra Banks variety. On the cover is the face of a young woman: her lips are parted slightly, as if to offer a comment or a wry smile toward furthering the conversation happening around her. An otherwise strikingly beautiful woman, except for the unnatural flap of skin that is peeled inferomedially, displaying the sanguineous details of her open orbital cavity and temporal fossa to all who would turn their gaze beyond her lips. She is one of



the ceroplast models from the collection of the University of Cagliari, which are the subject of this book.

Ceroplasty (Gr., *keros*, wax + *-plasty*, from *plassein*, to shape or mold), as utilized in educational practice, grew into prominence in Bologna, Italy, during the late 17<sup>th</sup> century. A medieval European tradition of making elaborative votive offerings of human figures out of wax was waning, and artisans skilled in wax modeling were now commissioned to reproduce botanical and animal specimens for the relatively new market of scientific museums.

Although Gaetano Giulio Zumbo is credited with making the first human anatomical waxes, it was Ercole Lelli in Bologna who was given the task of creating a series of waxes for a new Anatomical Museum, commissioned by none other than Pope Benedict XIV. Benedict, a Bolognese himself, knew Lelli from the latter's work on the famous anatomy theater and saw great value in the teaching of anatomy through waxes. In particular, such teaching could be done at times when anatomies could not be conducted in the theater.

Bologna already had its share of scientific wax models. Among the first scientific waxes created were those developed for the famous Bolognese botanist, Ulysses Aldrovandi. A forerunner of Linneaus, Aldrovandi was said to have commissioned ceroplast replicas of plants as a means to preserve rare specimens brought to him by sailors returning from voyages across the oceans.

The museum collection featured in this book owes itself to one such sabbatical voyage of Francesco Antonio Boi, who held the chair in anatomy at the University of Cagliari. In September 1801, Professor Boi found himself in the awkward but liberating position of having no students enrolled for him to teach, as there were no new medical students that year. Boi did exactly what many of us would do under the circumstances: he sought out and received a grant from the Viceroy of Sardinia to visit the famous anatomic teaching centers of the day, notably on the Italian mainland. To those more familiar with an anatomical atlas than with a geographical one, Cagliari lies on the southern tip of Sardinia in the Mediterranean Sea. Boi proposed traveling to visit the anatomical hotbeds of his day: the great Antonio Scarpa and his anatomical theatre in Pavia, and ultimately to study in Florence, where Peter Leopold, the Grand Duke of Tuscany, was bringing in anatomists from throughout northern Italy to develop a new anatomy program.

While in Florence, Boi saw the ceroplastics workshop of the Museum of Physics and Natural History (La Specola) in which Felice Fontana had begun operations in 1771. Throughout the end of the 18<sup>th</sup> century, this Florentine workshop would craft anatomical waxes for clients throughout Europe. Antonio Boi himself obtained permission from the Sardinian Viceroy to commission a series of anatomical waxes for use in teaching at Cagliari. The ceroplast modeler he chose was Clemente Susini. Susini had joined Fontana's *La Specola* workshop in 1773 and had been its chief wax modeler since 1782.

"Wax" in the 18<sup>th</sup> century consisted not of synthetic paraffins, as might be the case today, but rather of beeswax, which was harvested, purified, and then mixed with a variety of substances, notably animal fat and natural pigments. The resulting material could be molded, sculpted, using added features such as real human hair applied to give details as chin whiskers, eyebrows, eyelashes,

*continued on page 20*

# AAA – An Awarding Association

## Recognizing the best in anatomical sciences & education!

Could you use \$20,000 to supplement your postdoctoral salary or \$5,000 for your education research? Or is there a colleague or mentor who inspires you and deserves to be nominated for an AAA award? If so, read on...

### AAA Postdoctoral Fellowship Program

**Application deadline: October 1<sup>st</sup>**

Any aspect of biology relevant to the anatomical sciences. Either the postdoctoral applicant or the host sponsor (or both) must be a permanent resident of the U.S. or Canada; however, fellowships can be used in any country.

### AAA/Wiley A.J. Ladman Exemplary Service Award

**Nomination Deadline: October 15<sup>th</sup>**

Who has provided exceptional service to the Society. \$1,000 honorarium provided by Wiley-Liss.

### Basmajian Award

**Nomination deadline: October 15<sup>th</sup>**

Recognizes health science faculty in the formative stages of their career, teach human or veterinary gross anatomy, who can document excellence in their contribution to the teaching of gross anatomy, and have outstanding accomplishments in biomedical research or scholarship in education. \$1,000 honorarium, two years free AAA membership and free registration to Experimental Biology in 2009 and 2010.

### Henry Gray/Elsevier Distinguished Educator Award

**Nomination deadline: October 15<sup>th</sup>**

Who has provided exceptional service to the Society. \$4,000 honorarium provided by Elsevier.

### Henry Gray/Lippincott Williams & Wilkins Scientific Achievement Award

**Nomination deadline: October 15<sup>th</sup>**

Who has provided exceptional service to the Society. \$1,500 honorarium provided by Lippincott Williams & Wilkins.

### Lippincott Williams & Wilkins/AAA Education Research Scholarship

**Application deadline: October 15<sup>th</sup>**

The LWW/AAA Scholarship supports an AAA member who is a graduate student in a mentored project, or a postdoctoral fellow or junior faculty member who wishes to develop a project that shows promise as a model for improving the quality of teaching and learning in anatomical education. \$5,000 scholarship provided by Lippincott Williams & Wilkins.

### Fellow of the American Association of Anatomists

**Nomination deadline: December 1<sup>st</sup>**

The rank of Fellow is designed to honor distinguished members who have demonstrated excellence in science and in their overall contributions to the anatomical sciences.

Who has provided exceptional service to the Society.

### AAA Honorary Membership

**Nomination deadline: December 1<sup>st</sup>**

Periodically, AAA grants honorary membership to recognize exceptional accomplishments in the anatomical sciences.

### Keith & Marion Moore Young Anatomist's Publication Award

**Nomination deadline: December 1<sup>st</sup>**

Recognizes the best manuscript by a young anatomist in one of the Society's journals: *The Anatomical Record*, *Anatomical Sciences Education*, or *Developmental Dynamics*. The recipient is presented with a \$500 honorarium.

For most awards, nominators are only responsible for submitting their own letter of recommendation and their nominee's CV.

**For full details and to submit your nominations or apply online:**

**Go to: [www.anatomy.org](http://www.anatomy.org) or e-mail: [exec@anatomy.org](mailto:exec@anatomy.org)**

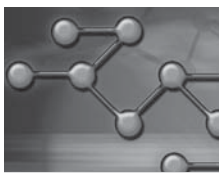
## Book Shelf *continued from page 18*

and beard stubble—all to achieve a profound realism that nonetheless convincingly displayed a body on a dissection table rather than a salon sofa. Such was the level of artistic ability among the wax artists that, once upon a time, to be compared to a wax figure was a high compliment of beauty.

The central feature of the book is its large, lovingly rendered color photographs of the Susini waxes. These photos are of highest quality and are laid alongside smaller gray-scale images that have important anatomic landmarks labeled. The models represent a full spectrum of gross anatomy—the really remarkable ones appear to be life-size, although there are some larger-than-life models of the eye and sense organs included in the photographs of the collection.

The text, comprising essays by a number of authors familiar either with the collection or its history, has its share of typographical errors, but this is a trifle. Viewing the waxes is a powerful experience—from the eerie beauty of the models to the exquisite detail shown in their execution and presentation. Throughout history, viewing the waxes has elicited strong emotional feedback, in many ways not unlike the present attentions paid to traveling shows of plastinated corpses. The most striking aspect of viewing these waxes, even in the photographs of this book, is how remarkably lifelike they appear, even when pigmented to appear as cadavers. The anatomical waxes of La Specola in general, and the Cagliari models by Clemente Susini in particular, represent teaching models of cadaver specimens prepared collaboratively between anatomist/dissectors and master artists, each informing the work of the other. The resulting collaborations and their remarkable history make this book a compelling addition to the collection of any anatomist or historian of science.

*Jon Jackson, Ph.D., Dept. of Anatomy and Cell Biology,  
University of North Dakota School of Medicine and  
Health Sciences*



## Hotlinks *continued from page 14*

### [www.mentornet.net](http://www.mentornet.net)

If you are a student, postdoc, or untenured faculty member looking for more specific one-on-one guidance, check out the e-Mentoring program at Mentor Net. The site claims to have established over 22,000 mentoring relationships in the past decade, with a specific focus on providing career support to women and minorities.

## HUMAN ANATOMY

*Michael McKinley and Valerie Dean O'Loughlin  
McGraw Hill 2008; 2<sup>nd</sup> edition, 874 pp, hardcover, \$165.31*

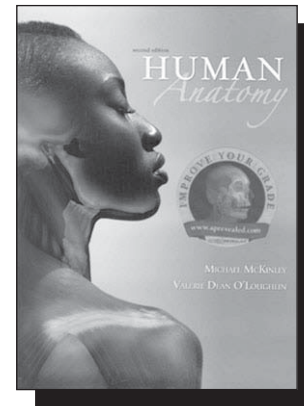
I received this book for review thinking it was intended for medical gross anatomy courses. It is not. As clearly stated in the introduction, this book is intended for upper level undergraduate courses in human anatomy. Further, the authors have written this book assuming that the students can take an anatomy course without prior coursework in biology or chemistry. There are six introductory chapters clearly outlining fundamental concepts in everything from cell biology through the basic tissues.

The textbook is well illustrated using many different types of images. The authors did an outstanding job selecting a wide variety of interesting, visually pleasing, and easily understood illustrations. I found the embryology illustrations particularly clear. Cadaveric photos are used effectively in many of the chapters. Radiographs and surface anatomy photos demonstrate other interesting aspects of the anatomy. I enjoyed the visual presentation of the text.

The text is filled with numerous study aides to assist the student in learning the material presented. Students are asked “what they think” and “what did they learn” frequently throughout this text. At the end of each chapter, there are formative tests to take and there are numerous applied anatomical scenarios presented throughout. Clinical vignettes are the most numerous, but there are also embryology and geriatric examples. I applaud the authors for the latter. Forensic anthropology examples are also used where appropriate.

An included CD allows students to study the anatomical sciences using cadaveric pictures, light micrographs, and various imaging techniques. All in all, this is an excellent, well illustrated text that would be a top choice if I were teaching an undergraduate anatomy course. The authors have offered such a rich array of learning tools that this book should pique the interest of students who embody a multitude of learning styles. ❖

*Neal A. Cross, Ph.D., Professor and Chair,  
Department of Anatomy,  
Lincoln Memorial University,  
DeBusk College of Osteopathic Medicine*





# American Association of Anatomists

## Student/Postdoctoral & Young Faculty Travel Awards

### General Requirements & Guidelines for Student/Postdoctoral Awards

1. AAA student/postdoctoral member (2009 dues/renewal paid by abstract submission deadline).
2. First author and presenter at EB 2009.
3. Must be giving either a poster or a platform presentation.
4. Posters must be put up by 8:30 a.m. on the day they are scheduled and remain up until 5:00 p.m. Authors are required to be at their posters from 12:30-2 p.m. Poster presentation is limited to 5 minutes. Presentation times for non-AAA posters will be arranged individually.
5. All awards are presented at the AAA Annual Banquet on Tuesday, April 21; each Travel Award includes a free AAA Annual Banquet ticket so that all award candidates can attend. Additional tickets may be purchased online prior to the meeting.
6. All applicants must pick up their Banquet ticket by Sunday, April 19, in person at the AAA office during EB 2009.
7. Additional requirements and details related to individual awards are noted below.
8. Applicants may only be judged for one award, in addition to receiving a Travel Award
9. Only applications with confirmed abstracts will be considered. No substitution of first author/presenter is allowed.

### AAA Young Faculty Travel Award – Supported by AAA Second Century Fund.

- Up to five prizes of \$500 awarded on a competitive basis, plus a complimentary AAA Annual Banquet ticket.
- Must have been an AAA member for at least one year prior to abstract deadline.
- Must be a junior faculty member who is first or last author and presenter of a poster or a platform presentation at EB 2009.
- Recipients notified about six weeks after deadline; checks distributed at the AAA Annual Banquet on Tuesday, April 21.

### AAA Student/Postdoctoral Travel Award

- A travel grant, plus a complimentary ticket to the AAA Annual Banquet; no competition required.
- \$250 travel grant will be awarded to AAA Student/Postdoctoral Members who have joined less than one year prior to the abstract deadline; \$350 travel grant will be awarded to AAA Student/Postdoctoral Members who have been an AAA member for at least one full year prior to the abstract deadline.
- Checks are distributed at the AAA Annual Banquet on Tuesday, April 21.

### AAA Postdoctoral Platform Presentation Award

- First prize: certificate and \$500. Two runners-up: certificate and \$150.
- Must be a postdoctoral fellow or medical resident/intern (within 5 years of Ph.D. or M.D.) presenting at an *AAA platform session*.
- Submitted abstracts judged to determine 6 finalists, who are notified approximately 6 weeks after abstract deadline.
- Finalists will be judged in the Postdoctoral Platform Session scheduled for Saturday, April 18 from 3:30–5 p.m. Finalists must also present in the platform session the abstract was submitted to, if selected by session organizer.

### AAA Langman Graduate Student Platform Presentation Award – Honors noted embryologist and educator, Jan Langman.

- First prize: certificate and \$500. Two runners-up: certificate and \$150.
- Must be a graduate student or medical/dental/vet student presenting at an *AAA platform session*.
- Submitted abstracts judged to determine 6 finalists, who are notified approximately 6 weeks after abstract deadline.
- Finalists will be judged in the Langman Platform Session scheduled for Saturday, April 18 from 5:30–7 p.m. Finalists must also present in the platform session the abstract was submitted to, if selected by session organizer.

### AAA Postdoctoral Poster Presentation Award

- \$400 prize and certificate.
- Submitted abstracts judged to determine finalists, who are notified approximately 6 weeks after abstract deadline.
- Must be a postdoctoral fellow or medical resident/intern (within 5 years of Ph.D. or M.D.) giving a poster presentation (see General Requirements above).

### AAA Graduate Student Poster Presentation Award

- \$400 prize and certificate.
- Submitted abstracts judged to determine finalists, who are notified approximately 6 weeks after abstract deadline.
- Must be a graduate student or medical/dental/vet student giving a poster presentation (see General Requirements above).

### AAA Student/Postdoctoral Education Research Award

- \$400 prize and certificate.
- Submitted abstracts judged to determine finalists, who are notified approximately 6 weeks after abstract deadline.
- Must be a graduate student, medical/dental/vet student, postdoctoral fellow or medical resident/intern (within 5 years of Ph.D. or M.D.) giving a poster presentation related to education or teaching (see General Requirements above).

### AAA Undergraduate Student Poster Presentation Award

- \$400 prize and certificate.
- Must be an undergraduate student giving a poster presentation in an AAA session (see General Requirements above).

**Application Deadline: November 5, 2008**

**\*\*\*Review eligibility requirements carefully, then apply online when submitting your abstract: [www.eb2009.org](http://www.eb2009.org)\*\*\***

**Questions? Call 301-634-7910 or e-mail [exec@anatomy.org](mailto:exec@anatomy.org).**

# Anatomy Comes to Life

## Don't Just Sit There – Participate!

It's a generally accepted maxim of learning that you get more out of *participating* in an activity than you do by just showing up. With that in mind, it's time to start thinking about the abstract that you're going to submit for the AAA Annual Meeting at EB 2009—it's due by Wednesday, November 5!

If you're wondering whether there will be enough to hold your attention once you've presented your own platform talk or poster, read on.

## Guest Societies

Beyond the exceptional AAA scientific and education program, AAA is hosting the annual meetings of three guest societies—the Anatomical Society of Great Britain and Ireland (ASGBI), The Histochemical Society (HCS), and the North American Vascular Biology Organization (NAVBO). Help us welcome their members and take advantage of the synergy created by their participation and programming.

## Education & Teaching Track

AAA's E&T program opens on Saturday with a workshop on using fresh tissue to teach anatomy, and includes a master class on the lower respiratory system, a refresher course on the limbic system, and sessions on use of cinema in the classroom, myocardial infarction, and integrating histology in the med school curriculum. After the plenary talks on Sunday morning, a special education plenary symposium will be held, featuring proactive approaches to anatomical education in a medical curriculum. The Anatomy Education Roundtables and two teaching innovations sessions round out the AAA program.

## Stem Cell Mini-meeting

This two-day meeting—five symposia, a poster session, and the keynote—will cover the biology and potential therapeutic applications of stem/progenitor cells, function and immunity of stem cell-derived hematopoietic cells, stem cell dynamics & bioengineering, and stem cell plasticity and homing in their histological context.

## On Your Mark, Get Ready, Submit!

Did you know that you can submit *more than one abstract*? Keep that in mind as you review the significantly expanded the list of hybrid, platform, and poster topics (pages 30-31). Decide where your work fits in, then head to <[www.eb2009.org](http://www.eb2009.org)> for details on how to submit an abstract, apply for travel awards, register for the meeting, and book your hotel.

Mark your calendar for April 18-22. See you in New Orleans!

## Special Lectures

**Keynote Speaker** – Monday, April 20, 5-6 p.m.



**John Gearhart, Ph.D.**

C. Michael Armstrong Professor of Medicine  
Director, Stem Cell Program  
Johns Hopkins Univ. School of Medicine

*Regenerative Medicine: Learning to Instruct Our Own Cells*

**Plenary Speakers** – Sunday, April, 19, 8-10 a.m.



**Robert S. McCuskey, Ph.D.** (Univ. of Arizona College of Medicine)

Professor Emeritus

*The Hepatic Microvascular System in Health & Disease*



**Duane E. Haines, Ph.D.** (Univ. of Mississippi Medical Center)

Chairman & Professor, Department of Anatomy

*The Changing Landscape of Anatomical Education: One Opinion on How We Might Increase the Value of Our Stock*

**AAA Young Investigator Award Symposium** – Sunday, April 19, 5-7 p.m.

*Awardees to be announced in late 2008*

R.R. Bensley Award Lecture in Cell Biology

C.J. Herrick Award Lecture in Neuroanatomy

H.W. Mossman Award Lecture in Developmental Biology

AAA Morphological Sciences Award Lecture

**Earl P. Benditt Award Lecture & Presentation**

*Sponsored by NAVBO*

**Aldons J. Lulis** (Univ. of California, Los Angeles)

*Cardiovascular Traits: From Genetics to Systems Biology*

**Journal of Histochemistry & Cytochemistry Plenary Lecture***Sponsored by HCS*

**Heinz-Ulrich Weier** (UC-LBNL, Life Sciences Division)  
*From Molecules to Man - Molecular Cytogenetics in the 21st Century*

## Plenary Symposia

**THE HEPATIC SINUSOID & ITS UNIQUE ENDOTHELIUM**

*Henry Gray/Lippincott Williams & Wilkins Scientific Achievement Award Symposium*

*Chair: Robert McCuskey* (Univ. of Arizona College of Medicine)

**Laurie DeLeve** (Univ. of Southern California)  
 Sinusoidal Endothelial Cells Cross-Talk with Other Liver Cells

**Bard Smedsrod** (Univ. of Tromsø)  
 Scavenger Function of Liver Sinusoidal Endothelial Cells

**Percy Knolle** (Univ. of Bonn)  
 Immune Functions of Liver Sinusoidal Endothelial Cells

**David LeCouteur** (Univ. of Sydney)  
 Aging & the Hepatic Sinusoidal Endothelium

**A PROACTIVE APPROACH TO ANATOMICAL EDUCATION IN A CONTEMPORARY MEDICAL CURRICULUM**

*Henry Gray/Elsevier Distinguished Educator Award Symposium*

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

**Richard Drake** (Cleveland Clinic Lerner College of Medicine)  
 We Can't Teach Everything: Less Can Be More

**Darrell Evans** (Brighton & Sussex Medical School Anatomy)  
 Anatomy Leading the Competition: Variety is the Spice of Life

**Jeffrey Laitman** (Mount Sinai School of Medicine)  
 Dancing with the Devil? Teaming with Deans to Take Anatomy to a Bold New Future

## Stem Cell Mini-meeting

**BIOLOGY & POTENTIAL THERAPEUTIC APPLICATIONS OF STEM/PROGENITOR CELLS**

*Chair: Darwin Prockop* (Tulane Univ. Health Sciences Center)

**Yufang Shi** (Robert Wood Johnson Medical School)  
 Immunosuppression by Mesenchymal Stem Cells

**Darwin Prockop** (Tulane Univ. Health Sciences Center)  
 Multiple Ways that Adult Stem/Progenitor Cells (MSCs) Respond to Cross-talk with Injured Tissues to Repair Them

**Evan Snyder** (Burnham Institute for Medical Research)  
 Homeostatic Pressure Exerted by Stem Cells in Degenerative or Injured CNS Environments

**Armand Keating** (Univ. of Toronto)  
 Novel Stem/Progenitor Cells

**FURTHER BIOLOGY & POTENTIAL THERAPEUTIC APPLICATIONS OF STEM/PROGENITOR CELLS**

*Chair: Darwin Prockop* (Tulane Univ. Health Sciences Center)

**Paul Simmons** (Univ. of Texas Health Science Center)  
 Exploring the Perivascular Niche of Mesenchymal Stem Cells

**Christof Westenfelder** (Univ. of Utah School of Medicine)  
 Treatment of Acute Renal Failure with Allogenic Marrow Stromal Cells: Short- & Long-Term Effects in Experimental Models

**Donald Phinney** (Tulane Univ. Health Sciences Center)  
 Functional Heterogeneity of MSC Populations Provides Clues to Their Broad Therapeutic Efficacy

**Jeffrey Spees** (Univ. of Vermont)  
 Subpopulation of Non-Hematopoietic Progenitor Cells from Human Bone Marrow

**FUNCTION & IMMUNITY OF STEM CELL-DERIVED HEMATOPOIETIC CELLS**

*Co-sponsored by NAVBO*

*Chair: Nicholas Zavazava* (Univ. of Iowa)

**Hannes Klump** (Transplantation Research Center)  
 From Birth to Adulthood in a Nutshell: Hematopoietic Stem Cell Development *In Vitro* & HOXB4

**Mickey Bhatia** (McMaster Univ.)  
 Blood Development from Human Pluripotent Stem Cells

**Boris Reizis** (Columbia Univ. Medical Center)  
 Transcriptional Regulation of Self-Renewal in Embryonic & Hematopoietic Stem Cells

**Nicholas Zavazava** (Univ. of Iowa)  
 Embryonic Stem Cell-Derived Hematopoietic Cells: Are they Immunocompetent?

**STEM CELL DYNAMICS & BIOENGINEERING: A SYNERGISTIC APPROACH**

*Co-sponsored by ASGBI*

*Chairs: Stefan Przborski* (Univ. of Durham) & **Di Lawrence-Watt** (Brighton & Sussex Medical School)

**Ketan Patel** (Univ. of Reading)  
 Regulation of Satellite Cell Proliferation & Adult Skeletal Muscle Regeneration by the WNT Family of Signalling Molecules



**Molly Shoichet** (Terrence Donnelly Centre Cellular & Biomolecular Research)  
Cell Guidance Strategies

**Elizabeth James** (Univ. of Brighton)  
The Clinical Application of Cultured Cells: Are They Permanent or Just an Effective Temporary Dressing?

**Stefan Przyborski** (Univ. of Durham)  
Enabling Technology that Allows the Routine Growth of Cultured Cells for Applications in Tissue Engineering

### STEM CELLS: PLASTICITY & HOMING IN THEIR HISTOLOGICAL CONTEXT

*Co-sponsored by HSC*

*Chair: Heinz-Ulrich Weier* (UC-LBNL, Life Sciences Division) & **Peter Quesenberry** (Rhode Island Hospital)

**Peter Quesenberry** (Rhode Island Hospital)  
The Paradoxical Dynamism of Marrow Stem Cells

**Jason Aliotta** (Rhode Island Hospital)  
Stem Cells & the Lung

**Esmail Zanjani** (Univ. of Nevada, Reno)  
Generation of Functional Humanized Liver in Sheep by Bone Marrow Cells

**Mariusz Ratajczak** (Univ. of Louisville)  
Very Small Embryonic Like (VSEL) Stem Cells: Characterization, Biological Significance & Potential Applications

## Education & Teaching Track

### ANATOMY EDUCATION BREAKFAST ROUNDTABLES

#### MASTER CLASS: THE LOWER RESPIRATORY SYSTEM

*Chair: David Bolender* (Medical College of Wisconsin)

**Tim LeCras** (Cincinnati Children's Hospital Medical Center)  
Pathogenesis of Lung Remodeling in the Developing & Adult Lung: Role for the EGF Receptor

**Alan Jobe** (Cincinnati Children's Hospital)  
Clinical Diffuse Lung Injury & Remodeling

**Michael Benjamin** (Cardiff Univ.)  
Teaching the Microscopic Anatomy of the Respiratory System to Medical Students

**John Morris** (Oxford Univ.)  
Teaching the Functional Anatomy of the Respiratory Tract to Medical Students

### REFRESHER COURSE: THE LIMBIC SYSTEM

*Chair: Jennifer McBride* (Cleveland Clinic Lerner College of Medicine)

**James Walker** (Purdue Univ. Department of Basic Medical Sciences)  
Overview of Limbic System Anatomy & Organization

**James Culberson** (West Virginia Univ. School of Medicine)  
Evolution of Teaching the Limbic System

**Jayaraman Rao** (LSU Medical School)  
Clinical Correlations to Limbic System Structure & Function

**J. Richard Greene** (Univ. of Bristol)  
Modeling the Nuclei & Pathways of the Limbic System Using the BrainTower Functional Neuroanatomy System

### WORKSHOP: USING FRESH TISSUE TO TEACH ANATOMY

*Chair: Noelle Granger* (Univ. of North Carolina)

**Robert Acland** (Univ. of Louisville)  
The University of Louisville Fresh Tissue Dissection Laboratory: 25 Years' Experience with Unembalmed & Minimally Embalmed Human Tissue

**Terry Regnier** (College of Medicine, Mayo Clinic)  
Utilization of Fresh Tissue in the Procedural Skills Laboratory at Mayo Clinic

**Richard Whitworth** (LSU Medical Center Dept. of Anatomy)  
At LSU Health Sciences Center, Fresh is Best!

**James Johnson** (Wake Forest Univ.)  
An Anatomical Resource Clinical Training Center Using Cadavers as Simulated Patients: Utility, Management & Best Practices

### ALL ABOUT MYOCARDIAL INFARCTION: A PARADIGM FOR INTEGRATED COURSE DELIVERY

*Chair: Camille DiLullo* (Philadelphia College of Osteopathic Medicine)

**David Addley** (Univ. of South Florida)  
Myocardial Infarction: How Times Have Changed

## PLATFORM SESSIONS • PLATFORM SESSIONS • PLATFORM SESSIONS • PLATFORM SESSIONS • PLATFORM SESSIONS

### PLATFORMS SESSIONS

are made up of oral presentations selected from submitted abstracts. Abstracts not selected for a platform session will be assigned to a poster session.

### ADVANCES IN NEURAL INJURY & REPAIR (7000-AAA)

*Chair: Keith Fargo* (Loyola Univ. Chicago)

### DEVELOPMENT & EVOLUTION (7002-AAA)

*Chair: Stephen Moorman* (Robert Wood Johnson Medical School)

### INTEGRATING HISTOLOGY IN THE MEDICAL SCHOOL CURRICULUM (7003-AAA)

*Chair: Robert Spears* (Baylor College of Dentistry)

## AAA ANNUAL MEETING/EB 2009 18–22 NEW ORLEANS

**Kersti Linask** (Univ. of South Florida)  
Cellular & Molecular Perspectives of Cardiac Development

**Gary Lyons** (Univ. of Wisconsin)  
Stem Cell-based Therapies for Treating Myocardial Infarction

**Camille DiLullo** (Philadelphia College of Osteopathic Medicine)  
Together at First: Integrated Delivery of Basic & Clinical Sciences

### LIFE SCIENCE EDUCATION IN THE 21ST CENTURY: MAKING THE SCIENCE WE TEACH REFLECT THE SCIENCE WE PRACTICE

*EB-sponsored Symposium*

*Chair:* **Dee Silverthorn** (Univ. of Texas) & **Lynelle Golden** (Bastyr Univ.)

**Jim Collins** (NSF)  
Biology in the 21st Century: The Life Sciences in Transition

**Peter Bruns** (HHMI)  
Bio 2010 is Almost Here: Are We Responding?

**Katherine Semsar** (Univ. of Colorado)  
The CU Science Education Initiative

**Clifton A. Poodry** (NIGMS/NIH)  
**Frank Keil** (Yale Univ.)

### USE OF CINEMA IN THE CLASSROOM

*Chair:* **R. Ranney Mize** (LSU Health Science Center)

**Bruce Fuchs** (NIH Office of Science Education)  
NIH & Science in the Cinema

**Beth Fischer** (Univ. of Pittsburgh)  
The Use of Commercial Films to Teach Ethics

**Michael Zigmund** (Univ. of Pittsburgh School of Medicine)  
How to Use Cinema to Teach Teaching

**R. Ranney Mize** (LSU Health Science Center)  
Cinema & Medical Neuroscience

### INTEGRATING HISTOLOGY IN THE MEDICAL SCHOOL CURRICULUM (7003-AAA)\*

*Chair:* **Robert Spears** (Baylor College of Dentistry)

### A PROACTIVE APPROACH TO ANATOMICAL EDUCATION IN A CONTEMPORARY MEDICAL CURRICULUM (See page 23)

### TEACHING INNOVATIONS IN ANATOMY (7008-AAA)\*

*Chair:* **Jim Brokaw** (Indiana Univ. School of Medicine) & **Carol Nichols** (Medical College of Georgia)

## Scientific Symposia

### BIOPHYSICAL REGULATION & COMPUTATIONAL MODELS OF VASCULAR CELL BEHAVIOR

*Sponsored by NAVBO; co-sponsored by AAA*

*Chair:* **Charles Little** (Univ. of Kansas Medical Center)

**Charles Little** (Univ. of Kansas Medical Center)  
Biophysical Studies of Vascular Pattern Formation

**Mary Dickinson** (Baylor College of Medicine)  
Contributions of Blood Flow to Cardiovascular Development

**A. Wayne Orr** (LSU Health Science Center)  
Effects of Mechanical Forces on Vasculature

**Amy Bauer** (Los Alamos National Lab)  
A Network Model of Endothelial Cell Receptor Crosstalk during Tumor Angiogenesis

### BLOOD VESSEL CLUB: GENETIC APPROACHES TO VASCULAR DISEASE

*Co-sponsored by ASIP & NAVBO*

*Chairs:* **Douglas Marchuk** (Duke Univ.) & **Luisa Iruela-Arispe** (Univ. of California, Los Angeles)

**Douglas Marchuk** (Duke Univ.)  
Molecular Genetic Mechanisms of Vascular Malformation Pathogenesis: Lessons from Human & Mouse Genetics

**Dean Y. Li** (Univ. of Utah)  
Vascular Stability & Malformations

### CARDIOVASCULAR SYSTEM & AGING

*Co-sponsored by NAVBO*

*Chair:* **Eduard Dedkov** (New York College of Osteopathic Medicine)

**Douglas Seals** (Univ. of Colorado)  
Aging & Vascular Endothelial Dysfunction

## PLATFORM SESSIONS • PLATFORM SESSIONS • PLATFORM SESSIONS • PLATFORM SESSIONS • PLATFORM SESSIONS

### REGENERATIVE MEDICINE (7005-AAA)

*Chair:* **Martine Dunnwald** (Univ. of Iowa)

### STEM CELLS (7006-AAA)

*Chair:* **Martine Dunnwald** (Univ. of Iowa)

### TEACHING INNOVATIONS I & II (7008-AAA)

*Chairs:* **James Brokaw** (Indiana Univ. School of Medicine) & **Carol Nichols** (Medical College of Georgia)

### VASCULAR & CARDIAC AGING (7009-AAA)

*Chairs:* **Eduard Dedkov** (New York College of Osteopathic Medicine) & **Douglas Seals** (Univ. of Colorado)

## AAA ANNUAL MEETING/EB 2009 18–22 NEW ORLEANS

**Rolf Bodmer** (Burnham Institute for Medical Research)  
Genetic Modulation of Cardiac Aging

**Jan Kajstura** (Harvard Medical School)  
Aging of Cardiac Stem Cells

**Mingyi Wang** (National Institute on Aging)  
Central Arterial Aging: Humans to Molecules

### ELASTIC FIBER MOLECULES IN GROWTH FACTOR SIGNALING

*Co-sponsored by* The Anatomical Record

*Chair:* **Richard Pierce** (Washington Univ. School of Medicine)

**Richard Pierce** (Washington Univ. School of Medicine)  
MAGP- Modifier of Fibrillin-Mediated Growth Factor Signalling

**W. Scott Argraves** (Univ. of South Carolina)  
Fibulins & Angiogenesis

**Hiromi Yanagisawa** (Univ. of Texas Southwestern Medical Center)  
Integrin Binding to Fibulin 5 Regulates Protease Activities

**Lynn Sakai** (Shriners Hospital for Children)  
Extracellular Regulation of Growth Factor Signalling by  
Fibrillin Microfibrils

### FGF SIGNALING IN DEVELOPMENT, DISEASE & REPAIR

*Co-sponsored by* Development Dynamics

*Chair:* **Suzanne Mansour** (Univ. of Utah)

**Suzanne Mansour** (Univ. of Utah Human Genetics)  
FGF Signaling in Ear Development

**Xin Sun** (Univ. of Wisconsin-Madison)  
The Role of FGFs in Promoting & Termination Limb Bud  
Outgrowth

**Xin Zhang** (Indiana Univ. School of Medicine)  
Regulation of FGF Signaling in Lacrimal Gland Budding  
Morphogenesis

**Kenneth Poss** (Duke Univ. Medical Center)  
FGFs & Organ Regeneration in Zebrafish

### INTERSECTION OF NANOTECHNOLOGY & NANOMEDICINE

*Chair:* **Rutledge Ellis-Behnke** (Univ. of Hong Kong)

**Don Tomalia** (The National Dendrimer & Nanotechnology  
Center, Central Michigan Univ.)  
Dendrimer-Based Nanomedicine: Pharma Delivery, MRI  
Imaging/Targeted/Polyvalent Therapies

**Esther Chang** (Georgetown Univ.)  
Materializing the Potential of Molecular Medicine via a Tumor-  
Targeting Nanodelivery Platform

**Michael Heller** (Univ. of California, San Diego)  
Directed Self-Assembly Fabrication of BioChemsensor Devices  
from Nanoparticles

**Kuan Wang** (National Institutes of Health)  
The Role of Nanomechanics in Signal Transduction

### IN VIVO IMAGING OF DEVELOPMENT: CELL COMMUNICATION DURING MIGRATION

*Chairs:* **Paul Kulesa** (Stowers Institute for Medical Research) &  
**Jay Unruh** (Stowers Institute for Medical Research)

**Akira Chiba** (Univ. of Miami)  
Bioprobe-assisted *In Vivo* Dissection of Molecular Signaling by  
Rho GTPases in Developing Neurons

**Denise Montell** (Johns Hopkins Univ.)  
Movies, Models & More: Finding the Molecules that Make  
Cells Move

**Paul Wiseman** (McGill Univ.)  
Mapping Protein: Protein Interactions & Transport in Migrating  
Cells Using Image Correlation Microscopy in Space & Time

**Andreas Deutsch** (Technische Universität Dresden)  
Cellular Automaton Modeling of Biological Pattern Formation

### JUNK ANATOMY: THE STORY BEHIND “USELESS” PARTS

*Chairs:* **Timothy Smith** (Slippery Rock Univ.) & **Jeffrey  
Laitman** (Mount Sinai School of Medicine)

**Jeffrey Laitman** (Mount Sinai School of Medicine)  
*Homo Schlubicus*: The End Product of 6 Million Years of Useless  
Parts Tagging Along

**Samuel Marquez** (SUNY Downstate Medical Center)  
The Meaning of Emptiness: Sinuses & Sacs from Land to Sea

**Rebecca Fisher** (Univ. of Arizona College of Medicine-Phoenix)  
A Never-ending Pain in the ...: That Annoying Appendix

**Thomas Park** (Univ. of Illinois at Chicago)  
Blind & Naked, But Oh So Cool: The Subterranean World of  
the Naked Mole Rat

### MOLECULAR CYTOGENETICS IN PREIMPLANTATION/PERINATAL GENETIC ANALYSIS & CANCER RESEARCH

*Sponsored by* HCS

*Chairs:* **Heinz-Ulrich Weier** (UC-LBNL, Life Sciences  
Division) & **Thomas Liehr** (Friedrich-Schiller-Universität Jena,  
Institut für Humangenetik und Anthropologie)

**Thomas Liehr** (Friedrich-Schiller-Universität Jena, Institut für  
Humangenetik und Anthropologie)  
Multi-color FISH Assays for Characterization of Marker  
Chromosomes & Epigenetic Changes

**Jingly Weier** (Reprogenetics, LLC)  
Single Cell Cytogenetics

**Sau Wei Cheung** (Baylor College of Medicine)  
Clinical Application of aCGH for Prenatal Diagnosis:  
Experience with >350 Cases



**Stuart Schwartz** (Univ. of Chicago)  
Molecular Cytogenetic Delineation of Chromosome Structure & Complexity

### MULTISENSORY INTEGRATION

*Co-sponsored by the Association of Anatomy, Cell Biology & Neurobiology Chairpersons*

*Chair: Barry Stein* (Wake Forest Univ.)

**Barry Stein** (Wake Forest Univ.)  
Multisensory Integration: Insights from Single Neurons in the Midbrain & Cortex

**Terrence Stanford** (Wake Forest Univ.)  
Differences Between Multisensory & Unisensory Integration

**Ladan Shams** (UCLA)  
Crossmodal Interactions in Perception & Learning

**Asif Ghazanfar** (Princeton Univ.)  
The Evolution of Speech-Reading

### NANOTECHNOLOGY & NANOBIOLOGY

*Co-sponsored by NAVBO*

*Chair: Rocky Tuan* (NIAMS/NIH)

**Esther Chang** (Georgetown Univ. Medical Center)  
A Tumor-Targeting Nanoimmunoliposome for Systemic Cancer Gene Therapy

**Linda Griffith** (MIT)  
Bioengineering the Liver: Current Status & Current Thought

**Warren Chan** (Univ. of Toronto)  
Probing the Interactions of Nanoparticles with Biological Systems

**Rocky Tuan** (NIAMS/NIH)  
Adult Stem Cells & Nanomaterials for Skeletal Tissue Engineering & Regeneration

### NEW PERSPECTIVES ON IMAGING OLD ANATOMY

*Co-sponsored by AAA's Advisory Committee for Young Anatomists*

*Chairs: Valerie DeLeon* (Johns Hopkins Medical School) & **Chandrashekar Charavaryamath** (Univ. of Saskatchewan)

**Jonathan Wisco** (David Geffen School of Medicine at UCLA)  
Using Diffusion Tensor Imaging (DTI) to Study Neuroanatomical Structures

**Kevin Bickart** (Boston Univ. School of Medicine)  
Functional Magnetic Resonance Imaging & the Neurobiology of Belief

**Valerie DeLeon** (Johns Hopkins Medical School)  
Virtual Histology of Skull in Prenatal Mice with Syndromic Synostosis

**Baljit Singh** (Univ. of Saskatchewan)  
Recent Advances in Imaging of the Lung

### NEW TRENDS IN TISSUE ENGINEERING OF THE NERVOUS & CARDIOVASCULAR SYSTEMS

*Co-sponsored by NAVBO*

*Chair: Francois Berthod* (Laval Univ. School of Medicine) & **Nicolas L'Heureux** (Cytograft Tissue Engineering)

**Nicolas L'Heureux** (Cytograft Tissue Engineering)  
Sheet-based Tissue Engineering: Autologous Blood Vessels & Beyond

**François Berthod** (Laval Univ. School of Medicine)  
A Tissue-Engineered Model of the Spinal Cord to Study Neurodegenerative Disorders

**Giorgio Terenghi** (Univ. of Manchester)  
Tissue Engineering of an Artificial Nerve for Injury Repair

**David Vorp** (Univ. of Pittsburgh)  
Stem Cell-Based Tissue Engineered Blood Vessels

### REGULATION OF ANGIOGENESIS BY CIRCULATING CELLS\*

*Sponsored by NAVBO; co-sponsored by AAA*

*Chair: Christiana Ruhrberg* (Univ. College London)

**Christiana Ruhrberg** (Univ. College London)  
Novel Roles for Macrophages in Developmental Angiogenesis

**Elaine Y. Lin** (Albert Einstein Cancer Center)  
Macrophages in Tumor Angiogenesis

## SUBMITTING AN ABSTRACT

Review the list of platform, hybrid symposia & poster topics on pages 30-31 & decide where your work fits in. For poster sessions, you may select either a broad category or a more specific subcategory. **You may also submit more than one abstract.** Go to <[www.eb2009.org](http://www.eb2009.org)> to submit your abstract, register for the meeting & book your hotel.

AAA will review all abstracts submitted to Education/Teaching categories to determine if they are best scheduled in the "Teaching Innovations in Anatomy" platform session, an AAA poster session, or in one of the EB teaching poster sessions. You may also submit directly to one of the EB teaching categories; details available online.

**Abstract Deadline: November 5, 2008**  
**[www.eb2009.org](http://www.eb2009.org)**

## AAA ANNUAL MEETING/EB 2009 18–22 NEW ORLEANS

**SLEEP & METABOLISM: IT'S MORE THAN JUST WHAT YOU EAT**

*Chairs:* **Gloria Hoffman** (Morgan State Univ.) & **Jessica Mong** (Univ. of Maryland School of Medicine)

**Gloria Hoffman** (Morgan State Univ.)

Chronic Sleep Deprivation Induces Alterations in Both Feeding & Arousal Systems

**Michael Koban** (Morgan State Univ.)

Consequences of Chronic Sleep Deprivation on Metabolism: Altered Uncoupling Protein Expression

**Deborah Suchecki** (UNIFESP)

Sleep Deprivation & Stress: An Inseparable Pair

**Eve Van Cauter** (Univ. of Chicago)

Short Sleep, Poor Sleep: Novel Risk Factors for Type 2 Diabetes

**SPECIALIZED FUNCTIONS OF THE VASCULATURE\***

*Sponsored by* NAVBO; co-sponsored by AAA

*Chair:* **Deborah Yelon** (New York Univ. Medical Center)

**Deborah Yelon** (New York University Medical Center)

Endocardial Specification & Morphogenesis in the Zebrafish Embryo

**Speaker to be determined**

Lymphatic Vasculature

**TESTING DEVELOPMENTAL BIOLOGY PARADIGMS WITH NEW ANATOMICAL MODELS**

*Sponsored by* ASGBI

*Chair:* **Martin Collinson** (Univ. of Aberdeen)

**James Hanken** (Harvard Univ.)

Embryonic Derivation & Segmentation of the Bony Skull are Not Conserved Among Vertebrates: Data from Amphibians

**William Jeffery** (Univ. of Maryland)

Generation of Morphological Diversity by Pleiotropy in Blind Cavefish

**Wim Damen** (Institut Für Genetik Der Universität Zu Koln)

Developmental Biology Paradigms: Lessons from Spiders

**Martin Collinson** (Univ. of Aberdeen)

Genetic Pathway Adaptation & Eye Development in the Iberian Mole

**THE HEPATIC SINUSOID & ITS UNIQUE ENDOTHELIUM (See Page 23)****TISSUE FIXATION FOR MORPHOLOGICAL ANALYSIS & MOLECULAR PROFILING**

*Sponsored by* HCS

*Chairs:* **Denis Baskin** (VA Puget Sound Medical Center & Univ. of Washington) & **Stephen Carmichael** (Emeritus, Anatomy, Mayo Clinic)

**Frederico Monzon** (Molecular Diagnostics)

Unlocking the Archives: Genomic Analysis of Formalin-Fixed Paraffin Embedded Tissue

**Steven Bogen** (Boston Univ. School of Medicine)

Formalin Fixation & Antigen Retrieval: Translating Insights to Clinical Innovation

**Wei-Sing Chu** (Armed Forces Institute of Pathology)

Ultrasound-mediated Tissue Specimen Preparation & On-slide Molecule Extraction from Fixed Tissue Samples

**Scott Jewell** (Ohio State Univ.)

Non-formalin Tissue Fixation for Biochemical & Molecular Analysis

**VERTEBRATE EVOLUTION & DEVELOPMENT**

*Chair:* **Richard Behringer** (M.D. Anderson Cancer Center)

**Michael Shapiro** (Univ. of Utah)

Parallel Evolution in Stickleback Fish

**Arkhat Abzhanov** (Harvard Univ.)

Pecking at the Origin of Vertebrate Diversity

**Chris Cretokos** (Idaho State Univ.)

Comparative Limb Morphogenesis in Mice & Bats

**Kimberly Cooper** (Harvard Medical School)

Hindlimb Specialization: Evolution of Bipedalism

**VESICULAR TRANSPORT & SIGNALING IN ENDOTHELIUM\***

*Sponsored by* NAVBO; co-sponsored by AAA

*Chair:* **Radu Stan** (Dartmouth Medical School)

**Radu V. Stan** (Dartmouth Medical School)

Regulation of Vascular Permeability

**Jordan Pober** (Yale Univ.)

Internalization & Signaling of TNFR in Endothelium

## Hybrid Symposia

**ASYMMETRIES IN DEVELOPMENT (7001-AAA)\***

*Chair:* **Judith Venuti** (LSU Health Science Center)

**Jianbo Wang** (Univ. of Alabama)

The Planar Cell Polarity Pathway in Mammalian Embryogenesis

**Jeffrey Axelrod** (Stanford Univ. School of Medicine)

Planar Cell Polarity: From Cells to Tissues to Organisms

**MORPHOLOGICAL VARIATION IN DEVELOPMENT & DISEASE (7004-AAA)\***

*Chairs:* **Richard Schneider** (Univ. of California San Francisco) & **Ralph Marcucio** (Univ. of California San Francisco)

**Charles Kimmel** (Univ. of Oregon)  
Evolution & Development of Facial Bone Shape

**Benedikt Hallgrímsson** (Univ. of Calgary)  
Developmental Integration, Canalization & Cleft Lip in A/  
WySn Mice

**SYSTEM BIOLOGY APPROACHES FOR INVESTIGATING MICROVASCULAR REMODELING (7007-AAA)\***

*Chair:* **Walter Murfee** (Tulane Univ.) & **Shayn Peirce** (Univ. of Virginia)

**Shayn Peirce** (Univ. of Virginia)  
Combining Multi-Cell Agent-Based Models with Experiments  
to Determine Cell Fates in Microvascular Growth

**Timothy Secomb** (Univ. of Arizona)  
Theoretical Simulation of Microvascular Network Growth &  
Adaptation

*\*AAA & NAVBO will be accepting abstracts for presentation within this session. Please see the topic category list on pages 30-31.*

**Have \$\$\$, Will Travel****Important Process & Deadline Changes**

AAA has a new online submission process for our Student/Postdoc/Young Faculty Travel Awards and platform/poster competitions. Here are the details:

- \$ Applications must be submitted online via the regular EB 2009 abstract submission process.
- \$ Your department chair or advisor will receive e-mail notification of your travel award application.
- \$ The Travel Award submission deadline will be Wednesday, November 5 – the same date as the abstract submission deadline, **NOT** a week later!

What hasn't changed are AAA's great benefits for students/postdocs/young faculty! Travel awards range from \$250-\$500 – see page 21 for details.

**Submission deadline: November 5**

**ABSTRACT SUBMISSION**

**[www.eb2009.org](http://www.eb2009.org)**

November 5, 2008

Submit early! Don't get caught in traffic on the information superhighway by waiting until the last minute!

**AAA STUDENT/POSTDOCTORAL/ YOUNG FACULTY AWARDS**

**[www.anatomy.org](http://www.anatomy.org)**

November 5, 2008

\$350 travel grant for AAA Student/ Postdoctoral Members who joined AAA at least one year prior to the award deadline; \$250 travel grant for AAA Student/ Postdoctoral Members who joined AAA less than one year prior to the award deadline. Also compete for an additional platform or poster presentation award. In all cases, 2009 dues must already be paid. Separate application required; see page 21 for details.

**ADVANCE REGISTRATION**

**[www.eb2009.org](http://www.eb2009.org)**

February 9, 2009

Save \$75 with early-bird registration & an additional \$115 if you're an **AAA**, **ASGBI**, **HCS**, or **NAVBO** member! When submitting your EB Registration Form, it's important that you select one of these societies as your member society or Anatomical Sciences as your area of interest.

**HOTEL RESERVATION**

**[www.eb2009.org](http://www.eb2009.org)**

March 10, 2009

Inexpensive rooms are the first to go. Reserve your room today!



## AAA ANNUAL MEETING/EB 2009 18–22 NEW ORLEANS

**AAA Poster Sessions** are organized based on submitted abstracts. Posters must be put up by 8:30 a.m. on the day they are scheduled and remain up until 5:00 p.m. Authors are required to be at their posters from 12:30–2 p.m. Failure to meet these requirements may result in ineligibility for AAA awards, including Student/Postdoc/Young Faculty Travel Awards.

**7016-AAA Anatomy**

- 7017-AAA Anatomy: Animal Models
- 7018-AAA Anatomy: Form & Variation
- 7019-AAA Anatomy: Mathematical Modeling
- 7020-AAA Anatomy: Muscle
- 7021-AAA Anatomy: Technology Transfer

**7022-AAA Anatomy Education**

- 7023-AAA Anatomy Education: Assessment, Curriculum & Mentoring
- 7024-AAA Anatomy Education: Computer-assisted Learning
- 7025-AAA Anatomy Education: Educational Research
- 7026-AAA Anatomy Education: Teaching Methods & Innovations

**7027-AAA Bones, Cartilage & Teeth**

- 7028-AAA Bones, Cartilage & Teeth: Aging, Disease & Cancer
- 7029-AAA Bones, Cartilage & Teeth: Anatomy & Morphology
- 7030-AAA Bones, Cartilage & Teeth: Bioengineering, Artificial Matrices & Devices
- 7031-AAA Bones, Cartilage & Teeth: Biomechanics
- 7032-AAA Bones, Cartilage & Teeth: Bone Marrow & Mesenchymal Stem Cells
- 7033-AAA Bones, Cartilage & Teeth: Cartilage
- 7034-AAA Bones, Cartilage & Teeth: Craniofacial
- 7035-AAA Bones, Cartilage & Teeth: Development
- 7036-AAA Bones, Cartilage & Teeth: ECM & Cells
- 7037-AAA Bones, Cartilage & Teeth: Imaging
- 7038-AAA Bones, Cartilage & Teeth: Molecular Mechanisms

**7039-AAA Cardiovascular Biology**

- 7040-AAA Cardiovascular Biology: Aging; Disease & Hypertension
- 7041-AAA Cardiovascular Biology: Anatomy & Morphology
- 7042-AAA Cardiovascular Biology: Angiogenesis; Lymphangiogenesis; Vasculogenesis
- 7043-AAA Cardiovascular Biology: Artificial Components; Bioengineering
- 7044-AAA Cardiovascular Biology: Cell Signaling
- 7045-AAA Cardiovascular Biology: Development
- 7046-AAA Cardiovascular Biology: Dynamic Imaging

- 7047-AAA Cardiovascular Biology: ECM & Cells
- 7048-AAA Cardiovascular Biology: Molecular Mechanisms

**7049-AAA Cell Biology**

- 7050-AAA Cell Biology: Cell Cycle
- 7051-AAA Cell Biology: Cell Response to Mechanical Stress
- 7052-AAA Cell Biology: Contractility/Muscle
- 7053-AAA Cell Biology: ECM & Cells
- 7054-AAA Cell Biology: Epithelial to Mesenchymal Transition
- 7055-AAA Cell Biology: Gene Regulation
- 7056-AAA Cell Biology: Genomics & Proteomics
- 7057-AAA Cell Biology: Imaging
- 7058-AAA Cell Biology: Membranes, Organelles, Cilia & Flagellae
- 7059-AAA Cell Biology: Signaling & Regulatory Networks

**7060-AAA Extracellular Matrix**

- 7061-AAA Extracellular Matrix: Bioengineering; Biomechanics
- 7062-AAA Extracellular Matrix: Cancer & Metastasis
- 7063-AAA Extracellular Matrix: Development
- 7064-AAA Extracellular Matrix: Fibrosis, Pathology & Disease
- 7065-AAA Extracellular Matrix: Migration, Pathfinding & Target Recognition of Cells
- 7066-AAA Extracellular Matrix: Remodeling

**7067-AAA Growth & Development**

- 7068-AAA Growth & Development: Pathways of Regeneration & Repair
- 7069-AAA Growth & Development: Gene Expression Patterns
- 7070-AAA Growth & Development: Head & Face
- 7071-AAA Growth & Development: Imaging
- 7072-AAA Growth & Development: Limb Development & Regeneration
- 7073-AAA Growth & Development: Mammalian Models
- 7074-AAA Growth & Development: Non-Mammalian Models
- 7075-AAA Growth & Development: Reproduction
- 7076-AAA Growth & Development: Thorax, Abdomen & Pelvic Region

## AAA ANNUAL MEETING/EB 2009 APRIL 18–22 NEW ORLEANS

**7077-AAA Histochemistry****7078-AAA Imaging**

- 7079-AAA Imaging: Anatomy
- 7080-AAA Imaging: Cell Signaling
- 7081-AAA Imaging: Computational Analysis
- 7082-AAA Imaging: Live Imaging

**7083-AAA Neurobiology**

- 7084-AAA Neurobiology: Anatomy & Morphology
- 7085-AAA Neurobiology: Central, Peripheral & Autonomic Systems
- 7086-AAA Neurobiology: Glial Cells
- 7087-AAA Neurobiology: Learning & Memory
- 7088-AAA Neurobiology: Neuroimaging
- 7089-AAA Neurobiology: Neuroimmune Interactions
- 7090-AAA Neurobiology: Neuronal & Spinal Cord Degeneration, Repair & Regeneration
- 7091-AAA Neurobiology: Neuroprotection
- 7092-AAA Neurobiology: Neuropsychiatric Disorders
- 7093-AAA Neurobiology: Response to Biomechanics
- 7094-AAA Neurobiology: Sensory Systems
- 7095-AAA Neurobiology: Synapses, Spines & Structural Plasticity

**7096-AAA Regenerative Medicine**

- 7097-AAA Regenerative Medicine: Bioartificial Organs & Sensors
- 7098-AAA Regenerative Medicine: Cell-Scaffold Interactions
- 7099-AAA Regenerative Medicine: Internal & External Devices
- 7100-AAA Regenerative Medicine: Organ & Tissue Regeneration
- 7101-AAA Regenerative Medicine: Rehabilitation
- 7102-AAA Regenerative Medicine: Robotics
- 7103-AAA Regenerative Medicine: Stem Cells

**7104-AAA Stem Cells**

- 7105-AAA Stem Cells: Aging & Disease
- 7106-AAA Stem Cells: Identification of Precursors
- 7107-AAA Stem Cells: Perinatal
- 7108-AAA Stem Cells: Postnatal
- 7109-AAA Stem Cells: Prenatal
- 7110-AAA Stem Cells: Wound Healing & Repair

**7111-AAA Tissue Engineering****7112-AAA Wound Healing**

**You bring the poster!  
We'll bring the popcorn!**

**NAVBO Symposium Topics**

- 7010-AAA Vascular Biology: Specialized Functions - Arterial -Venous Specification
- 7011-AAA Vascular Biology: Specialized Functions - Coronary Vessels
- 7012-AAA Vascular Biology: Specialized Functions - Endocardium
- 7013-AAA Vascular Biology: Specialized Functions - Lymphatic Vasculature
- 7014-AAA Vascular Biology: Regulation of Angiogenesis by Circulating Cells
- 7015-AAA Vascular Biology: Vascular Cell Receptor/ Adhesion Molecule Trafficking

**NAVBO Posters & Minisymposium**

- 7113-AAA Vascular Biology
- 7114-AAA Vascular Biology: Angiogenesis & Vascular Development
- 7115-AAA Vascular Biology: Atherosclerosis & Restenosis
- 7116-AAA Vascular Biology: Endothelial Cell Biology
- 7117-AAA Vascular Biology: Extracellular Matrix & Proteases in Vascular Biology
- 7118-AAA Vascular Biology: Genetic Disorders & Animal Models of Vascular Diseases
- 7119-AAA Vascular Biology: Genomics/proteomics in Vascular Biology
- 7120-AAA Vascular Biology: Hypertension/endothelial-dependent Responses
- 7121-AAA Vascular Biology: Immune System in Vascular Disease
- 7122-AAA Vascular Biology: Lipid Mediators & Lipoproteins
- 7123-AAA Vascular Biology: Mechano-sensing & Signal Transduction in Vascular Cells
- 7124-AAA Vascular Biology: Smooth Muscle Cell Biology
- 7125-AAA Vascular Biology: Stem/progenitor Cells in Vascular Biology
- 7126-AAA Vascular Biology: Thrombosis & Hemostasis
- 7127-AAA Vascular Biology: Vascular Cell Dysfunction in Disease
- 7128-AAA Vascular Biology: Vascular Cell Signaling
- 7129-AAA Vascular Biology: Vascular Tissue Engineering

**Save These Dates!****Future AAA Annual Meetings/EB**

- |                          |                |
|--------------------------|----------------|
| <b>April 18-22, 2009</b> | New Orleans    |
| <b>April 24-28, 2010</b> | Anaheim, CA    |
| <b>April 9-13, 2011</b>  | Washington, DC |



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