Vol. 3 No. 4, December 2008

ASIP Pathways

AMERICAN SOCIETY FOR INVESTIGATIVE PATHOLOGY

News for Scientists Taking First Steps to Biomedical Discovery & Disease Cures

Security and Science: Striking a Balance

By Carrie D. Wolinetz, PhD, Director of Scientific Affairs and Public Relations, FASEB and Avrum I. Gotlieb, MDCM, FRCPC, Vice President, Science Policy, FASEB

The Federation of American Societies of Experimental Biology (FASEB), which comprises ASIP and 20 additional scientific societies collectively represents more than 80,000 researchers engaged in basic and clinical biomedical research. It is our pleasure to bring the ASIP membership information on FASEB's ongoing advice to the National Science Advisory Board for Biosecurity (NSABB) on the issue of dual use research in the life sciences. FASEB's efforts have been focused on the individual bench scientist who supervises a biomedical research program in the life sciences, which is not specific for biodefense purposes. NSABB's focus is not on the broad area of biological safety or biosecurity, but instead on oversight of dual use research, which generates new knowledge to enhance our understanding of life sciences, yet could potentially be misused for harmful purposes. There are already numerous platforms in the U.S. and internationally to regulate potentially harmful agents used in biomedical science, including the Biological Weapons and Toxins Convention, U.S. Select Agent laws, U.S. Recombinant DNA Advisory Committee (RAC), and International Air Transport Association regulations. Moreover, visa procedures and export licensing agreements serve to control the movement of people, equipment, and reagents throughout the world. The question is thus raised: is there a need for additional oversight of dual use research? Scientists need to decide what is best for science. To do this they must be well informed on regulatory matters that affect their ability to carry out innovative transformative research in a safe timely manner, free of excessive regulatory burden.

The National Science Advisory Board for Biosecurity (NSABB) was established by the U.S. government in 2004, largely in response to a National Research Council (NRC) report - Biotechnology Research in an Age of Terrorism - which explored the issue of dual use research in the life sciences. NSABB, which is managed and supported by the National Institute of Health (NIH), was charged with providing "advice to federal departments and agencies on ways to minimize the possibility that knowledge and technologies emanating from vitally important biological research will be misused to threaten public health or national security." The NSABB is a critical component of a set of federal initiatives to promote biosecurity in life science research.

In April 2007, NSABB released a draft document for comment and input entitled "NSABB Working Group on Oversight Framework" (continued on page 10)

Also Inside:

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Several ASIP Members Are Named to Prominent Positions & Appointments

Robert Folberg, MD, was appointed in August 2008 to be founding dean of the Oakland University William Beaumont School of Medicine (OUWBSM) in Rochester, Michigan. Dr. Folberg served as Chair of the Department of Pathology at the University of Illinois Hospital in Chicago since 2000. In addition to his role as dean of the OUWBSM, Dr. Folberg will also serve as Professor of Biomedical Sciences, Pathology and Ophthalmology, and as Beaumont Hospitals' Chief Academic Officer. The school plans to open in 2010.

Elaine Jaffe, MD was elected to membership in the Institute of Medicine (IOM) in October 2008. Election to the IOM is considered one of the highest honors in the fields of health and medicine and recognizes individuals who have demonstrated outstanding professional achievement and commitment to service. In April, Dr. Jaffe also received ASIP's Chugai Mentoring Award for a distinguished career dedicated to mentoring and education. She is currently Chief of the Hematopathology Section, Laboratory of Pathology, Center for Cancer Research in the National Cancer Institute at NIH.

Deborah E. Powell, MD was named Chair-Elect of the American Association of Medical Colleges (AAMC) in November 2008. She will succeed the current Chair of AAMC in 2009. Dr. Powell is Dean of the University of Minnesota Medical School (UMMS), Assistant Vice President for Clinical Affairs, and McKnight Presidential Leadership Chair at the University of Minnesota. Prior to joining UMMS as Dean in 2002, she was Executive Dean and Vice Chancellor for Clinical Affairs at the University of Kansas.

Mark L. Tykocinski, MD, was named Dean of Jefferson Medical College and Senior Vice President of Thomas Jefferson University, effective December 1, 2008. In this capacity, Dr. Tykocinski will also serve as President of Jefferson University Physicians. Dr. Tykocinski was the Chair of the Department of Pathology and Laboratory Medicine at the University of Pennsylvania since 1998 and is currently Past President of ASIP.

ASIP congratulates each of these fine individuals on their many accomplishments and gratefully acknowledges their contributions to pathology, as academic leaders and as proud examples and worthy ambassadors for the discipline.

THE ASIP JOURNAL CME PROGRAM

The American Journal of Pathology
The Journal of Molecular Diagnostics

Read the Articles... Take the Exams... Earn CME Credit!

The ASIP Journal CME programs for *The American Journal of Pathology (AJP)* and *The Journal of Molecular Diagnostics (JMD)* offer you a unique opportunity to earn 100 CME credits per year while renewing and updating your knowledge in the pathogenesis of disease and molecular diagnostics. The program consists of two components, the JMD CME Program in Molecular Diagnostics and the AJP CME Program in Pathogenesis. Participants can elect to participate in each program component individually or participate in both components simultaneously.

JMD CME Program in Molecular Diagnostics

The **JMD CME Program in Molecular Diagnostics** provides ***The Journal of Molecular Diagnostics (JMD)*** readership with an opportunity to earn CME credit while renewing and updating their knowledge in the latest advances in molecular diagnostics. This program consists of a series of questions based on selected articles in the 2009 issues of *JMD*.

■ **Objectives -** Participants of the **JMD CME Program in Molecular Diagnostics** should be able to demonstrate an increase in, or confirmation of, their knowledge of the latest advances in molecular diagnosis and prognosis and understanding of molecular pathogenesis of disease that can lead to improvements in human health after reviewing specific articles in ***The Journal of Molecular Diagnostics (JMD)*.**

■ **Participants -** This program is specifically developed for trainees, clinicians and researchers interested in the molecular basis of disease and the application of nucleic acid and protein assays for diagnostic and prognostic analysis of disease.

■ **Examinations -** Each issue of *JMD* will include an online Examination comprised of up to 10 questions based on articles appearing in that particular issue. To receive credit for this journal-based CME activity, participants must answer questions based on selected articles in Volume 11 of *JMD* (calendar year 2009) and achieve a cumulative score of at least 75% (correct answers to at least 38 of the 50 questions in the annual program) in addition to completing an evaluation form.

AJP CME Program in Pathogenesis

The **AJP CME Program in Pathogenesis** provides ***The American Journal of Pathology (AJP)*** readership with a unique opportunity to earn CME credit while renewing and updating their knowledge in the mechanisms of disease. This program consists of a series of questions based on selected articles in the 2009 issues of *AJP*.

■ **Objectives -** Participants of the **AJP CME Program in Pathogenesis** should be able to demonstrate an increase in, or confirmation of, their knowledge of the pathogenesis of disease that can lead to improvements in human health after reviewing specific articles in ***The American Journal of Pathology (AJP).***

■ **Participants -** This program is specifically developed for trainees, clinicians and researchers investigating the mechanisms of disease who wish to advance their current knowledge of the cellular and molecular biology of disease.

■ **Examinations -** Each monthly issue of *AJP* will include an online Examination comprised of up to 5 questions based on articles appearing in that particular issue. To receive credit for this journal-based CME activity, participants must answer questions based on selected articles in Volume 174 and 175 of *AJP* (calendar year 2009) and achieve a cumulative score of at least 75% (correct answers to at least 38 of the 50 questions in the annual program) in addition to completing an evaluation form.

These activities have been planned and implemented in accordance with the Essential Areas and Policies of the Accreditation Council for Continuing Medical Education (ACCME) through the joint sponsorship of the Federation of American Societies for Experimental Biology (FASEB) and the American Society for Investigative Pathology (ASIP). FASEB is accredited by the ACCME to provide continuing medical education for physicians. **FASEB designates this educational activity for a maximum of 100 AMA PRA Category 1 Credit(s)™. Physicians should only claim credit commensurate with the extent of their participation in the activity.**

Registration Rates*: AMP, ASIP, ISBER, PPS Member Rates - Single Program Component (AJP or JMD) $125/year, Non-Member Rates - $200/year**
AMP, ASIP, ISBER, PPS Member Rates - Full Program (AJP and JMD) $250/year, Non-Member Rates - $400/year**

*Note: The ASIP Journal CME Program includes both **The AJP CME Program in Pathogenesis** and the **JMD CME Program in Molecular Diagnostics**. Participants may select either one or both components.
AMP members are eligible for the Member Registration rate for the **JMD CME Program in Molecular Diagnostics only.

Register for the 2009 Journal CME Programs Online at *www.asip.org*

BASIC RESEARCH - TRANSLATIONAL DISCOVERY - CLINICAL APPLICATIONS

Education Interrupted: UTMB Faces Long Road of Recovery from Ike

by David H. Walker, MD, Chair, Department of Pathology, University of Texas Medical Branch (Photos Courtesy of Don Sexton)

On September 13, 2008, Hurricane Ike passed directly over Galveston Island. While Ike was classified as a Category 2 storm, encompassing more than 80% of the Gulf of Mexico, the associated surge was certainly more characteristic of a Category 4 hurricane. Indeed its damage has made it the third worst hurricane in US history. Galveston and the greater Houston area experienced widespread flooding, long lasting power outages, and wind damage. A frequently quoted estimate is that 75% of homes in Galveston were flooded. This has disproportionately affected our trainees who have lost apartments or homes (at least temporarily) and in some cases all or some of their personal items. Many have no insurance to cover their personal losses.

At the university, there was flooding on the ground floor of 84 buildings impacting most clinical and research programs, 750,000 square feet. The Keiller Building, home to the Department of Pathology, lost power for more than 72 hours and lost laboratories and animal facilities on the ground floor.

Not surprisingly, the Galveston National Laboratory (national biocontainment laboratory) which was designed to withstand even more powerful storms was essentially unaffected by the hurricane. It remains scheduled to open later this fall.

Recovery efforts for the campus are well underway. Power, air handling, and water have been restored to most UTMB buildings. The University reinitiated education on October 20. Keiller Building reopened for research on October 27.

We are pursuing state, federal, and private foundation financial assistance for the recovery, but it is clear we will need multiple sources of help to rebound quickly. In addition, we have learned that FEMA will provide some assistance to US nationals and permanent residents only. Thus far, FEMA has only approved 13% of the requests for assistance. This leaves our international students and postdoctoral fellows with no safety net.

Both US residents and international trainees will need financial assistance for books, household items, transportation, and other items to get reestablished.

The American Physiological Society will provide grants (up to $2000) to UTMB physiology trainees affected by the storm. The American Society for Microbiology has established a fund of $60,000 for students' and postdoctoral fellows' recovery. Selection of recipients will be based on need and will be administered by a committee consisting of Clifford Houston, Professor and Associate VP for Educational Outreach, Alan Barrett, Ph.D., Professor and Director, Sealy Center for Vaccine Development, David W. Niesel, Ph.D., Chair of Microbiology and Immunology, the program directors of the Experimental Pathology (Stephen Higgs, Ph.D.) and Microbiology and Immunology (Rolf Konig, Ph.D.) graduate programs, and me. There will also be oversight by the Provost's office. We will develop criteria for evaluation and a short application to gather essential data. We will ask for a short report on how the funds are used and the impact of the program on the trainees' recovery. We will also prepare a financial report to the society.

The impact of this financial help would be great. Assisting trainees at the beginning of their careers would have a long term benefit and establish a long-lasting bond with the donor society. The Department of Pathology is the best funded department at UTMB in terms of NIH peer-reviewed funding, and our Experimental Pathology Graduate Program is the premier Ph.D. program on campus.

The impact of this event is greater than anyone who is not on Galveston Island realizes. We are resilient and will recover, but the time to reinvent and recreate the institution will realistically take years.

Editor's Note: A general fund has been established to provide assistance to PhD students, MD-PhD students, and research postdocs affected by Hurricane Ike. ASIP members who wish to make contributions should send them to: Ms. Ann Anderson, Development Office, Graduate School of Biomedical Sciences, 3.316 Levin Hall, UTMB, Galveston, TX 77555-1050.

Celebrating Ten Years!

The Journal of Molecular Diagnostics

Impact Factor - 3.478 (Thomson Reuter's Journal Citation Report, 2007)

Cutting edge research - Consultations in Molecular Diagnostics, Technical Advances, Commentaries and Reviews

JMDExpress - fully citable articles published online before print

Distinguished Editorial Board - includes internationally recognized scientists and leading diagnostics researchers

Read *JMD* Articles and Earn CME in 2009 - The JMD CME Program in Molecular Diagnostics *(a component of the 2009 ASIP Journal CME Program)* offers 50 CME credits in 2009.

Online Access - features full-text articles, robust search functions, email alerts and a growing legacy collection

Indexed in all major indexing services - including NLM's Medline/PubMed, EMBASE, Thomson Reuter's Science Citation Index. Featured in Pub Med Central

Published Bimonthly - published 6 times/year (January, March, May, July, September, & November)

Read these special editorials in the November 2008 issue of JMD:

Editorial

- **Celebrating 10 Years of *The Journal of Molecular Diagnostics***
  Karen L. Kaul
  J. Mol. Diagn. 2008, 10:477

Guest Editorials

- ***The Journal of Molecular Diagnostics*: From Conception to Contract**
  Jeffrey A. Kant and Linda M. McManus
  J. Mol. Diagn. 2008, 10:478-479

- **The Practice of Molecular Genetic Pathology: Morphing 20th-Century Diagnostic Methods into Potent Tools for the New Millennium**
  Mark E. Sobel, Adam Bagg, Angela M. Caliendo, Marc Ladanyi, and Barbara Zehnbauer
  J. Mol. Diagn. 2008, 10:480-483

BASIC RESEARCH - TRANSLATIONAL DISCOVERY - CLINICAL APPLICATIONS

Milestones . . . in Investigative Pathology

by Richard G. Lynch, MD, Editor

Pernicious Anemia

(1) Whipple, G.H., Hooper, C.W., Robscheit, F.S. Blood regeneration following anemia. *Am J Physiol* 53:236, 1920

(2) Minot, G.R. and Murphy W.P. Treatment of pernicious anemia by special diet. *JAMA* 87:470, 1926

(3) Castle, W.B. Observations of the etiologic relationship of achylia gastrica to pernicious anemia. *Am J Med Science* 178:748, 1929

In 1855, Thomas Addison at Guy's Hospital described a lethal, idiopathic anemia that in 1872 was given the name Pernicious Anemia by Biemer. For decades following, a commonly held view was that Pernicious Anemia reflected the positive-acting, deleterious influence of an infectious agent or a microbial product. A popular concept was the injurious agent caused excessive destruction of red blood cells.

Clinical and autopsy studies subsequently established that Pernicious Anemia was more than a disorder of red blood cells. Besides reduced numbers of blood erythrocytes and low concentrations of hemoglobin, patients were found to have excessive iron deposits in the liver, gastric glandular atrophy and achlorhydria, megaloblastic bone marrow hyperplasia, and profound demyelination and atrophy of sensory axons in the spinal cord. Under the microscope some cells of the body that normally turn over rapidly were found to be increased in size. Large erythrocytic precursors in the bone marrow were recognized early, but with time it became clear that the blood of patients with Pernicious Anemia contained giant granulocytes and platelets, and that large epithelial cells were present in their gastric and vaginal washings.

Beginning in the early 1900s anecdotal reports suggested to a few investigators that Pernicious Anemia might be a nutritional deficiency disease. In the 1920s two milestone discoveries were published, one by the pathologist George Whipple and colleagues at the University of Rochester (1), the other by two clinical investigators, George Minot and William Murphy, at Harvard Medical School (2). Whipple showed that anemia could be the result of a nutritional deficiency. Minot and Murphy developed a special diet that could reverse the pathology of Pernicious Anemia and cure patients. This was a tremendous breakthrough because 1-2% of adults over age 50, primarily people of northern European ancestry, suffered from this fatal disease. In 1934, Minot, Murphy and Whipple shared the Nobel Prize in Physiology and Medicine for their discoveries. Their Nobel lectures – available on the Nobel website (www.nobelprize.org) provide interesting historical information and data about their experiments. These milestone discoveries launched decades of investigations, notably by W.B. Castle (3), that uncovered the complex pathophysiological mechanisms underlying pernicious anemia. Castle's discoveries led to new treatments of the disease that were more effective, better tolerated by patients, and more affordable.

The importance of Whipple's work was it firmly established on a quantitative basis that the properties of food influenced blood formation, a concept not previously accepted. Whipple was originally interested in the metabolism of biliary and blood pigments and had developed a model of chronic anemia in dogs by repeated phlebotomy. When he began to investigate factors that influenced blood regeneration in chronically anemic dogs, Whipple focused on diet. Of the various diets tested, he found that liver and liver extracts were the most effective, although feeding other meats – kidney, muscle, or brain – also stimulated hematopoiesis. The choice of liver was fortunate. As others later pointed out, had Whipple fed iron salts to the dogs, he likely would have observed the same result since the dogs he studied undoubtedly suffered from iron deficiency anemia. Whipple's findings on the effectiveness of liver feeding influenced Minot and Murphy to continue similar clinical studies they had been conducting in patients with Pernicious Anemia. A key element in the success of those studies was the reliance on blood reticulocyte counts to assess bone marrow responsiveness.

Once it was established that daily feedings of large amounts of liver or concentrated liver extracts induced varying degrees of remission in Pernicious Anemia, the central question became, "What is the active factor?" Castle (3) discovered that daily administration by gastric tube of liquefied stomach contents from a healthy person removed an hour after ingestion of 300 grams of lean beef stimulated hematopoiesis in patients with Pernicious Anemia. Administration of gastric juice recovered from histamine-stimulated normal donors was ineffective. Administration of beef digested with pepsin was ineffective. Apparently, there was requirement for interaction between a factor in normal gastric juice and a factor in digested beef. The activity present in beef was designated as *extrinsic factor*; the activity present in normal gastric juice was designated as *intrinsic factor*. In retrospect, some of the dietary regimens in the clinical studies that led to the cure of Pernicious Anemia would probably raise eyebrows in today's Human Subject Committees.

Subsequent chemical analyses showed that extrinsic factor belonged to the cobalamin family of organometallic compounds. When it was shown

that the active cobalamin was vitamin B12, therapy with vitamin B12 became standard treatment for Pernicious Anemia. Intramuscular treatment with vitamin B12 cured patients. To be effective by oral administration, vitamin B12 required the presence of normal gastric juice or massive doses of the vitamin. Later studies showed that intrinsic factor was a vitamin B12-binding protein produced by gastric gland parietal cells. Biochemical studies showed that vitamin B12 played a role in DNA synthesis, hinting at a mechanism that could account for the underproduction of red blood cell precursors in the bone marrow of patients with Pernicious Anemia.

Although curative treatment for Pernicious Anemia had been obtained, basic research in the area actually increased and publications continue through today. Uptake of vitamin B12 was shown to take place in the ileum via a specific mucosal receptor for the vitamin B12-intrinsic factor complex. New laboratory tests were developed to screen for Pernicious Anemia to distinguish it from other megaloblastic anemias. A great deal of effort was directed at understanding the basis for gastric gland atrophy and the loss of the intrinsic factor-producing parietal cells. The discovery of antibodies specific for parietal cells, intrinsic factor and other elements in the vitamin B12-uptake cascade have fostered the concept of Pernicious Anemia as an autoimmune disorder. Coming full circuit from the notion of a microbial etiology that was in vogue at the start of the 20th century and then discarded, it is now firmly established that *Helicobacter pylori* is a gastric pathogen that produces factors that are toxic for parietal cells.

Pernicious Anemia is another example of a disease where an effective treatment came before an understanding of the underlying pathogenic mechanisms. It is another example where a disease, an experiment of nature, provided a powerful tool for biomedical discovery. Once the pathogenic mechanisms of Pernicious Anemia were understood, they provided critical insights into normal physiological processes, as well as the basis of other diseases. Minot, Murphy and Whipple worked without the highly specific, sensitive and sophisticated tools that are routine in today's biomedical research, yet they succeeded in making seminal discoveries, curing an incredibly complex disease, and launching the field of nutritional deficiency anemias.

References:

1. Whipple, GH, Hooper, CW, Robscheit, FS. Blood regeneration following anemia. *Am J Physiol* 53:236, 1920
2. Minot, GR and Murphy, WP. Treatment of pernicious anemia by special diet. *JAMA* 87:470, 1926
3. Castle, WB. Observations of the etiologic relationship of achylia gastrica to pernicious anemia. *Am J Med Science* 178:748, 1929

SEE PREVIOUS MILESTONES AT:
http://www.asip.org/pubs/milestones.htm

Feb. 2008 - Pneumococcal Transformation: Genes Are Made of DNA
May 2008 - Tissue Culture of Mammalian Cells



Opportunities to Give

ASIP General Education Fund

ASIP provides our young experimental pathologists with challenging educational and professional career development initiatives focused on new discoveries in pathogenesis and its ultimate influence on disease prevention and health care. Your gifts go a long way toward providing opportunities for our youngest ASIP members!
www.asip.org/donations/GenEdFund.htm

Pathology Leadership Fund (PLF)

The PLF supports symposia and workshops at the ASIP annual meetings, trainee travel awards, educational initiatives, and merit awards. The PLF fund was established in 2004 by the leadership of ASIP. Join with your distinguished colleagues today by making a contribution to the PLF today.
www.asip.org/donations/plf.htm

Abraham David Sobel - ASIP Education Fund

Mark Sobel, ASIP's Executive Officer, established the Abraham David Sobel - ASIP Education Fund to perpetuate his late father's lifelong interest in supporting education and training for young scientists. Funds are used to support education and mentorship of trainee members of the ASIP. Since its creation, the fund has provided travel grants for 15 trainees to attend ASIP meetings and courses. In addition, the fund was used to launch the ASIP Excellence in Science Award which will be awarded for the first time in 2009 and recognizes outstanding achievements at the earliest stages of a career in biomedical research.
www.asip.org/awds/sobel.htm

To make a donation online, please go to *www.asip.org*, login to the Members-Only area, and click on "Make a Donation"

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April 18 - 22, 2009
New Orleans, Louisiana, USA
ASIP 2009 Annual Meeting at Experimental Biology

Saturday, April 18, 2009

ASIP Excellence in Science Award Lecture: Endoplasmic Reticulum Stress in Disease Pathogenesis
Speaker: Jonathan Lin

Biology of Aging
Chaired: David A. Sinclair and Ivonne Ronchetti
Sponsored by ASIP and the Italian Pathology Society

ASMB Lecture: Matrix Metalloproteinases as Effectors of Mucosal Immunity
Speaker: William Parks
Sponsored by ASIP and the American Society for Matrix Biology

Highlights: Graduate Student Research in Pathology
Chaired: James R. Stone
Sponsored by the ASIP Committee for Career Development, Women & Minorities

Cancer Stem Cells
Chaired: Stewart Sell

Eaten Alive: Autophagy in Cardiac Disease and Atherosclerosis
Chaired: Jonathon W. Homeister and Zhelong Xhu
Sponsored by ASIP and the Society for Cardiovascular Pathology

Achieving Work-Life Balance
Chaired: Marion Cohen and Vallie M. Holloway
Sponsored by the ASIP Committee for Career Development, Women & Minoritie

Pulmonary Pathology Society (PPS) Symposium: Stem Cells in Lung Development and Disease
Chaired: Sem Hin Phan
Sponsored by ASIP and PPS

KEYNOTE LECTURE: Normal and Neoplastic Stem Cells
Speaker: Irving L. Weissman

Sunday, April 19, 2009

ISAMM Symposium: Circulating Tumor Cells
Chaired: Larry E. Debault and Raymond R. Tubbs
Sponsored by ASIP and the International Society for Analytical and Molecular Morphology; Supported by an unrestricted educational grant from Veridex

Patrolling the Vascular Interface by Leukocytes
Chaired: Myron I. Cybulsky and Francis W. Luscinskas

The Road to Independence – Careers in Pathology
Chaired: Tara L. Sander
Sponsored by the ASIP Committee for Career Development, Women & Minorities and the FASEB Minority Access to Research Careers (MARC) office

9th Annual Career Development Program and Lunch: Winning in the Granting Process – Pathology
Chaired: Dani S. Zander and Jayne Reuben
Sponsored by the ASIP Committee for Career Development, Women & Minorities, the American Association of Anatomists, and the FASEB Minority Access to Research Careers (MARC) office

Liver Pathobiology Symposium: Interdisciplinary Approaches to Liver Disease
Chaired: Harriet C. Isom
Sponsored by the ASIP Liver Pathobiology Scientific Interest Group

Mechanisms of Tumorigenesis in the Phakomatoses
Chaired: Steven L. Carroll

BLOOD VESSEL CLUB: Genetic Approaches to Vascular Disease
Chaired: Luisa Iruela-Arispe and Douglas A. Marchuk
Sponsored by ASIP and the North American Vascular Biology Organization

Rous-Whipple Award Lecture: Liver Regeneration
Award Recipient: George K. Michalopoulos

Club Hepatomania
Sponsored by the ASIP Liver Pathobiology Scientific Interest Group

Monday, April 20, 2009

ACVP Symposium: From Bench to Bedside: Impact of Canine Genomics on Human Disease
Chaired: Elizabeth Whitley and John Erby Wilkinson
Sponsored by ASIP and the American College of Veterinary Pathologists

Pathobiology of Angiogenesis: Update 2009
Chaired: Harold F. Dvorak
A tribute to Judah Folkman

Trends in Experimental Pathology: miR'ely Making Sense of It All: Novel Implications of Micro RNA in Disease and Therapies
Chaired: Wing C. Chan and Mark Alan Feitelson
Supported by an unrestricted educational grant from the Robert E. Stowell Endowment Fund

ASIP Outstanding Investigator Award Lecture: New Approaches to the Pathology and Genetics of Neurodegeneration
Award Recipient: Mel Feany

ASIP Presidential Symposium: Resolving Cell Death and Inflammation: Implications in Disease
Chaired: Linda McManus

ASIP Awards Presentation and Membership Business Meeting
Chaired: Linda McManus

Awards Reception
All EB attendees are welcome to attend

Tuesday, April 21, 2009

Beyond Genomics: Epigenetic Pathogenesis of Cancer
Chaired: Ashley G. Rivenbark and Timothy H. Bestor
Supported by unrestricted educational grants from Active Motif and Zymo Research

Molecular Mechanisms and Dynamics of Leukocytes Breaching Tissue Barriers
Chaired: Sean P. Colgan and William A. Muller

ASIP Cotran Established Investigator Award Lecture: Developmental Pathways and Transcriptional Networks in Prostate Cancer Progression
Speaker: Carlos Moreno

Which Way the Wnt Blows: Implications in Tissue Pathobiology
Chaired: Asma Nusrat
Co-Chaired: Youhua Liu

Wednesday, April 22, 2009

Pathobiology: Genetically Engineered Mouse Models
Chaired: Alexander Nikitin and Robert D. Cardiff

Guest Societies:

- American Society for Matrix Biology
- American College of Veterinary Pathologists
- Pulmonary Pathology Society
- International Society for Analytical and Molecular Morphology
- International Society for Biological and Environmental Repositories
- Society for Cardiovascular Pathology
- Italian Pathology Society

Early Registration Deadline:

February 9, 2009

PPS Pulmonary Pathology Society NEWS

The PPS is pleased to highlight many upcoming and outstanding educational programs. The PPS companion meeting at the 2009 USCAP annual meeting will take place on Saturday, March 7, 2009 and is entitled "Smoking Related Lung Disease." This meeting will include talks on various aspects of smoking-related lung disease by Drs. Teri Franks, Keith Kerr, and Mary Beth Beasley.

The PPS symposium at the upcoming ASIP Annual meeting at Experiment Biology 2009 on Saturday, April 18, 2009 is titled "Stem Cells in Lung Development and Disease." This symposium features talks by Drs. Jeffrey Whitsett, Victor Thannickal, Barry Stripp, Darrell Kotton, and Carla Kim.

The Pulmonary Pathology Society is also looking forward to its 2009 Biennial meeting from June 24 to June 26, 2009 in Portland, Oregon. This promises to be a fabulous meeting with workshops on many diverse topics including a keynote address entitled: "New Insights Into the Molecular Biology of Interstitial Lung Disease" to be delivered by Dr. Robert Homer, an update on "The New Multidisciplinary Classification of Lung Adenocarcinoma" to be given by Dr. William Travis, and others (see ad on page 11 for more details). We are also currently accepting abstracts for consideration of presentation and publication. More information concerning registration procedures can be found on our website (http://www.pulmonarypath.org). Please notify any colleagues you think might be interested.

Aside from the meetings listed above, the PPS membership and activities have continued to expand. The PPS has endorsed or co-sponsored other national and international educational programs including "The Pathology of Thoracic Tumors and Neoplastic Lung Disease," November 7-8, 2008 in Paris, France, the "International Conference on Pathology of Chest Diseases," December 6-7, 2008 in Delhi, India, and the "ASCP Update in Pulmonary Pathology: Contemporary Classification and Diagnosis," April 2-4, 2009, Santa Fe, NM. Further details can be found on the PPS website at http://www.pulmonarypath.org.

Donald Guinee, MD
President, PPS

Biosecurity: Striking Balance

(continued from page 1)

(revised, although not significantly changed, in June 2007) to multiple stakeholder groups that conduct and/or support life science research, as well as to government departments and agencies. The NSABB/Dual Use Research Issues subcommittee of FASEB's Science Policy Committee was set up as an ad hoc committee chaired by ASIP member, Avrum Gotlieb. The subcommittee's mission is to monitor and respond to regulatory/oversight efforts related to dual use life science research, including those of the National Science Advisory Board on Biosecurity (NSABB). The subcommittee is also monitoring and responding as necessary to related biosecurity policy issues, such as efforts to develop a biosecurity code of conduct for life scientists and discussions of international harmonization of dual use research oversight. In all of these activities, the subcommittee is committed to ensuring that the voice of the research scientist is heard in these ongoing policy discussions. FASEB submitted its initial response to this draft to Dr. Kasper, Chair, NSABB in August 2007. This response is on the web at: http://opa.faseb.org/pdf/NSABB.Final.8.8.07.pdf and was prepared by the Dual Use/NSABB Subcommittee and ratified by FASEB's Board of Directors. Subsequently, Dr. Gotlieb and other members of FASEB's leadership have been invited to participate in NSABB sponsored workshops and provide additional input to the U.S. Government's policy development process. Although our position received strong support from FASEB leadership, a survey of FASEB member societies revealed that the dual use issue is low on their list of policy priorities and there appears to be very little awareness of dual use issues among their member scientists. It is of interest that only one FASEB society, the American Association of Immunologists (AAI), has a committee to deal with dual use research.

Life science researchers and the institutions at which they work have a professional responsibility to be aware of security issues related to dual use research. There are shared concerns in both the academic research and the security communities, and dialogue between them is essential. Unfortunately, based on our own membership survey, we find that awareness of dual use issues seems to be very low among life scientists, confirming the findings of previous investigators. Moreover, when scientists are made aware of current efforts related to dual use research, it is seen couched as an issue of regulatory burden, rather than as an issue of responsible conduct of research. This is problematic both for acceptance of any oversight schema amongst the scientific community and for reducing risks related to dual use research of concern.

There is general agreement that there needs to be greater awareness of dual use research issues throughout the life sciences community, although there is disagreement about how best to achieve this. Both the NRC report of dual use research and the NSABB's oversight proposal emphasized the need for education of the biological research community about dual use issues. There have been suggestions that formulating a code of conduct for life scientists, another recommendation of NSABB, could be used as an awareness raising tool. To this end, a number of international organizations have dedicated time towards developing such a code, including the United Nations Educational, Scientific and Cultural (continued on page 12)

Pulmonary Pathology Society
2009 Biennial Meeting

Program Organizers:
Donald G. Guinee, Jr.
Philip T. Cagle
Mary Beth Beasley
Timothy C. Allen

June 24-26, 2009
Embassy Suites Portland - Downtown
Portland, Oregon (USA)

Welcome, Donald Guinee

Keynote Address: New insights into the molecular biology of interstitial lung disease, Robert Homer

Update in Pulmonary Neoplasia I
Chairs: Masayuki Noguchi and Joseph Tomashefski
- **The new multidisciplinary classification of lung adenocarcinoma,** William Travis
- **Update on evolving concepts of lymphoproliferative disorders of the lung,** Michael N. Koss
- **Pathology/Radiology correlation of neoplastic and non-neoplastic lung diseases, Part II,** Teri Franks, Jeff Galvin

Update in Pulmonary Neoplasia II
Chairs: Alberto Marchevsky and Osamu Matsubara
- **Classification of neuroendocrine carcinomas,** Douglas Flieder
- **Debate: Consensus classifications revisited: pros and cons of the WHO classification for neuroendocrine tumors,** Pro: William D. Travis; Con: Mary Beth Beasley
- **Panel Discussion: Pulmonary neoplasia,** William Travis, Mary Beth Beasley, Douglas Flieder, Michael Koss, Teri Franks, Masayuki Noguchi

Update on Pulmonary Neoplasia III
Chairs: Tom Sporn and Toshiaki Kawai
- **Molecular targeted therapy of lung cancer and the role of the pathologist**, Elisabeth Brambilla
- **Molecular pathologic diagnosis of lung tumors**, Sanja Dacic

Update on Non-Neoplastic Lung Diseases I
Chairs: Armando Fraire and Junya Fukuoka
- **New insights in granulomatous lung disease**, Henry Tazelaar
- **Pulmonary vasculitis**, Eugene Mark
- **CT pathology correlation in diffuse lung disease**, Kevin Leslie

Brief Case Presentations I
Chair: Andras Khoor

PPS Dinner Presentation: History of Pulmonary Pathology, David Dail

Update on Non-Neoplastic Lung Disease II
Chairs: Megan Dishop and Aliya Husain
- **Update on idiopathic interstitial pneumonias**, Tom Colby
- **Evolving concepts of small airways disease**, Jeff Myers

Update on Non-Neoplastic Lung Disease III
Chairs: Belinda Clarke and Joanne Yi
- **Respiratory bronchiolitis, airway centered interstitial fibrosis and fibrotic NSIP**, Samuel Yousem
- **New and interesting non-neoplastic pediatric lung diseases**, Fred Askin

Brief Case Presentations II
Chair: Kelly Butnor

Update on Pleural Neoplasia
Chairs: Philip Hasleton and Douglas Henderson
- **Update on the diagnosis of mesothelioma - the International Mesothelioma Panel Project,** Francoise Galateau-Salle
- **The separation of benign from malignant mesothelial proliferations: Are we any smarter than we were 10 years ago?** Andrew Churg
- **Pleural neoplasia: entities other than diffuse malignant mesothelioma,** Tim Allen
- **Molecular pathology and molecular targets suitable for mesothelioma therapy**, Helmut Popper

Update on Asbestos, Asbestosis and Associated Malignancies
Chairs: Bill Funkhouser and Keith Kerr
- **Update on the PPS/CAP *Guidelines for the Diagnosis of Asbestosis***, Victor Roggli
- **Environmental exposures, heredity and mesothelioma in Turkey,** Handan Zeren
- **Debate: Asbestos exposure and lung cancer**
  Moderators: Phil Cagle and Koichi Honma
  Pros: Richard Attanoos, Allen Gibbs
  Cons: Sam Hammar, Victor Roggli
- **Panel discussion of mesothelioma and occupational lung disease,** Francoise Galateau-Salle, Andrew Churg, Helmut Popper, Victor Roggli, Douglas Henderson

Mystery Cases
Chair: Mary Beth Beasley

www.pulmonarypath.org
PPS Pulmonary Pathology Society

BASIC RESEARCH - TRANSLATIONAL DISCOVERY - CLINICAL APPLICATIONS

Interested in Pathology Informatics?

Participate in the ASIP INFORMATICS Scientific Interest Group

ASIP members with an interest in pathology informatics and the integration of clinical and translational science (e.g. NIH-CTSA Awards) are invited to participate in the ASIP Informatics Scientific Interest Group (SIG) development team beginning in 2009, under the direction of John A. Smith, MD, PhD, Director of Laboratory Medicine at the University of Alabama, Birmingham Medical Center.

Do you have an interest in:

- Integrating pathology informatics with medical informatics at your institution?
- Developing informatics resources and expertise at your institution?
- Participating in a focused informatics listserv with other ASIP members?
- Meeting with other ASIP members with an interest in informatics at the ASIP Annual meeting at Experimental Biology?

If you are interested in participating in the Informatics SIG, please email Tara Snethen, ASIP Senior Director of Society Services at tsnethen@asip.org to indicate your interest. **Plan now to attend the first ASIP Informatics Scientific Interest Group Breakfast Meeting** *(please register to reserve your complimentary breakfast)* **at the ASIP Annual Meeting at Experimental Biology on Tuesday, April 21, 2009 in New Orleans.** Watch for more details and registration information in early January on the ASIP website.

Biosecurity: Striking Balance

(continued from page 10)

Organization (UNESCO), the Food and Agriculture Organization of the United Nations (FAO), and the UK's Council for Science and Technology. In fact, the 2005 Meeting of Experts of the Biological Weapons and Toxins Convention was on the "content, promulgation, and adoption of codes of conduct for scientists."

However, as ongoing awareness raising efforts continue, the question arises: Is raising awareness about dual use research issues sufficient, as well as necessary? The NSABB itself states that "that one of the best ways to address concerns regarding dual use research is to raise awareness of dual use research issues and strengthen the culture of responsibility within the scientific community." Is education and/or promulgation of responsible research codes of ethics enough to adequately address the risk of these rare events or is a more formalized oversight system necessary? To help address this question, it is necessary to examine the challenges related to dual use research oversight, foremost among which is the issue of identifying dual use research of concern.

The term "dual use" is often used to describe the possible misuse of beneficial, scientific research or technology. It is a vague term and is particularly troublesome for the life sciences in which nearly all research, given an active enough imagination, could potentially be misused for harmful purposes. NSABB has tried to narrow down the research under consideration by defining a subset of dual use life research of concern, or DURC. This is defined as: "Research that, based on current understanding, can be reasonably anticipated to provide knowledge, products, or technologies that could be directly misapplied by others to pose a threat to public health and safety, agricultural crops and other plants, animals, the environment, or material." However, the identification of research as DURC, and therefore in need of oversight, poses tremendous difficulty. NSABB itself found that there were "significant differences in assessments made by individual NSABB members" and that there were "difficulties inherent in explicitly defining the point at which the magnitude and/or immediacy of the threat of misuse makes dual use research 'of concern." To-date there is no reliable assessment tool to identify DURC and practical experience suggests considerable technical expertise may be necessary for true recognition. Some scientists suggest that the intent of the scientist to do harm and not necessarily the nature of the research project itself should be an important component of DURC.

The inability to consistently and quickly identify DURC is a major barrier to oversight. An oversight process requires objective clarity in establishing when DURC exists; in this sense the regulation of DURC is different than the regulation of other research ethics issues, such as animal use, where it is clear an animal model is being used. Since all science has the potential for misuse, both the scientific and biosecurity communities need to be realistic in the context of current practices in biomedical investigation and existing regulation schema. Although, as NSABB states, it is likely only a small portion of all biomedical research would truly be considered DURC, it would be necessary to review the entire portfolio of research to flag those few projects. The inability to easily identify science as DURC could make such a review exceedingly difficult, creating a burden (continued on page 15)

International Society for Biological and Environmental Repositories

ISBER 2009 Annual Meeting & Exhibits

ISBER, Celebrating a Decade of Growth and Development in International Biorepository Excellence

May 12 - 15, 2009 - Portland, Oregon, USA

Plenary Sessions
Workshops
Contributed Papers
Posters
Round Table Lunches
Working Groups
Networking
Exhibits
Corporate Workshops

PRELIMINARY PROGRAM

TUESDAY, MAY 12, 2009

- **ISBER'S First Ten Years: A Look Back, A Look Ahead**
- **Opening Reception, Visit the Posters and Exhibits**

WEDNESDAY, MAY 13, 2009

- **"Getting to Know ISBER" Breakfast**
- **Preservation of Global Resources for Future Generations**
- **ISBER's Working Group Presentations** ***Fundraising Promotion, Automated Repositories, Biospecimen Science, Rights to & Control of Human Tissue Samples, and Informed Consent Procedures for the Collection of Biospecimens***
- **RoundTable Lunch Discussions**
- **Corporate-Sponsored Workshops**
- **Poster Discussion**
- **Workshop: Quality Control and Quality Assurance** *(repeated on Friday)*
- **Workshop: Repository Challenges: Assessing the Value of Specimen Resources - Knowing When to Hold 'Em and When to Fold 'Em** *(repeated on Friday)*

THURSDAY, MAY 14, 2009

- **Working Group Breakfasts**
- **Innovations in Biobanking Informatics**
- **ISBER Awards Presentation & Business Meeting**
- **RoundTable Lunch Discussions**
- **Corporate-Sponsored Workshops**
- **Contributed Papers Sessions**

FRIDAY, MAY 15, 2009

- **Working Group Breakfasts**
- **Emerging Legal & Ethical Issues: Challenges and Practical Solutions**
- **Friday Afternoon Social Programs TBD,** Complete information will be available online at *www.isber.org*

Optional Workshop

Designing and Maintaining a Tissue Repository

Tuesday, May 12, 2009, 8:00am - 12:00pm
William E. Grizzle and Katherine C. Sexton,
Tissue Collection and Banking Facility
University of Alabama at Birmingham and Southern Division, Cooperative Human Tissue Network, USA
(Requires an additional registration fee)

Who Should Attend?
Anyone thinking about or planning to establish a repository should attend. Those who have recently begun repositories will also find the workshop useful.

How You Will Benefit from this Workshop

- Gain insight about the various repository models available
- Learn what issues should be considered when designing and operating a repository
- Discuss the various types of services your repository might want to provide (without performing the investigator's research for them!)
- Understand the importance of quality control and safety in the repository
- Learn how to develop an appropriate cost recovery model
- Gain a better understanding about the legal, ethical, and regulatory issues that may affect the repository
- Understand the "nuts and bolts" of operating a repository
- Identify space and resources needed to begin a repository

Appropriate time will be devoted to questions and audience discussion.

DEADLINES

Abstract Submission
February 2, 2009
Early (Reduced) Registration
February 23, 2009
Advance Registration
April 6, 2009
Housing Reservation Deadline
April 9, 2009

ISBER

International Society for Biological and Environmental Repositories
A Division of the American Society for Investigative Pathology (ASIP)
9650 Rockville Pike, Bethesda, MD 20814-3993 (USA)
Tel: 301-634-7949, Fax: 301-634-7990
Email: isber@asip.org
Web: www.isber.org

CALL FOR LATE-BREAKING ABSTRACTS

Today's Research
Tomorrow's Health
April 18-22
New Orleans, LA

DEADLINES

Early Registration:
February 9, 2009

Housing:
March 10, 2009

Deadline for Submission: Wednesday, February 25, 2009
www.eb2009.org

Late-breaking abstracts will be accepted beginning the week of December 7, 2008. The abstracts are for poster presentations only and will be scheduled on Wednesday, April 22, 2009.

Late-breaking abstracts must be submitted online at www.eb2009.org with the $90 abstract fee by Wednesday, February 25, 2009.

Late-breaking abstracts will be published online in *The Faseb Journal*. Please visit www.eb2009.org for information about the meeting, including late-breaking abstract topic categories, the preliminary program, registration and hotel information. Please contact eb@faseb.org for more information.

Register online by February 9, 2009 for the lowest registration rates. Complete hotel reservations by March 10, 2009.

Biosecurity: Striking Balance

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for researchers and institutions, and running counter to NSABB's statement that "Oversight measures should not create impediments to legitimate life sciences research."

Nearly any regulatory or oversight schema may be viewed as reasonable or feasible in isolation. In reality, however, biomedical researchers and research laboratories are already subject to a great deal of necessary regulation, and the costs and benefits of introducing new requirements must be carefully considered. There is a need to understand and be able to evaluate the impact of an oversight process, especially with respect to regulatory burden and the liability of individual scientists and the institutions at which they work. This is particularly true given NSABB's call for "compliance mechanisms, penalties for non-compliance, and processes for adjudication." A number of questions are raised, including: How will compliance be enforced? Are audits and inspections required? Will there be civil penalties, closure of facilities/institutions, and/or loss of federal funding? If there is genuine disagreement over whether research should be classified as DURC and somehow controlled, will there be an appeals process? If a project is reviewed, either by an investigator or a local review entity, and found not to be DURC through a good faith review process, only later to be misused, wherein rests the liability?

There is also the concern that DURC oversight may interfere in the scientific training process. Trainees, graduate students, and post doctoral students may find that working on projects that are deemed to be DURC will interfere with their ability to present and to publish their findings. A practical reality of DURC oversight is that there are many points in the research process during which dual use concerns might be raised, making it difficult to predict in advance which projects might carry the least risk for trainees, as well as raising the issue of how often research should be reviewed for DURC potential. Again, is a formal review and oversight system necessary to reduce the risk of research misuse, or would adding a component of dual use research education to required research ethics training for students be more appropriate?

Finally, oversight of DURC carries enormous implications for the international exchange of knowledge, nationally and internationally. Would review of research for DURC potential interfere in the informal exchange between national or international scientific colleagues or presentation of information at meetings? If one nation regulates DURC and another does not, would barriers be raised that would inhibit international collaboration and exchange of knowledge? Indeed, the issue of global harmonization of DURC oversight presents a whole new set of challenges and questions to be addressed.

Although skepticism may remain about the value and feasibility of DURC oversight, FASEB agrees that it is essential that any process to regulate DURC that moves forward be global in nature and its application uniform internationally. It is necessary to develop international guidelines that can be regulated locally to achieve a uniform standard globally. The scientific enterprise is global in nature and there is greater access to international publications; controlling information in one location will just result in dissemination in another. People and materials frequently travel internationally and unfettered sharing of information contributes to worldwide scientific advancement. However, it must be acknowledged that a harmonized or even coordinated approach to DURC oversight or even discussion of dual use issues will be challenging, to say the least. (continued on page 16)

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Stanley Cohen, MD - President-Elect
Charles Parkos, MD, PhD - Vice President
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Divisions of ASIP:

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Biosecurity: Striking Balance

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It may be that DURC oversight will be one more regulatory doorway through which the scientific community must proceed to ensure public trust and global security. Ultimately, however, the approach must meet the standard articulated by the U.S. National Academies, namely that "that any biosecurity policies or regulations implemented are scientifically sound and are likely to reduce risks without unduly hindering progress in the biological sciences and associated technologies." This is a philosophy that countries must move forward in tandem to adopt. It remains to be seen whether such a goal is achievable.

About the authors: Dr. Gotlieb is a Past President of ASIP and outgoing Chair of the Department of Laboratory Medicine and Pathobiology at the University of Toronto, Canada. As Vice President of FASEB's Science Policy Committee, he leads this active committee in representing FASEB's 80,000+ constituents on an wide range of science policy issues.

Dr. Wolinetz is Director of Scientific Affairs and Public Relations in FASEB's vital Office of Public Affairs. She is a regular contributor to advocacy articles appearing in *ASIP Pathways* and assists in the preparation and production of the popular *Breakthrough* series of papers on the impact of basic research toward understanding disease processes and finding cures.

For more information, email Dr. Gotlieb at avrum.gotlieb@utoronto.ca or Dr. Wolinetz at cwolinetz@faseb.org, or visit http://opa.faseb.org/.

Are you Interested in Serving on a Scientific Interest Group Development Team?

ASIP currently offers 13 Scientific Interest Group (SIG) designations. If you are interested in serving on a team to activate ***your*** SIG area of interest (see list below), please email Tara Snethen, ASIP Senior Director of Society Services at tsnethen@asip.org to indicate your interest.

What do Scientific Interest Groups do?

SIGs provide an excellent forum to interact with your colleagues in focused listservs, and to develop scientific programming and companion social events at the ASIP Annual Meeting. For example, the **Liver Pathobiology** SIG team, under the direction of Paul Monga, MD, University of Pittsburgh, provides guidance in programming liver scientific sessions at the Annual Meeting. The team also initiated **Club Hepatomania**, which hosts the *Highlights in Liver Pathology* Session and *Reception* at the ASIP Annual Meeting.

What are the Current SIG Areas?

- Analytical and Molecular Morphology
- Cell Injury
- Gene Expression
- Inflammation/ Immunopathology
- Informatics
- Liver Pathobiology
- Molecular Markers
- Mechanisms of Disease
- Neoplasia/ Growth Regulation
- Neuropathology
- Pulmonary Pathobiology
- Tissue Banking
- Vascular Pathobiology
- Veterinary Pathology

A Constituent Member of FASEB

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