

AAI NEWSLETTER

The American
Association of
Immunologists

JUNE 2015



**Early immunology researcher in Louisiana
Charles C. Bass (AAI 1916)**

See page 20

*Investigating a row of
mosquito infested sheds in
New Orleans in 1905 -
Yellow fever work.*

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2015 AAI Election Results

AAI congratulates the following members on their election for terms commencing July 1, 2015, and extends a sincere thanks to all candidates in this year's balloting. Twenty-five percent of the AAI voting membership participated in this election and we thank them for investing in their profession and in the mission of AAI.

President (2015–2016)

Dan R. Littman, M.D., Ph.D. (AAI '87)
HHMI Investigator; Helen L. and Martin S. Kimmel Professor of Molecular Immunology Skirball Institute of Biomolecular Medicine New York University School of Medicine

Vice-President (2015–2016)

Arlene H. Sharpe, M.D., Ph.D. (AAI '96)
George Fabyan Professor of Comparative Pathology, Department of Microbiology and Immunobiology, Harvard Medical School and Brigham and Women's Hospital

Secretary-Treasurer (2015-2018)

Edith M. Lord, Ph.D. (AAI '78)
Professor of Microbiology and Immunology and of Oncology; Senior Associate Dean for Graduate Education, University of Rochester School of Medicine and Dentistry

Councillor (2015-2019)

Jenny P. Ting, Ph.D. (AAI '97)
William Rand Kenan Professor of Genetics and Microbiology-Immunology, Lineberger Comprehensive Cancer Center, Center for Translational Immunology, and Inflammatory Diseases Institute, University of North Carolina at Chapel Hill School of Medicine

Awards Committee (2015-2018)

Steven L. Reiner, M.D. (AAI '94)
Charles H. Revson Professor in Cancer Research, Department of Microbiology and Immunology and Professor of Pediatrics Columbia University College of Physicians and Surgeons

Finance Committee (2015-2018)

Janice S. Blum, Ph.D. (AAI '97)
Chancellor's Professor of Microbiology and Immunology; Associate Vice Chancellor for Graduate Education, Indiana University-Purdue University Indianapolis; Associate Dean of the University Graduate School Indiana University

Nominating Committee (2015-2016)

Gary A. Koretzky, M.D., Ph.D. (AAI '92), Chair
Dean, Weill Cornell Graduate School; Senior Associate Dean for Research, Weill Cornell Medical College

Albert S. Bendelac, M.D., Ph.D. (AAI '95)
A. N. Pritzker Professor, Department of Pathology, University of Chicago

Melissa A. Brown, Ph.D. (AAI '90)
Professor, Department of Microbiology and Immunology, Northwestern University Feinberg School of Medicine

Akiko Iwasaki, Ph.D. (AAI '00)
HHMI Investigator, Professor, Department of Immunobiology and Department of Molecular, Cellular, and Developmental Biology, Yale School of Medicine

Ulrich H. von Andrian, M.D. (AAI '97)
Edward Mallinckrodt Jr. Professor of Immunopathology, Department of Microbiology and Immunobiology Harvard Medical School

Program Committee (2015-2018)

Jennifer A. Punt, V.M.D., Ph.D. (AAI '97)
Senior Associate Dean for Student Research; Professor of Medicine and of Microbiology and Immunology, Columbia University Medical Center, Columbia University College of Physicians and Surgeons

Anne I. Sperling, Ph.D. (AAI '10)
Associate Professor, Department of Medicine Section of Pulmonary and Critical Care Medicine, University of Chicago

Publications Committee (2015-2019)

Penelope A. Morel, M.D. (AAI '93)
Professor of Immunology and of Medicine, University of Pittsburgh; Member, University of Pittsburgh Cancer Institute



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M. Michele Hogan, Ph.D.

www.aai.org/

About/Departments-Staff



2015 Introductory Course in Immunology

July 14–19, 2015 • Long Beach Convention Center, Long Beach, California

Director: Juan Carlos Zuñiga-Pflücker, Ph.D.
University of Toronto and Sunnybrook Research Institute

Don't miss the most comprehensive introduction to immunology available!

This intensive two-part course, taught by world-renowned immunologists, provides a comprehensive overview of the basics of immunology. This course is for students new to the discipline or those seeking more information to complement general biology or science training. **Part I (July 14–16)** is a detailed introduction to the basic principles of immunology and is suitable for students with a general biology background. **Part II (July 17–19)** is a clinically oriented lecture series focusing on specialty areas.

Parts I and II may be taken independently at the discretion of the student.

Faculty

Juan Carlos Zuñiga-Pflücker, *University of Toronto and Sunnybrook Research Institute*
Introduction to the Immune System

Lewis L. Lanier, *University of California, San Francisco*
Innate Immunity: Introduction to the Cells

Andrea J. Tenner, *University of California, Irvine*
Complement

Jessica A. Hamerman, *Benaroya Research Institute*
Innate Immunity: Introduction to Pattern Recognition and Intracellular Signaling

Wendy L. Havran, *The Scripps Research Institute*
Introduction to Adaptive Immunity

Nilabh Shastri, *University of California, Berkeley*
Antigen Processing and Presentation

Juan Carlos Zuñiga-Pflücker, *University of Toronto and Sunnybrook Research Institute*
MHC Restriction and Thymic Selection

David Nemazee, *The Scripps Research Institute*
B Cell Development and Maturation

Shannon J. Turley, *Genentech, Inc.*
Dendritic Cells: The Bridge Between Innate and Adaptive Immunity

Michael Croft, *La Jolla Institute for Allergy and Immunology*
Effector T Cell Differentiation and Response

Shane Crotty, *La Jolla Institute for Allergy and Immunology*
B Cell Activation and Humoral Immunity

Arthur Weiss, *University of California, San Francisco*
Signaling in the Immune System

Stephen M. Hedrick, *University of California, San Diego*
Immune Homeostasis in Infection and Disease

Ninan Abraham, *University of British Columbia*
Cytokines

Megan K. Levings, *University of British Columbia*
T and B Cell Tolerance

Matthias G. von Herrath, *La Jolla Institute for Allergy and Immunology*
Autoimmunity

Olivia M. Martinez, *Stanford University School of Medicine*
Transplantation

Peter B. Ernst, *University of California, San Diego*
Mucosal Immunology

Steven F. Ziegler, *Benaroya Research Institute*
Type 2 Immunity

Linda A. Sherman, *The Scripps Research Institute*
Tumor Immunology

Robert L. Modlin, *University of California, Los Angeles David Geffen School of Medicine*
Immunity to Bacterial Pathogens

Steven M. Varga, *University of Iowa*
Immunity to Viruses

Michael J. Bevan, *University of Washington*
Immunologic Memory

Nicole Frahm, *Fred Hutchinson Cancer Research Center*
Vaccination

Donald B. Kohn, *University of California, Los Angeles*
Genetic Approaches to Immune-Mediated Diseases

Andrew C. Chan, *Genentech, Inc.*
Bench to Bedside to Bench: Current Issues in Immunology

For complete course details and registration, visit: www.aai.org/Education/Courses

For assistance, contact (301) 634-7178 or meetings@aai.org. Overseas applicants are advised to apply early for visas; for details, visit www.aai.org/Education/Courses/Visa.html.

AAI Submits Testimony to Congress on NIH Funding

AAI recently submitted testimony to the House and Senate Labor, Health and Human Services, Education, and Related Agencies (Labor-HHS) Appropriations Subcommittees, recommending an appropriation of at least \$32 billion for the National Institutes of Health (NIH) for fiscal year (FY) 2016. The testimony was submitted on behalf of AAI by AAI Committee on Public Affairs (CPA) Chair Clifford V. Harding, M.D., Ph.D.

The House and Senate Labor-HHS Appropriations Subcommittees are responsible for funding numerous federal agencies and programs, including health agencies (such as the NIH and the Centers for Disease Control and Prevention), education programs (such as Head Start and Pell Grants), and labor programs (such as Job Corps and those programs administered by the Occupational Safety and Health Administration). Before drafting the annual appropriations bills that fund these agencies and programs, the subcommittees hold informational hearings to learn more about these agencies and programs and to hear what is planned for the funds that are appropriated. They also solicit testimony from stakeholders and other interested parties, including those in the biomedical research community. AAI takes advantage of this opportunity each year by submitting written testimony to both appropriations subcommittees.

The AAI Senate Labor-HHS testimony “recommends an appropriation of at least \$32 billion for NIH for FY 2016 to fund important ongoing research, strengthen the biomedical research enterprise, and ensure that the most talented scientists, trainees, and students are able to pursue careers in biomedical research in the United States.”

The full House testimony is reprinted at the end of this Focus on Public Affairs section — see page 7. AAI submitted similar testimony to the Senate Labor-HHS Appropriations Subcommittee in early April.

House, Senate Agree on FY 2016 Joint Budget Resolution

In early May, the Senate and House completed work on a joint budget resolution, the first such agreement between the chambers since 2009. The resolution, which was narrowly approved by both the Senate (51-48) and the House (226-197), would cut an estimated \$5.3 trillion in federal spending over the next decade.



Although the budget resolution does not include a specific funding level for NIH or other science agencies, it dramatically slashes nondefense discretionary spending, the portion of the budget that funds NIH, by \$496 billion over 10 years. For FY 2016, the resolution maintains the current post-sequestration cap on nondefense discretionary spending (slightly less than \$1 billion above FY 2015), leaving virtually no room for budget growth. For future years, the resolution caps nondefense discretionary spending at levels well below the sequestration caps currently in law.

The resolution does indicate general support for NIH and biomedical research through the inclusion of several deficit-neutral reserve funds (DNRF), which authorize increased spending for an agency or program as long as that spending does not increase the deficit. One such DNRF included in the joint budget resolution, which was authored by Senator Jerry Moran (R-KS), supports “Federal investments in precision medicine and biomedical research, which may include increasing funding to account for inflation,” as well as finding ways to treat and cure diseases like Alzheimer’s. DNRFs are, however, largely symbolic and do not necessarily lead to increased funding.

The joint budget resolution serves as a blueprint for congressional spending decisions; such resolutions are never signed into law. Further, these resolutions provide only overall spending levels and do not specify spending levels for specific agencies and programs.

AAI Issues Statement on the Importance of Vaccination

AAI recently issued a statement expressing strong support for routine and seasonal vaccinations (see www.aai.org > Public Affairs > Letters and Comments). In the statement, AAI emphasizes that decades of research have found that vaccinations are safe and effective and that timely adherence to recommended immunization schedules prevents disease and greatly improves individual and public health.

AAI issued the statement to counter continuing resistance to vaccination among a relatively small but vocal sector of the American public. The failure to vaccinate young children has left many vulnerable to otherwise preventable childhood diseases, including measles, the incidence of which has increased recently. The measles outbreak, like concerns about the efficacy of this year's seasonal flu vaccine, has been thoroughly covered in the media and, as was described in the last edition of the *AAI Newsletter*, has been the subject of several hearings in Congress.

AAI Submits Comments on a Proposed NIH Emeritus Award for Senior Investigators

On March 6, 2015, AAI submitted preliminary comments in response to an NIH "Request for Information (RFI): Sustaining the Biomedical Workforce and a Potential Emeritus Award for Senior Researchers" (<http://grants.nih.gov/grants/guide/notice-files/NOT-OD-15-064.html>).

The RFI sought public comment on "[c]ommunity interest in an emeritus award that allows a senior investigator to transition out of a role or position that relies on funding from NIH research grants[.]" as well as parameters that might govern this type of award, including:

- "Ideas for how one would utilize an emeritus award (e.g., to facilitate laboratory closure; to promote partnership between a senior and junior investigator; to provide opportunities for acquiring skills needed for transitioning to a new role)
- Suggestions for the specific characteristics of an emeritus award (e.g., number of years of support; definition of a junior faculty partner)
- Ways in which NIH could incentivize the use of an emeritus award, from the perspectives of both senior investigators and institutions

- Impediments to participation in such an award program, from the perspectives of both senior investigators and institutions[.]"

In his comments, AAI CPA Chair Harding expresses appreciation for the NIH effort to solicit ideas from the community, but indicates that the brief comment period allotted is "insufficient time for many organizations, including AAI, to receive member input or generate a thoughtful response on such a complex issue." Harding recommended that NIH release a follow-up RFI once more detailed proposals have been developed (for details, go to www.aai.org > Public Affairs > Letters and Comments).

AAI will be following any future developments resulting from this RFI and welcomes comments from members on this NIH proposal.

NCI Announces Two New Pilot Grant Programs

The National Cancer Institute (NCI) Board of Scientific Advisors recently approved two pilot funding initiatives: the Predoc to Postdoc (P2P) Primary Transition Award (K21/K00) and the Research Specialist Award (K05). Both of these funding opportunities would be tested for five years and would be awarded to a small number of individuals during that time. A shared goal of these programs is to introduce stability into laboratories and biomedical career tracks.

The P2P Primary Transition Award would bridge graduate school and postdoctoral appointments by awarding late-stage graduate students funds that would be portable to their new postdoctoral position. This award is designed to incentivize talented graduate students to continue their careers in cancer research. It would do so by providing a salary that is higher than the NIH National Research Service Award stipend level, making the salary more competitive with non-academic positions and these scientists more attractive candidates to laboratories seeking postdoctoral fellows. This award would also allow NIH to track the grantees to assess time to Ph.D. completion, transition to postdoc, and whether the P2P award leads to successful future K99 and R01 applications. Data from this tracking would be used to determine factors that positively influence time to degree, in addition to determining whether this type of award would cultivate future success. Each award would last six years, and NCI would initially award 30 per year.

The Research Specialist Award would provide five years of salary funding, with the potential to renew, to mid-career research scientists, core facility managers, and data scientists. By providing this award, NCI would attempt to address two challenges: 1) the increasing importance to laboratories of stable groups with a broad spectrum of expertise and 2) the need for a defined career path for accomplished scientists who want to continue working at the bench but who do not want to run a lab. The award would be given based on the productivity of the scientist, both individually and as measured by his or her contributions to the lab as a whole. Initially, the NCI intends to issue 50–60 awards over an 18-month period.

NIH Updates Public Health Service Policy on Humane Care and Use of Laboratory Animals

In March, the NIH announced that the Public Health Service (PHS) Policy on Humane Care and Use of Laboratory Animals had been updated (<http://grants.nih.gov/grants/guide/notice-files/NOT-OD-15-079.html>). The 2015 version includes minor changes from the prior year's policy, specifically:

- “adoption of the 8th edition of the Guide for the Care and Use of Laboratory Animals;
- implementation of the 2013 edition of the AVMA Guidelines for the Euthanasia of Animals;
- modification to footnotes 2, 7, 9, 11, and 13 requiring that PHS-Assured institutions comply with USDA regulations that are applicable to their programs;
- change in OLAW contact information; and
- minor grammatical corrections.”

In May 2014, AAI responded to a request for information regarding the addition of proposed guidance on significant changes in animal protocols (<http://grants.nih.gov/grants/guide/notice-files/NOT-OD-14-063.html>). In the comments, AAI urged that the revised policy not increase the regulatory burden on researchers or the International Animal Care and Use Committees that oversee institution protocols and expressed support for the comments made by the Federation of American Societies for Experimental Biology (FASEB; go to www.aai.org > Public Affairs > Letters and Comments). FASEB recommended that a significant change should be limited to instances of an increase in animals or

procedures used and requested that the requirement for reporting non-significant changes be removed (go to faseb.org > Policy and Government Affairs > Science Policy Issues > Animals in Research and Education > Statement of Principles). The 2015 PHS policy reflects these recommendations.

Former AAI Public Policy Fellow Continues Her Advocacy

Former AAI Public Policy Fellow (2013–2014) Stephanie James, Ph.D., recently put the skills she learned as an AAI Fellow to use in her home state of Colorado. Now a professor at Regis University School of Pharmacy in Denver, James, with the help of Colorado State Senator Michael Johnston, organized a “Lunch and Learn” session at the state capitol for interested state legislators. The March 3 session included a lunch provided by a student group from the University of Colorado.



Stephanie James

James, her colleague Dr. Robert Haight, and four other speakers representing a variety of Colorado universities, each presented an overview of their research to an audience of senators, representatives, and legislative aides. Attendees learned about immunizations, the importance of animal models in basic research, emerging infectious diseases, and genomic sequencing. A question and answer period followed.

James conceived the idea of organizing such a meeting after a conversation with a state senator about vaccines. “I was surprised that the individuals making decisions about immunization laws had so many questions about the safety and efficacy of vaccines,” James said. “During my AAI fellowship, I was introduced to the importance of communicating the need for biomedical research funding, and perhaps more importantly, of the need to educate lawmakers about research in general.” However, living in Colorado, James found it difficult to do more than write emails to federal officials and keep up-to-date on federal activities through AAI news reports. During the 2014

election cycle, James says she realized that many federal lawmakers begin their political careers at the state level. With this knowledge, she decided to focus her efforts on educating her local Colorado legislators about biomedical research.

After enlisting the support of Senator Johnson, a member of the Colorado Senate Education Committee, whose office secured a location and invited fellow legislators, James invited colleagues from the University of Colorado, Colorado State University, and the University of Northern Colorado to join her in giving presentations.

The overall response from attendees was very positive. Senator Nancy Todd remarked, "It was great to have several experts come to the capitol and share with legislators the valuable work that is making a difference in the overall health of our citizens. Learning about infectious and emerging diseases that threaten the well-being of each one of us is imperative for us to then share

with our constituents. The discussion on immunizations continues to need to be based on fact, not scare tactics. With these experts on hand, we are able to back our opinions with factual information that is based on research."

This response was exactly what James had hoped to achieve. "Not only do our state lawmakers have an increased appreciation for biomedical research, but they also have scientists they can contact with questions about research when making policy decisions. Hopefully, sessions like this are a good beginning and can be replicated in other states." James has already been invited to repeat this session next year in Colorado.

AAI members who are interested in coordinating a similar session in their state are welcome to contact James at sjames001@regis.edu.

**Testimony of Clifford V. Harding, M.D., Ph.D., on behalf of
The American Association of Immunologists (AAI),
Submitted to the House Appropriations Subcommittee on Labor, Health and Human Services,
Education, and Related Agencies,
Regarding the Fiscal Year (FY) 2016 Budget for the National Institutes of Health
April 27, 2015**

The American Association of Immunologists (AAI), the world's largest professional society of research scientists and physicians who study the immune system, respectfully submits this testimony regarding fiscal year (FY) 2016 appropriations for the National Institutes of Health (NIH). **AAI recommends an appropriation of at least \$32 billion for NIH for FY 2016** to fund important ongoing research, strengthen the biomedical research enterprise, and ensure that the most talented scientists, trainees, and students are able to pursue careers in biomedical research in the United States.

NIH's Essential Role in Advancing Biomedical Research

As the nation's main funding agency for biomedical and behavioral research, NIH supports the work of "more than 300,000 researchers at more than 2,500 universities, medical schools, and other research institutions in every state and around the world."¹ More than 80% of the NIH budget is awarded to these scientists through nearly 50,000 competitive grants; about 10% of the NIH budget supports the work of the almost 6,000 government researchers who work in NIH laboratories or at the NIH Clinical Center.² NIH funding is a vitally important economic engine in the communities and states where these researchers work; in FY 2012, NIH funded research supported an estimated 402,000 jobs across the United States.³ NIH also provides crucial scientific leadership to the entire biomedical research enterprise, both within and beyond our borders. Advancing basic research from bench to bedside requires extensive collaboration among scientists from academia, government,⁴ and industry; all depend on NIH personnel and policies to guide and facilitate their efforts in this enormous, complicated, and high-stakes endeavor. In fact, the biotechnology and pharmaceutical industries rely heavily on NIH's investment in basic biomedical research; it is often this research that industry uses or further explores to develop new drugs and medical devices.⁵

Erosion of NIH Budget Slows Research and Threatens U.S. Preeminence

Although NIH funds most biomedical research in the United States, its purchasing power has been dramatically reduced by inadequate budgets that have been further eroded by inflation.⁶ In FY 2015, NIH's purchasing power is 22% lower than it was in FY 2003.⁷ This reduced purchasing power enables NIH to fund only ~ 16.8% of grant applications submitted, a steep decline from the ~32.4% it funded when its budget was robust.⁸ This loss is not only a barrier to advancing crucially important research, it is also devastating to those who are currently engaged in - or considering - a career in biomedical research. Researchers around the country are closing labs and losing jobs; in some cases, they are moving overseas, where support for biomedical research is rapidly growing.⁹ Many who do stay in the U.S. are engaged in an unrelenting and time consuming search for funding, when they should be conducting research and mentoring the nation's future researchers, doctors, inventors and innovators. Most importantly of all, we will never know what research has not been pursued - or how many potential treatments and cures have not been discovered - because of inadequate funding.

The Immune System: Essential to our Health, Crucial to our Future

As the body's primary defense against viruses, bacteria, and parasites, the immune system protects its host from a wide range of diseases and disorders. When it is operating properly, the immune system can provide powerful protection against many illnesses, including cancer, Alzheimer's disease, and cardiovascular disease. When it underperforms, it can leave the body vulnerable to infections, such as influenza, HIV/AIDS, tuberculosis, malaria, and the common cold. The immune system can also become overactive and attack normal organs and tissues, causing autoimmune diseases including allergy, asthma, inflammatory bowel disease, lupus, multiple sclerosis, rheumatoid arthritis, and type 1 diabetes. Immunologists are on the front lines, therefore, working to harness the immune system to protect people and animals from chronic and acute diseases and disorders, as well as from natural or man-made infectious organisms (including Ebola, plague, smallpox and anthrax) that could be used for bioterrorism.

Recent Immunological Advances: Providing Hope for Today - and Tomorrow

1. Cancer Immunotherapies: Real Results in the Fight Against Cancer

Lauded by *Science* magazine in 2013 as "The Science Breakthrough of the Year," the genetic engineering of a cancer patient's T cells (immune cells) to kill the patient's own cancer cells, a procedure known as immunotherapy, continues to advance.¹⁰ At NIH funded medical centers, scientists and doctors are observing a significant regression of blood cancers (non-solid tumors) in both children and adults.¹¹ This therapy, which the FDA granted Breakthrough Therapy designation in July 2014 (which can expedite approval of a therapeutic based on clear clinical efficacy), is poised to be used for even more difficult-to-treat solid tumor cancers, and is helping to inform ongoing clinical trials in breast, lung, prostate and brain cancer.¹² The success of these therapies has also attracted the investment of pharmaceutical companies and has led to the development of several new T cell therapy-focused biotechnology companies, illustrating how investment in NIH funded research creates opportunity - and jobs - in the private sector.

2. Ebola Outbreak: Finding a Vaccine to Save Lives

The 2014 Ebola virus outbreak in West Africa, the largest in recorded history, spread rapidly due to a lack of public health infrastructure, prophylactics, and therapeutics. Like many such diseases which have historically low rates of infection, Ebola had not attracted commercial interest. However, ongoing research by federal agencies, including NIH, provided a sufficient foundation for the development of several vaccine candidates, two of which are now being administered through clinical trials in the outbreak region and showing promising results.¹³ Although pharmaceutical companies are now involved in manufacturing vaccines and other potential therapies, it is the federal investment in research that has made possible a rapid response to this urgent health crisis.¹⁴ Because we do not know what infectious disease might emerge next, it is crucial that the federal government continue to fund basic biomedical research to ensure our ability to respond quickly, particularly when the public health benefit outweighs the potential commercial benefit.

3. *A New Way to Stop HIV ... and Other Infections and Diseases?*

Researchers have recently discovered that Clustered Regularly Interspaced Short Palindromic Repeats (CRISPR) systems - immune mechanisms used by bacteria to defend themselves from virus infection - present a novel therapeutic tool for immunologists, enabling them to successfully disrupt HIV replication, stop the growth of human cervical cancer cells and kill antibiotic-resistant bacteria.¹⁵ Immunologists are also exploring the use of CRISPR to repair defective genes in stem cells, which may treat individuals with diseases like sickle cell anemia and immune deficiencies.¹⁶

4. *New Therapeutic Provides Real Hope for Autoimmune Treatment*

In January 2015, the FDA approved the first of a new and highly effective class of treatments for psoriasis, a serious autoimmune skin disease.¹⁷ The new treatment inhibits IL-17 signaling, a process which initiates inflammation and which was first discovered by NIH funded researchers in 2005.¹⁸ This treatment has proven effective in Phase II clinical trials, with more than 70% of psoriasis patients showing over 75% clearance of disease, and nearly half showing 100% clearance of disease.¹⁹ Clinical trials targeting similar aspects of this pathway are yielding promising results and may offer hope to those suffering from other autoimmune diseases, including ankylosing spondylitis and rheumatoid arthritis.²⁰

Conclusion

AAI appreciates the subcommittee's strong support for NIH and for ensuring a robust biomedical research enterprise in the United States, and recommends an appropriation of *at least \$32 billion* for NIH in FY 2016.

1. <http://www.nih.gov/about/budget.htm>. NIH funds also support the work of non-scientist technical personnel.
2. *Ibid.*
3. <http://nih.gov/about/impact/economy.htm>.
4. AAI strongly opposes a federal policy that limits government scientists' ability to attend privately sponsored scientific meetings and conferences (http://www.hhs.gov/travel/travelpolicy/2012_policy_manual.pdf) and believes that "the rules have... made government scientists feel cut off from the rest of the scientific community, wreaked havoc with their ability to fulfill professional commitments, and undermined the morale of some of the government's finest minds." *Testimony (Amended) of Lauren G. Gross, J.D., on behalf of The American Association of Immunologists (AAI), Submitted to the Senate Homeland Security and Governmental Affairs Committee for the Hearing Record of January 14, 2014: "Examining Conference and Travel Spending Across the Federal Government"* (http://aai.org/Public_Affairs/Docs/2014/AAI_Testimony_to_Senate_HSGAC_01142014.pdf).
5. "[NIH]... annual research funding... is the most important source of discoveries in the health sciences that ultimately leads to the development of important new therapeutics..." Statement of Roger Perlmutter, Ph.D., Executive Vice President, Research & Development, Amgen, June 15, 2005 <http://www.rdmag.com/articles/2005/06/managing-rapid-biotech-growth>.
6. Federation of American Societies for Experimental Biology, *Funding Trends*, 2015. <http://www.faseb.org/Portals/2/PDFs/opa/2015/2.10.15%20NIH%20Funding%20Cuts%202-pager.pdf?pdf=2.10.15%20NIH%20Funding%20Cuts%202-pager>.
7. Johnson, Judith A., "NIH Funding: FY1994-FY2016," Congressional Research Service, R43341, pp. 2-3 (2015). Measured in constant 2012 dollars. Excludes funding from the American Recovery and Reinvestment Act (ARRA).
8. Research Project Grant Award Rate ("the likelihood of an individual application submission getting funded"). Rockey, Sally, "Comparing Success Rates, Award Rates, and Funding Rates," *Rock Talk*, March 5, 2014. RPG success rates ("the number of awards made divided by the sum of the applications reviewed that fiscal year where revisions submitted in the same fiscal year are collapsed and counted as one application") have also decreased drastically, from 32.4% to 18.1%. See <http://nexus.od.nih.gov/all/2014/03/05/comparing-success-award-funding-rates/>.
9. Moses, H., *et al.* The Anatomy of Medical Research: US and International Comparisons. *JAMA* 313, 174-189 (2015). According to Moses *et al.*, while U.S. funding for biomedical and health services research increased at a rate of 6 percent per year from 1994-2004, it decreased to just 0.8 percent annually from 2004-2012.
10. Couzin-Frankel, J. Cancer Immunotherapy. *Science* 342, 1432-1433 (2013).
11. Maude, S. L. *et al.* Chimeric antigen receptor T cells for sustained remissions in leukemia. *N. Engl. J. Med.* 371, 1507-1517 (2014).
12. Kakarla, S. & Gottschalk, S. CART Cells for Solid Tumors: Armed and Ready to Go? *Cancer J.* 20, 151-155 (2014)
13. See <http://www.niaid.nih.gov/news/newsreleases/2015/Pages/PREVAIlphase2.aspx>.
14. Wong, G., *et al.* Intranasal immunization with an adenovirus vaccine protects guinea pigs from Ebola virus transmission by infected animals. *Antiviral Res.* 116, 17-19 (2015); Stanley, D. A. *et al.* Chimpanzee adenovirus vaccine generates acute and durable protective immunity against ebolavirus challenge. *Nat. Med.* 20, 1126-1129 (2014).
15. Hu, W. *et al.* RNA-directed gene editing specifically eradicates latent and prevents new HIV-1 infection. *Proc. Natl. Acad. Sci. U. S. A.* 111, 11461-11466 (2014); Kennedy, E. M. *et al.* Inactivation of the human papillomavirus E6 or E7 gene in cervical carcinoma cells by using a bacterial CRISPR/Cas RNA-guided endonuclease. *J. Virol.* 88, 11965-11972 (2014); Citorik, R. J., *et al.* Sequence-specific antimicrobials using efficiently delivered RNA-guided nucleases. *Nat. Biotechnol.* 32, 1141-1145 (2014).
16. Huang, X. *et al.* Production of gene-corrected adult beta globin protein in human erythrocytes differentiated from patient iPSCs after genome editing of the sickle point mutation. *Stem Cells* (2015). doi:10.1002/stem.1969.
17. See <http://www.fda.gov/NewsEvents/Newsroom/PressAnnouncements/ucm430969.htm>.
18. Langrish, C. L. *et al.* IL-23 drives a pathogenic T cell population that induces autoimmune inflammation. *J. Exp. Med.* 201, 233-240 (2005).
19. Gaffen, S. L., *et al.*, The IL-23-IL-17 immune axis: from mechanisms to therapeutic testing. *Nat. Rev. Immunol.* 14, 585-600 (2014).
20. See <http://www.novartis.com/newsroom/media-releases/en/2014/1864939.shtml>.

2015 Winter Cycle Travel for Techniques Award Recipients

Seven members were selected as recipients of Travel for Techniques Awards for the winter application cycle (deadline: February 15). The program reimburses up to \$1,500 in travel expenses for a member PI or designated lab member to travel to another laboratory to learn a technique or method that might benefit his or her current or future research goals. Proposals are considered on a rolling basis, with application deadlines in February, June, and October.

The 2015 Winter Cycle Travel for Techniques Award recipients are:



Pierette Appasamy, Ph.D. (AAI '13)

Assistant Professor
Chatham University

Appasamy intends to visit Michael Criscitiello's (AAI '09) laboratory at Texas A&M University to learn to perform larval thymectomy in a *Xenopus laevis* model. She plans to apply this technique to her studies

of the ontogeny and extrathymic development of T cells.



Peter Balogh, Ph.D. (AAI '11)

Associate Professor
University of Pécs, Hungary

To become proficient in performing embryo complementation and aggregation assays, Balogh plans to travel to the laboratory of Andras Nagy at the Mount Sinai Hospital in Toronto. He

aims to apply this technique to the study of the regulation of stromal differentiation in murine peripheral lymphoid organs.



Kimberly Gowdy, Ph.D. (AAI '14)

Assistant Professor
East Carolina University

Gowdy will travel to the laboratory of Zea Borok at the University of Southern California to receive training in the isolation and culture of alveolar type II epithelial cells. Gowdy will apply these

skills to the analysis of pulmonary immune responses in bacterial pneumonia.



Roslyn Kemp, Ph.D. (AAI '13)

Senior Lecturer
University of Otago

By traveling to the laboratory of Barbara Fazekas de St. Groth at the Centenary Institute in Camperdown, Australia, Kemp hopes to become adept in time-of-flight cytometry. She will use this expertise to

study complex gastrointestinal T cell populations in the context of inflammatory bowel disease and colorectal cancer.



Kerri Mowen, Ph.D. (AAI '06)

Assistant Professor
The Scripps Research Institute

Mowen designates her postdoctoral fellow David Guimond (AAI '14) to travel to Mark Anderson's (AAI '04) laboratory at the University of California, San Francisco, to gain experience performing thymic kidney

capsule transplantation in mice. This technique will be applied to their own research in investigating the mediation of anti-citrulline immune responses by T cells.



Sharon Singh, Ph.D. (AAI '14)

Assistant Investigator
Feinstein Institute for Medical Research

By traveling to Kathleen Sakamoto's laboratory at Stanford University, Singh hopes to become adept in the transduction of CD34⁺ hematopoietic stem cells using specialized shRNA-expressing lentiviral

constructs. She will apply this technique to the investigation of mechanisms that predispose patients with ribosomal protein deficiencies to the development of cancer.



Wei-ping Zeng, Ph.D. (AAI '10)

Associate Professor
Marshall University

Zeng plans to travel to the laboratory of Baohua Zhou (AAI '07) at Indiana University to gain expertise in using a mechanical ventilator, which can measure the compliance and resistance in the airways.

Proficiency in this technique will aid him in his study of the impact of bacterial infection on sensitization of allergens in mice.

Detailed information regarding eligibility requirements, deadlines, and application instructions for the AAI Travel for Techniques Program can be found on the AAI website at www.aai.org/Careers/TfT.html.



Important Dates for Two AAI Awards Programs

AAI Programs to Benefit Your Lab's Current or Future Research

AAI Careers in Immunology Fellowship

KEY DATES	APPLICATIONS OPEN	APPLICATIONS CLOSE
	JANUARY 15	MARCH 15

These fellowships provide AAI member PIs with one year of salary support for a graduate student or postdoctoral fellow in their labs. Member PIs in good standing with less than \$250,000 (excluding PI's salary) in annual direct costs are eligible to apply.

Selection is based on the potential of the trainee, merit of the project, quality of the training environment, and financial need.

Direct inquiries to fellowships@aai.org.

AAI Travel for Techniques Award Program

AWARDS CYCLE	APPLICATIONS OPEN	APPLICATIONS CLOSE
WINTER	DECEMBER 15	FEBRUARY 15
SPRING	APRIL 15	JUNE 15
FALL	AUGUST 15	OCTOBER 15

The Travel for Techniques Award is given to member PIs, reimbursing up to \$1,500 in expenses for travel to learn a new technique. Member PIs in good standing with less than \$250,000 (excluding PI's salary) in annual direct costs are eligible to apply.

Direct inquiries to tft@aai.org.

These two exciting awards programs were launched by The American Association of Immunologists in 2014, adding significantly to its already robust support for scientists through fellowships, career awards, and travel grants. For more information, visit www.aai.org/awards.

J. Donald Capra, M.D., AAI '70

1937-2015

The following tribute was authored by Judith A. James, M.D., Ph.D., AAI '99, Member and Chair, Arthritis & Clinical Immunology, Oklahoma Medical Research Foundation; Linda F. Thompson, Ph.D., AAI '81, Member, Immunobiology & Cancer Program, Oklahoma Medical Research Foundation; and Ralph C. Budd, M.D., AAI '90, Director, Vermont Center for Immunology & Infectious Diseases, University of Vermont, Department of Medicine. AAI gratefully acknowledges the submission.



J. Donald "Don" Capra, M.D.

Photo provided by the Oklahoma Medical Research Foundation

On February 24, 2015, at the age of 77, J. Donald "Don" Capra, M.D., president emeritus of the Oklahoma Medical Research Foundation, died of a malignant glioblastoma.

For countless immunologists, Don was a pundit, enthusiast, and confidant. He was a member of The American Association of Immunologists (AAI) for more than three decades and served AAI as Secretary-Treasurer for two terms from 1997 to 2003. As an officer of AAI, he was a voting member of the AAI Council. Capra was also a member and chair of the AAI Finance Committee (1997–2003), member (1975–1977) and chair (1990–1994) of the AAI Program Committee, member (1985) and chair (1989) of the AAI Nominating Committee, and a member of the AAI Committee on Public Affairs (1989–1991). In addition, Capra was an Associate Editor (1974–1977) and Section Editor (1982–1985) for *The Journal of Immunology* and an AAI delegate to the International Union of Immunological Societies General Assembly (2001).

In recognition of his contributions to AAI as AAI Program Committee Chair, he received the AAI Distinguished Service Award in 1993.

Capra was a founding member and past president of the Henry Kunkel Society and a Fellow of the American

Association for the Advancement of Science. He was a member of the Norwegian Academy of Science and Letters, the Association of American Physicians, and the American Society for Clinical Investigation, where he also served as a Councilor from 1980 to 1982.

Don was born on July 20, 1937, in Burlington, Vermont, to Italian immigrant parents. He grew up in Barre, Vermont, where he graduated from Spaulding High School in 1955. He attended the University of Vermont in Burlington, earning his B.S. in chemistry and his M.D. summa cum laude in 1963. As a medical student,

Don worked in the laboratory of Dr. Tom Tomasi, another Italian immunologist from Barre. Don often credited Dr. Tomasi with sparking his interest in science and launching his career in the then-nascent field of immunology. It was there that Don discovered secretory IgA, and he maintained an interest in immunoglobulins throughout his distinguished and prolific career.

With more than 375 publications and as principal investigator of 72 NIH grants, Don's studies on the structure and function of immunoglobulins helped lay the foundation for the field of

monoclonal antibody therapy, which has revolutionized care of select malignancies, inflammatory arthritides, and infectious diseases. He described himself as a physician and a scientist, crediting his clinical training with informing his scientific pursuits and his scientific inquisitiveness with influencing his clinical care.

After completing his medical residency at St. Luke's Hospital in New York City, he spent two years at the National Institutes of Health in the laboratory of Dr. Alan Peterkofsky, where his research on tRNA provided a foundation for his later contributions to understanding antibody sequences, rearrangements, and somatic mutations. From 1967-1969, his work



Photo courtesy of Beckman Coulter

with Dr. Henry Kunkel at the Rockefeller Institute for Medical Research (now Rockefeller University) established his life-long interests in the fields of autoimmune disease and lymphocytic malignancies.

In 1969, Don was recruited to be one of the first faculty members at the new Mt. Sinai Medical School. Interpreting findings on immunoglobulin protein sequences in the context of genetic, serologic, and crystallographic observations, he made discoveries and novel hypotheses that unified three fundamental concepts in immunoglobulin biology: the antibody combining site, antibody idiotype, and the hypervariable region. In 1974 Don was recruited to the University of Texas Southwestern Medical Center as a professor of Microbiology. The latter years of his scientific research career were spent defining the subsets of human B cells. As a result of these studies, many human B cell malignancies were reclassified.

In 1997, Don was named president of the Oklahoma Medical Research Foundation (OMRF). His leadership at OMRF was transformative. He threw his support behind young scientists, and his vision drew investigators from across the United States to Oklahoma City. As a result, the size of the foundation grew by fifty percent. He also directed his boundless energy, persuasive enthusiasm, and intense persistence to developing scientific programs and securing funding. During his nine-year tenure, NIH funding at OMRF increased from \$8 million to \$25 million. He successfully led a \$100 million fundraising campaign. At the same time, his dedication to science advocacy impacted research programs far beyond OMRF as he worked to educate policy makers in Oklahoma and in Washington about the importance of basic biomedical research.

After retiring as OMRF president in 2006, Don became widely known as a phenomenal research mentor. He generously shared his broad knowledge and keen intellect to help junior investigators hone and refine their research. Don's advice came in words that were not only frank and honest but also encouraging and heartfelt. He genuinely wanted

people to succeed, and he was vigorously supportive of his trainees: over his career, 26 obtained their doctorate degrees under his tutelage, and nearly 100 more finished their training as postdoctoral fellows in his laboratory. His students and mentees are each a testimony to his professional and personal legacy. Don was also a life mentor, and was himself a connoisseur of life — a vibrant optimist who treasured family, colleagues, and new experiences.

He is survived by his wife of 57 years, Dr. Patricia Hollister Capra. Their profound and unconditional love was an inspiration to many. He is also survived by his sons Jay and Tony as well as three grandchildren. Don was exceptionally devoted to his family, and our sympathy is with them.

Cicero tells us, “The life given us by nature is short, but the memory of a well-spent life is eternal.” So be it with Don Capra.

The above tribute was originally published in The Journal of Immunology, 194: 5575 (2015).

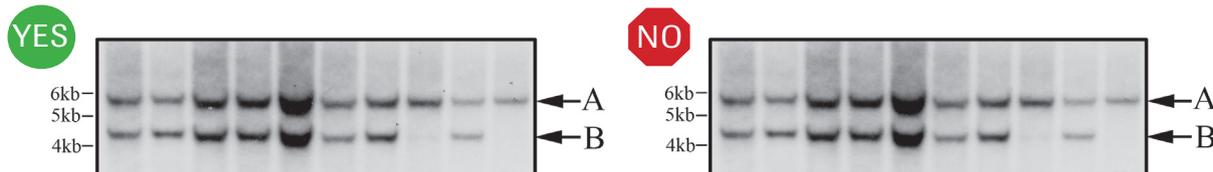
Additional obituaries published by The New York Times, Burlington Free Press, Abilene Reporter-News, The Oklahoman, and other publications are available via the University of Texas memorial site: <http://www.legacy.com/memorial-sites/university-of-texas/profile-search.aspx?&lastname=capra>.

Digital Image Dos and Don'ts

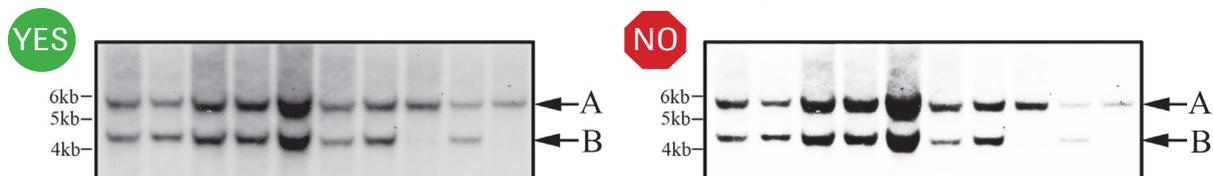


Before preparing manuscript figures, please read the Information for Authors at <http://www.jimmunol.org/site/misc/authorinstructions.xhtml#mspreparation>

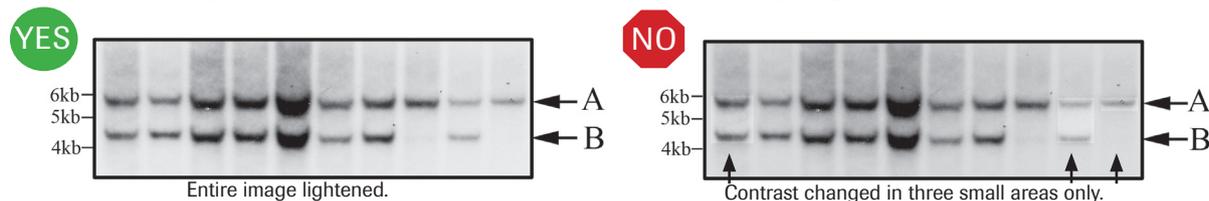
1. Do not erase any part of the image, including the background.



2. Do not use excessive contrast that removes background.

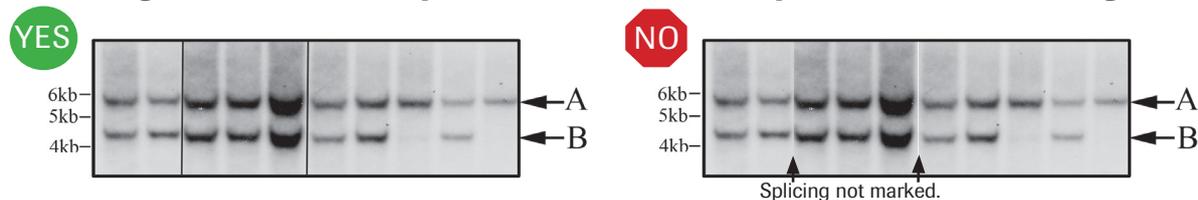


3. Make any adjustments to brightness or contrast equally across the entire image.

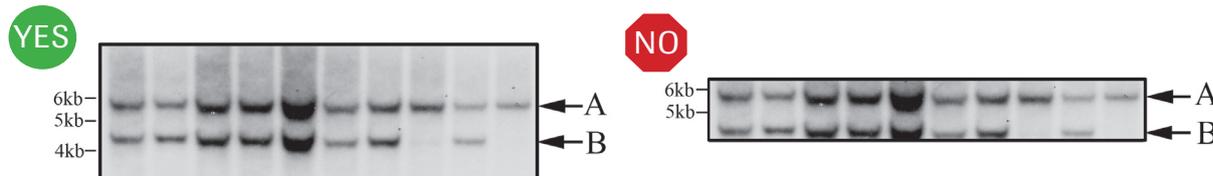


4. Indicate any splicing of data from a single experiment by contrasting (black or white) lines; state the manipulation in the legend.

Images from different experiments should not be spliced to form a new single image.



5. Crop gels and blots conservatively, retaining important bands.



- All images submitted to *The Journal of Immunology* must accurately represent the original data.
- Original data (digital files, autoradiographs, films, etc.) for all experiments should be fully annotated, secured, and retrievable for up to 10 years.
- The original image file (raw data file) should be kept in an unprocessed and non-compressed file format.
- Figures that are compiled into multi-figure panels should be kept individually.



2015 Advanced Course in Immunology

August 2–7, 2015 • Seaport World Trade Center, Boston, Massachusetts

Director: Leslie J. Berg, Ph.D.

University of Massachusetts Medical School

Don't miss the premier course in immunology for research scientists!

This intensive course is directed toward advanced trainees and scientists who wish to expand or update their understanding of the field. Leading experts will present recent advances in the biology of the immune system and address its role in health and disease. This is not an introductory course; attendees will need to have a firm understanding of the principles of immunology.

Faculty

Marc K. Jenkins, *Center for Immunology
University of Minnesota Medical School
Anatomy of the Immune Response*

Jonathan C. Kagan, *Children's Hospital Boston
Harvard Medical School
Innate Immunity: Pattern Recognition and
Anti-microbial Mechanisms*

Bruce Horwitz, *Brigham & Women's
Hospital, Harvard Medical School
Innate Immunity: Gene Regulation*

Albert S. Bendelac, *University of Chicago
Innate Immunity: Cellular Mechanisms*

Wayne M. Yokoyama, *Washington University
School of Medicine
NK Cells — Their Receptors and Function
in Health and Disease*

Michael C. Carroll, *Immune Disease Institute
Harvard Medical School
Molecular and Cellular Mediators
of Inflammation*

Brian T. Edelson, *Washington University School
of Medicine
Dendritic Cells*

Eugene M. Oltz, *Washington University School
of Medicine
The Generation and Modification of Lymphocyte
Antigen Receptor Genes*

Kay L. Medina, *Mayo Clinic
B Cell Development*

Avinash Bhandoola, *NCI, NIH
T Cell Development*

Kenneth L. Rock, *University of Massachusetts
Medical School
MHC-Restricted Antigen Presentation to T Cells*

Leslie J. Berg, *University of Massachusetts
Medical School
Signaling from Antigen Receptors*

W. Nicholas Haining, *Dana-Farber Cancer Institute
Harvard Medical School
T Cell Memory*

Joshy Jacob, *Emory University School of Medicine
B Cell Memory*

Arup K. Chakraborty, *Massachusetts Institute
of Technology
Computational Modeling of Immunological
Processes*

Brian A. Cobb, *Case Western Reserve University
School of Medicine
Glycoimmunology*

Richard S. Blumberg, *Brigham & Women's
Hospital, Harvard Medical School
Mucosal Immunity*

Joel D. Ernst, *New York University School
of Medicine
Immune Response to Pathogens*

Jennifer Anolik, *University of Rochester
Medical Center
B Cell Tolerance and Autoimmunity*

David Hafler, *Yale School of Medicine
T Cell Tolerance and Autoimmunity*

Lisa H. Butterfield, *University of Pittsburgh
Tumor Immunology*

Joanne L. Viney, *Biogen Idec
Immunotherapeutics*

Dennis W. Metzger, *Albany Medical College
Vaccines*

For complete course details and registration, visit: www.aai.org/Education/Courses

For assistance, contact (301) 634-7178 or meetings@aai.org. Overseas applicants are advised to apply early for visas; for details, visit www.aai.org/Education/Courses/Visa.html.

AAI Outreach Program Update

AAI continues to support career development opportunities at regional immunology meetings through the Association's Outreach Program. AAI sponsors awards for young investigators at selected member-led meetings that provide trainees and early career faculty with oral and poster presentation opportunities. AAI was pleased to provide awards sponsorship at two conferences this past winter: the American Association of Veterinary Immunologists Mini-symposium and Student Poster Presentation Competition at the Conference of Research Workers in Animal Diseases (CRWAD) and the Midwinter Conference of Immunologists.

American Association of Veterinary Immunologists (AAVI)

Approximately 100 attendees gathered at the AAVI Mini-symposium and Graduate Student Abstract Competition at the 2014 CRWAD meeting, held December 6–9 in Chicago. Susan Eicher (AAI '14), Crystal Loving (AAI '13), and Renukaradhya Gourapura (AAI '08), along with others, presided over AAVI sessions at the meeting, which included talks and posters focused predominantly on immunity in various livestock species, including sheep, cattle, and poultry. Hyun Lillehoj (AAI '83) delivered the immunology keynote address, entitled,

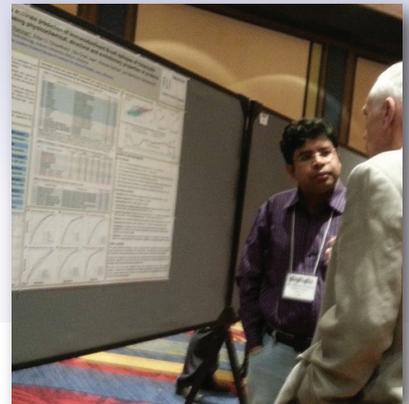


Graduate Student Competition awardees with AAVI organizers—(left to right) Susan Eicher, AAVI president; J. J. Rivera Rivas, Valerie Ryman, Vengai Mavangira, and Graduate Student Competition Chair Renukaradhya Gourapura

“Challenges with poultry immunology and disease research: immune reagent development and maintenance of genetic breeds of poultry.”

For the fourth consecutive year, AAI provided support for the AAVI Student Poster Presentation Competition, sponsoring three oral and three poster

presentation awards. The competition drew 43 participants and featured presentations on a host of topics, including mastitis, innate bovine immune responses to bacterial infection, and vaccine development studies. AAI oral presentation awardees were Vengai Mavangira (1st place, Michigan State University), J. J. Rivera Rivas (2nd place, University of Wisconsin), and Drew Magstadt (3rd place, Iowa State University). AAI Poster Presentation Competition Award recipients were Valerie Ryman (1st place, Michigan State University), K. Shamsur Rahman (2nd place, Auburn University), and Haiyan Sun (3rd place, University of Nebraska).



K. Shamsur Rahman, 2nd place Poster Presentation awardee, presenting his work to a CRWAD conference attendee

Midwinter Conference of Immunologists (MCI)

Nearly 260 attendees gathered at the lovely Asilomar Conference Grounds in Pacific Grove, California, for the 2015 MCI, held January 24–27. MCI Executive Director Christel Uittenbogaart (AAI '84) presided over the meeting, and Ananda Goldrath (AAI '05) and Christopher Hunter (AAI '96) shared co-chairmanship responsibilities. The conference featured five scientific sessions on a wide range of topics, from immune defense against tissue infections to crosstalk between innate and adaptive immunity. AAI sponsored the Dan H. Campbell Memorial Lecture, delivered by AAI Councilor Dan Littman (AAI '87). Littman spoke on the influence of the body's resident bacterial populations on immunity in his address, entitled, “Shaping

of the immune system by the commensal microbiota.”

As it has for the past three years, AAI supported Ray Owen Young Investigator Awards for superior poster and oral presenters at the meeting.

Three graduate students—Nancy Fares-Frederickson (University of California, San Diego), Neha Deshpande (University of Arizona), and Kathleen



Dan Littman delivering the AAI-sponsored Dan H. Campbell Memorial Lecture

Pestal (University of Washington)—and three postdocs—Elizabeth Gray (University of Washington), Jen-Feng Lai (Benaroya Research Institute), and Hyungwook Lim (Gladstone Institute)—received poster awards. The Graduate Student Oral Presentation Award was bestowed upon Jeffrey Duggan (Benaroya Research Institute), and the Postdoctoral Fellow Award was given to Tiffany Scharschmidt (University of California, San Francisco).



Poster and oral presentation awardees pictured at the 2015 MCI

AAI Support for Recent International Meetings in the Field

AAI was pleased to support three international meetings recently in partnership with other international federations or national societies for immunology.

Federation of African Immunological Societies (FAIS) Conference

The ninth FAIS Conference was held November 30–December 4, 2014, at the Safari Park in Nairobi, Kenya, presided over by FAIS President Thomas Kariuki. The meeting focused on human and clinical immunology to demonstrate how immunology is helping to resolve long-standing health challenges posed by infectious diseases, as well as non-communicable diseases. AAI travel awards supported the conference attendance of 10 African scientists from countries including Burkina Faso, Egypt, Kenya, Mali, South Africa, and Uganda.

British Society for Immunology (BSI) Annual Congress

More than 1,000 immunologists from all over the world gathered at the BSI Annual Congress, held December 1–4, 2014, at the Brighton Centre and Grand Hotel in the United Kingdom. The conference was chaired by BSI President Peter Openshaw (AAI '90), Imperial College School of Medicine. The program covered the latest developments in immunology, from microbiota and the immune system to vaccine design and autoinflammation. AAI provided support for the travel expenses of speaker Donna Farber (AAI '95),

Columbia University, who presented her research in a talk titled “Development and maintenance of human tissue resident memory T cells.” The conference also featured a keynote address by Richard Flavell (AAI '90), Yale School of Medicine, and “Bright Sparks in Immunology,” a session that showcased the research of early career immunologists.

Japanese Society for Immunology (JSI) Annual Meeting

The 43rd Annual Meeting of the JSI was held December 10–12, 2014, at the Kyoto National Conference Center. Conference President Nagahiro Minato (AAI '01), Kyoto University, welcomed participants gathered to attend symposia covering cutting-edge topics including the functions of innate sensors, the role of the microenvironment in regulation of stem and immune cells, and mechanisms of antitumor immunity. AAI provided travel support for two AAI member speakers: Max Cooper (AAI '66), Emory University, who spoke on of the evolution of lymphocyte diversity, and Anne Davidson (AAI '89), Feinstein Institute for Medical Research, who presented her work on the effects of TLR7 and BAFF on B cell selection.

New AAI Career Advisory Board Launched at IMMUNOLOGY 2015™

Among the many career development resources and opportunities at the AAI annual meeting, attendees at IMMUNOLOGY 2015™ were introduced to the new AAI Career Advisory Board (CAB) being launched by the AAI Committee on the Status of Women (CSOW). The CAB is a referral service for connecting young PIs seeking guidance on specific career issues with more senior PIs outside their own institutions offering experience and insights on particular topics.



Robin Lorenz speaking with a participant in the Research from the M.D., Ph.D. Perspective discussion

This new AAI service offers one-on-one career advice for new PIs struggling with starting their first labs.

“New PIs opening their first labs are facing many new issues and are often reluctant to seek guidance from their own colleagues,” said Virginia S. Shapiro (AAI ‘04), CSOW chair, in her announcement to attendees at a Careers in Science Roundtable in New Orleans on May 9. “We want to offer young faculty the opportunity to ask questions about lab development and management issues from senior colleagues outside their home institution.”

Shapiro noted that the service is an extension of the two Careers in Science Roundtable discussions held each year at the annual meeting, the one co-sponsored by the Committee on the Status of Women and the Education Committee and another hosted by the Minority Affairs Committee. Topics for exploration through the CAB mirror the topics at these very popular sessions, including



CSOW Chair Virginia Shapiro zealously recruiting CAB advisors and applicants during IMMUNOLOGY 2015™

balancing family and work, timing one’s first grant submission, recruiting good graduate students, handling personnel problems in the lab, managing my lab, finding a mentor, building networks, preparing for leadership, balancing service obligations, teaching, and serving on NIH study sections (the how to and whether).

Beyond questions on career advice, members are referred to their home institutions’ mentoring programs and to other AAI programs, such as GRIP, for assistance with grant writing or review.

Although this service is launched by the CSOW, the program is open to all early faculty members of AAI (both men and women). Men as well as women have volunteered to serve as advisors who agree to be “on call.” To apply, visit the CSOW section of AAI.org. (www.aai.org/About/Leadership/Committees/CSOW/Career-Advisory-Board).

Coming Next Issue...

Photos and Highlights from IMMUNOLOGY 2015™

AAI Annual Meeting
May 8–12
New Orleans, LA



You have the power.

Your membership in the American Association of Immunologists helps advance the field—and your career.

Being a part of AAI enables you to take an active role in helping to shape the future of immunology and attain your professional goals. You'll stand with members representing immunological research concerns on Capitol Hill. Plus, you gain access to:

- The best and brightest minds today.
- The world's largest annual all-immunology meeting.
- *The Journal of Immunology*, the pre-eminent peer-reviewed journal in the field.
- Many occasions and opportunities to present your research.
- Awards/fellowships/grants to support talented scientists in every career stage.

To renew your AAI membership and its contributions to your professional life, call 301.634.7195 or visit www.aai.org today.



In preparation for IMMUNOLOGY 2015™ in New Orleans, Louisiana, the history of AAI members and institutions in the state was researched for a special exhibit at the meeting. In the process, the story of Charles C. Bass's colorful career, recounted below, emerged as among those worthy of a wide audience. More information on the biomedical history of Louisiana will appear in the next AAI Newsletter.

Country Doctor, Pioneering Parasitologist, and the Father of Preventative Dentistry

Charles C. Bass, M.D. (1875–1975)

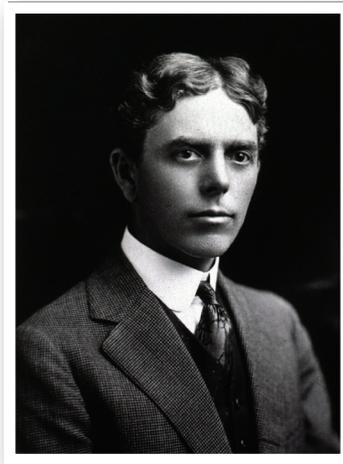
by John Emrich

Charles Cassidy Bass (AAI '16), the first member of the American Association of Immunologists (AAI) in Louisiana, began his medical career quietly as a country doctor but rose to prominence and acclaim, not only in his studies of diseases endemic to the American South but also in his pioneering post-retirement research establishing the field of preventative dentistry.

In addition to his research, Bass's renown stems from his eventful 18 years as dean of Tulane University School of Medicine. During his tenure at Tulane, Bass modernized the medical school, doing so despite resistance from the then extremely powerful populist Louisiana Governor Huey Long.

The Country Doctor

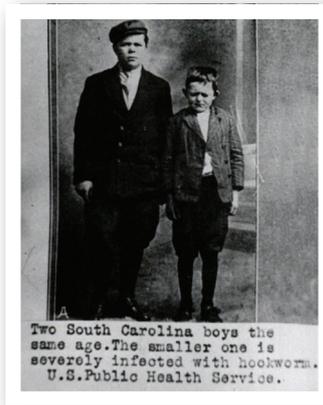
Bass was born January 29, 1875, on the family farm in Carley, Marion County, Mississippi.¹ After high school, Bass spent two years working on the farm before entering (1896) and graduating (1899) from Tulane University School of Medicine. Bass then returned to Marion County as a family physician. As the youngest of three physicians in Columbia, Mississippi, Bass had an unremarkable start to his medical



Charles C. Bass
*Images from the History of Medicine,
National Library of Medicine*

career. During his first four years of practice, he was a typical country doctor, operating a small practice out of his home and regularly making house calls on horseback.² His career, however, changed dramatically when he attended a 1903 American Medical Association meeting in New Orleans.

At the meeting, Bass heard a number of lectures on hookworms. The majority of the speakers agreed on two things: a parasite was responsible for hookworm disease (also known as uncinariasis), and the disease was new to the United States. One talk in particular caught Bass's attention when the speaker argued that hookworm infections rarely, if ever, occurred in this country. Bass knew empirically that this statement was wrong. He had seen many of his own patients, especially children, suffering from the exact symptoms described by the speaker.³ Shortly after the meeting, he purchased a microscope and, over the next seven to eight months, began testing the children of Marion County for hookworm.⁴ By the end of his study, he had identified and treated 75–80 cases of hookworm.⁵ Bass became so engrossed in laboratory research that in 1904, he enrolled in a one-year-long course in clinical laboratory diagnosis at



*Images from the History of Medicine,
National Library of Medicine*

1. Rudolph Matas, *Dr. Charles C. Bass, Dean: An Appreciation* (New Orleans, LA: Tulane University School of Medicine, 1940), 2. Originally published in *New Orleans Medical and Surgical Journal* 92, no. 10 (1940): 545–50.
2. Arden G. Christen, "Charles C. Bass, M.D.—1875–1975: That Cantankerous Genius of Preventative Dentistry," *Bulletin of the History of Dentistry* 30, no. 1 (1982): 9.
3. Most people infected with hookworms have no symptoms. Minor symptoms include gastrointestinal problems. In serious cases, there is blood loss, leading to anemia and protein deficiency. In children with continuous infection, the loss of iron and protein results in growth and developmental problems.
4. Matas, *Dr. Charles C. Bass*, 5–6.
5. Matas, *Dr. Charles C. Bass*, 6.

the Johns Hopkins University. At Johns Hopkins, he studied microscopy under Charles E. Simon and the proper techniques for blood counts under William S. Thayer.⁶

Following his training at Johns Hopkins, Bass chose not to return to his family practice in Columbia. Instead, he relocated with his family to New Orleans, where he started a new practice. He saw patients in a conventional medical office building but constructed his own personal laboratory at home.



Tulane University School of Medicine, Canal Street, c. 1900
Library of Congress, Prints and Photographs Division

Research Pioneer

Bass's home research did not go unnoticed by his alma mater, Tulane. In 1905, he was appointed to a non-salaried position as an instructor in the Department of Medicine, and in 1907, he was hired as a salaried instructor of clinical microscopy and medicine in the Tulane laboratories of clinical medicine.

Interested in opsonic index and autogenous vaccines, Bass traveled to England in 1908 to train with Sir Almroth Wright (AAI '14), an early authority

on inoculation techniques and vaccine therapy, at St. Mary's Hospital.⁷ The work he undertook in England helped to form his later research, and the relationships he built there with the future founders of AAI led to his nomination and election to the association in 1916.

Back in the States, Bass was soon promoted to director of the Tulane laboratories and, in 1912, to professor of experimental medicine. While in the laboratories of clinical medicine, Bass immersed himself in uncinariasis and defined the etiology, pathology, and more effective treatment for the disease.⁸

His pioneering work in this area was based on a small study of 90 students at Tulane. He discovered that, whereas 20 percent of all participants were suffering from uncinariasis, 42 percent of the rural students carried the parasite.⁹ In 1910, he published findings from a large study conducted with George Dock, in which they were the first to assert that the high rate of infection in the rural South was attributable to sandy soil, the poor access of privies, and the "habit among children... of going barefoot."¹⁰

While completing his research on hookworm infections, Bass began studying another parasitic disease afflicting the South: malaria.¹¹ In 1911, he successfully cultivated the three most common malarial plasmodia (*vivax*, *malariae*, and *falciparum*) in vitro using human blood and published a seminal paper, entitled "A New Conception of Immunity: Its Application to the Cultivation of Protozoa and Bacteria from the Blood and to Therapeutic Measures."¹² This breakthrough in hematic



Patient with a hookworm infection
Centers for Disease Control and Prevention

6. Christen, "Charles C. Bass, M.D.," 9; Matas, *Dr. Charles C. Bass*, 6. Charles Edmund Simon (1866–1927) opened the first diagnostic laboratory in Baltimore (1897) and at Johns Hopkins, started the first known teaching program on filterable viruses (1922) and compiled a large collection of virus specimens. William Sydney Thayer (1864–1932) was a long-time faculty member of the Johns Hopkins University School of Medicine (from 1896 to 1921), which included terms as head of the hospital medical clinic and director of the Department of Medicine. At the medical school, Thayer was responsible for organizing the first course in clinical microscopy.

7. Matas, *Dr. Charles C. Bass*, 10. Wright was an honorary member of AAI (1914–1920).

8. Matas, *Dr. Charles C. Bass*, 7. See also George Dock and Charles C. Bass, *Hookworm Disease: Etiology, Pathology, Diagnosis, Prognosis, Prophylaxis, and Treatment* (St. Louis, MO: C. V. Mosby Company, 1910).

9. Thomas Waisley, "Public Health Programs in Early Twentieth-Century Louisiana," *Louisiana History: The Journal of the Louisiana Historical Association* 41, no. 1 (2000): 42.

10. Dock and Bass, *Hookworm Disease*, 44. In his field research, Bass made the discovery that hookworm larvae were unable to thrive in the high clay soils of southern Louisiana. Bass and others were able to establish the pathology of uncinariasis in children, which included stunted growth and mental developmental issues.

11. The parasitic protozoans were identified in 1880; the means of transmission by *Anopheles* mosquito was described in 1899.

12. C. C. Bass, "A New Conception of Immunity: Its Application to the Cultivation of Protozoa and Bacteria from the Blood and to Therapeutic Measures," *Journal of the American Medical Association* 57, no. 19 (1911): 1534–35; C. C. Bass and F. M. Johns, "The Cultivation of Malarial Plasmodia (*Plasmodium vivax* and *Plasmodium falciparum*) In Vitro," *Journal of Experimental Medicine* 16, no. 4 (1912): 567–79.

parasitology, which had eluded such titans as Theobald Smith (AAI '20), opened countless new avenues of malarial research.¹³ It led to Bass's own three-month collaboration in 1912 with Colonel William C. Gorgas at Ancon Hospital in the Panama Canal Zone, where the high incidence of the disease threatened the Canal project.¹⁴

While a principal investigator at Tulane, Bass pursued increasingly expansive research interests, including the diseases caused by vitamin deficiency (beriberi and pellagra), diphtheria, dysentery, typhoid fever,¹⁵ and periodontal disease.

In mid-1914, Bass somehow became aware of a paper delivered at a Pennsylvania State Dental Society meeting, tentatively concluding that amoebas found in the gums of patients with periodontitis may be responsible for the disease. Bass seized on these early findings and collaborated with a colleague at Tulane, Foster M. Johns, on a series of periodontitis studies, producing two journal articles and a book within one and one-half years. Bass and Johns tentatively concluded that *Endameba buccalis* was responsible for periodontitis. In their findings, they issued what proved to be an apt caveat: they were unable to re-isolate *E. buccalis* to satisfy Koch's postulates. Despite this limitation, they proposed a treatment using a hypodermic injection of emetin to kill the amoeba and cure periodontitis.¹⁶ The dental community initially had a positive reaction to Bass's research and treatments, but the positive reception did not last. The science that supported their conclusions was soon refuted in dental literature



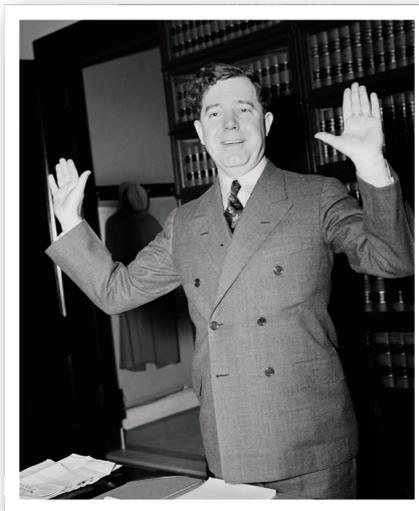
Anopheles mosquito feeding
Centers for Disease Control and
Prevention

and at meetings, and within one year, the central role of amoebas in periodontitis and the emetin treatment were completely rejected by the scientific community. Bass must have been chastened by this setback, for he put aside dental research for nearly one quarter century. He would, however, return to it energetically after his retirement from Tulane.¹⁷

Cunning Administrator

In 1922, Bass was elected dean of the Tulane University School of Medicine, which remained the only accredited medical school in the state. Although he maintained his professorship, his energy was focused almost exclusively on the administration of the school. During his 18 years as dean, Bass oversaw the expansion and relocation of the medical school from its cramped Canal Street facility to the Hutchinson Memorial Building that houses the medical school and research facilities still today. One initiative, in particular, drew strong resistance from populist Governor Huey Long. At issue was a new Tulane clinical facility that almost doubled the school's presence and influence at Charity Hospital, a nearly 200-year-old public institution in New Orleans. Long, who was intent on founding a public medical school in Louisiana, opposed the

elite private medical school's expanded clinical facility and authority at the state's hospital. With appointments to the board of directors for Charity Hospital being within the governor's purview, the board had become highly politicized under Long. In 1930 and 1931, the Long-appointed superintendent rescinded and denied Bass's appointments to the hospital on political grounds. As the dispute grew public, Long used the conflict to advance the construction of the Louisiana State University School of Medicine in New Orleans. Bass, however, did not back down on his appointments. By 1932,



Huey P. Long, c. 1935
Library of Congress, Prints and Photographs Division,
Harris & Ewing

13. Matas, *Dr. Charles C. Bass*, 8.

14. Bass was the head of the Tulane University School of Tropical Medicine to the Tropics for the Study of Malaria Expedition, 1912–1922. William C. Gorgas (1854–1920) was the chief sanitary officer in the Panama Canal Zone from 1904 to 1914.

15. Bass discovered a new method for diagnosing typhoid fever and presented his findings at the American Congress of Internal Medicine in Chicago in 1920. Whereas the previous method for testing for typhoid fever took 12–24 hours, Bass's new method required only a blood test at the patient's bedside and took just 10 minutes. C. C. Bass, "American Heart Likely to Benefit by Prohibition," *The Atlanta Constitution*, February 25, 1920.

16. Emetin is derived from ipecacuanha and had been used since the early nineteenth century to treat amebic dysentery. Edward B. Vedder, "Origin and Present Status of the Emetin Treatment of Amebic Dysentery," *Journal of the American Medical Association* 62, no. 7 (1914): 501–6.

17. Christen, "Charles C. Bass, M.D.," 10–11.

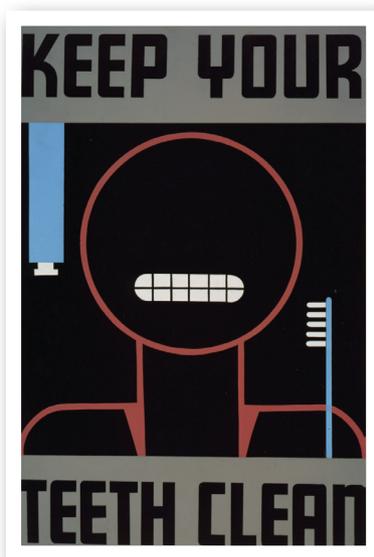
his appointees had received their privileges at Charity Hospital.¹⁸

Father of Preventative Dentistry

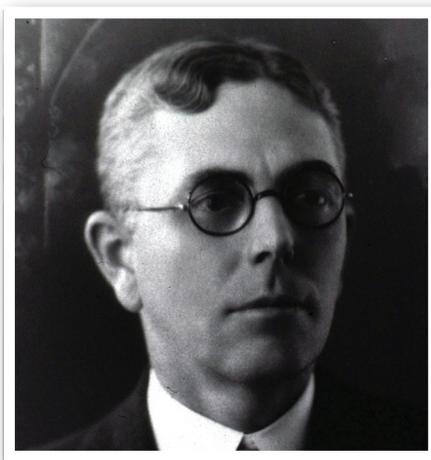
In 1940, as Bass turned 65, he reached the mandatory retirement age for Tulane. Although technically retired, he continued his research for the next 35 years. With the zeal of a crusader, he returned to the field of dental research. These were productive years for Bass, during which his research and successful clinical methodology ultimately earned him the moniker, “father of preventative dentistry.”¹⁹

In his seminal article, “The Cause and Prevention of the Loss of Teeth,” published in 1940, Bass asserted an “urgent need for an awakening of the situation” that tooth decay and loss should not be “considered to be necessary and unavoidable burdens of life.”²⁰ Rather, his research, using standard microbiological techniques, demonstrated that cavities and gum disease are caused by bacterial infections. Furthermore, he argued, these infections are preventable through proper dental hygiene.

Between the ages of 71 and 94, Bass published 32 journal articles, 26 of which were about dental hygiene. Many of these publications further elaborated on his “Right Kind” method for proper brushing and flossing techniques, including proper oral-care techniques for children and the elderly.²¹ He eventually designed a toothbrush and floss to work with his method that were so precise that their



Library of Congress, Prints and Photographs Division



Charles C. Bass

Images from the History of Medicine, National Library of Medicine

requirements included the exact thickness and shape of the bristle tips and number of turns per inch of a particular unwaxed nylon yarn.²² Bass’s articles also noted deficiencies in preventative dentistry in the military and in dental education. These articles fueled antipathies with the Public Health Service, American Dental Association, and the rest of organized dentistry and seldom appeared in dental journals.²³

Over a long scientific career, Charles C. Bass advanced public health. In his first chapter of scientific life, he pioneered hookworm disease etiology, pathology, and treatment. He also solved a confounding technical problem in malaria research by discovering how to cultivate the parasitic protozoa in vitro. In the second chapter of his career, as an administrator, he finessed the powerful Louisiana governor to expand the influence of the state’s only accredited medical school at the largest public hospital in New Orleans. In his final chapter, at a time when many of his colleagues had completely retired from the lab, he spearheaded public and professional awareness of the benefits of preventative dentistry, this time successfully defending his theory that “a clean tooth does not decay.”²⁴ In doing so, Bass secured rights to the epitaph he once suggested for himself: “He designed and promoted an effective method of personal hygiene.”²⁵ ■

John S. Emrich, Ph.D., AAI Historian

Katlyn Burns, AAI History Intern, contributed to this article.

18. John Salvaggio, *New Orleans' Charity Hospital: A Story of Physicians, Politics, and Poverty* (Baton Rouge, LA: Louisiana State University Press, 1992), 100–119; John Duffy, *The Tulane University Medical Center: One Hundred and Fifty Years of Medical Education* (Baton Rouge, LA: Louisiana State University Press, 1984), 146–52.

19. Christen, “Charles C. Bass, M.D.,” 16.

20. C. C. Bass, “The Cause and Prevention of the Loss of Teeth,” *New Orleans Medical and Surgical Journal* 93, no. 2 (1940): 229, 227.

21. The “Right Kind” method was first published in 1948.

22. Christen, “Charles C. Bass, M.D.,” 13.

23. *Ibid.*, 16.

24. Bass, “The Cause and Prevention of the Loss of Teeth,” 229.

25. Christen, “Charles C. Bass, M.D.,” 16.

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1913–2014



THE SCIENTISTS BEHIND THE SCIENCE

AAI Oral History Project Available Online

To provide contemporary investigators and the public a rare view into the lives and times of influential immunologists, AAI arranged for the award-winning Oral Historian Brien Williams, Ph.D., to interview past AAI presidents, beginning in the spring of 2012. Interviewees were asked about their family backgrounds, early interest in science, reasons for studying immunology, career and research highlights, challenges faced, balancing professional and private life, hobbies outside of the laboratory, major changes in immunology over the course of their careers, and the future of immunology and science in the United States. The sessions, typically one and one-half to two hours in length, were professionally recorded and edited in high-definition video.

“Scientific contributions live on as researchers continue to build upon the work of the past, yet present-day investigators often know little about the scientists responsible for them,” said AAI Historian John Emrich, Ph.D., who first conceived of the Oral History Project in 2011. “The ‘Pillars of Immunology’ series in *The Journal of Immunology* makes the connections between past and present science more explicit than they otherwise would be, but investigators rarely have the opportunity to hear about their predecessors’ motivations, their hardships suffered and overcome, their lives outside of the laboratory, or even their candid thoughts on the state of the field.”

To date, 25 past presidents have been interviewed. Their presidential terms span five decades, from that of Herman Eisen (AAI '51, president 1968–69, now deceased) to Leslie Berg (AAI '94, president 2011–12). Included in this group were two past presidents in their 90s, Eisen and David Talmage (AAI '54, president 1978–79, now deceased); six in their 80s; and four in their 70s.

The memories and reflections contained in these interviews constitute an important facet of the history of immunology that would likely be lost to future generations if not preserved in the AAI Oral History Project. As AAI continues to conduct interviews with additional presidents and other influential immunologists, members and the general public are invited to view the oral histories already recorded. Video clips and the full-length interviews, which have been optimized for playback on TVs, computers, and mobile devices, are available at www.aai.org/ohp.



Oral History Interviews Currently Available:

- Herman N. Eisen (1968–69)
- K. Frank Austen (1977–78)
- David W. Talmage (1978–79)
- Jonathan W. Uhr (1983–84)
- William E. Paul (1986–87)
- Max D. Cooper (1988–89)
- Henry Metzger (1991–92)
- Frank W. Fitch (1992–93)
- Ellen S. Vitetta (1993–94)
- Irving L. Weissman (1994–95)
- Richard W. Dutton (1995–96)
- Katherine L. Knight (1996–97)
- Roger M. Perlmutter (1999–2000)
- Philippa Marrack (2000–01)
- James P. Allison (2001–02)
- Paul W. Kincade (2002–03)
- Laurie H. Glimcher (2003–04)
- Susan L. Swain (2004–05)
- Paul M. Allen (2005–06)
- Lewis L. Lanier (2006–07)
- Olivera J. Finn (2007–08)
- Arthur Weiss (2008–09)
- Betty A. Diamond (2009–10)
- Jeffrey A. Frelinger (2010–11)
- Leslie J. Berg (2011–12)

GRANT AND AWARD DEADLINES

June 24

ASTMH Hygiene Centennial Travel Award in Basic Science Tropical Disease Research

- **Prize/Award:** Award of \$25,000 in support of field experience and lab studies of parasitic, bacterial, or viral infectious diseases in endemic developing countries; proposed project must be carried out in the year 2016; studies may focus on any tropical infectious disease in one or more of the following disciplines or related areas: immunology, genetics, molecular biology, biochemistry, cell biology, entomology
- **Eligibility:** Full-time postdoctoral fellows (Ph.D., M.D., or equivalent degree holders) with positions at U.S. or Canadian institutions and interest in career opportunities focused on benefiting underserved populations in locations in the world where the burden of disease is high
- **Details:** http://www.astmh.org/ASTMH_Sponsored_Fellowships/6491.htm
- **Contact:** Judy DeAcetis, Administrator – Phone: +1 (847) 480-9592; Fax: +1 (847) 480-9282; j.deacetis@astmh.org

July 2

Lupus Foundation Evelyn V. Hess Award

- **Prize/Award:** Prize in the amount of \$5,000 in recognition of a clinical or basic researcher whose body of work has advanced understanding of the pathophysiology, etiology, epidemiology, diagnosis, or treatment of lupus
- **Eligibility:** M.D. or Ph.D. holders with an academic appointment at the level of associate professor or above who have a career of achievement in basic or clinical lupus research in lupus
- **Details:** www.lupus.org/research/hess-awards
- **Contact:** nominations@lupus.org

July 21

Ferring Innovation Grants

- **Prize/Award:** Grants of \$10,000 for exploratory/feasibility studies, \$50,000 for discovery/validation studies, and pre- and post-doctoral fellowships providing \$50,000 in support of research in one of FRI's areas of interest: gastroenterology; reproductive health; urology; hepatology
- **Eligibility:** Scientists and trainees proposing studies that advance basic and preclinical research into novel drug targets addressable with peptides and/or proteins
- **Details:** <http://ferring-research.com/ferring-grants/overview/>
- **Contact:** (858) 657-1400; info@ferring-research.com

July 21

American Heart Association National Innovative Research Grant

- **Prize/Award:** Two-year awards of \$75,000 in annual funding in support of highly innovative, high-risk/high-reward research that could ultimately lead to critical discoveries or major advancements that will accelerate the field of cardiovascular and stroke research; awards are reserved for research undertaken at non-profit institutions
- **Eligibility:** Applicants who hold an M.D., Ph.D., D.O., or equivalent doctoral degree, have a faculty or faculty equivalent appointment (award not intended for postdoctoral fellows or others in research training positions), and are U.S. citizens, current or pending permanent residents, or holders of one of the eligible visa or immigration status designations specified in the program requirements linked below
- **Details:** http://my.americanheart.org/professional/Research/FundingOpportunities/ForScientists/National-Innovative-Research-Grant_UCM_321936_Article.jsp
- **Contact:** (214) 360-6107; apply@heart.org

July 21

American Heart Association National Established Investigator Award

- **Prize/Award:** Five-year awards of \$80,000 in annual funding in support of research broadly related to cardiovascular function and disease and stroke, or to related clinical, basic science, bioengineering or biotechnology, and public health problems, including multidisciplinary efforts; proposals are encouraged from all basic, behavioral, epidemiological, and community and clinical investigations that bear on cardiovascular and stroke problems
- **Eligibility:** Mid-career investigators of unusual promise who are on a rapid career growth trajectory and have an established record of accomplishments and commitment to cardiovascular or cerebrovascular science as demonstrated by prior publication history and scientific achievements; applicants must: hold an M.D., Ph.D., D.O., or equivalent doctoral degree; be a faculty/staff member; have current national-level funding as a principal investigator (or co-PI) on an R01 grant or its equivalent; and be U.S. citizens, current or pending permanent residents, or holders of one of the eligible visa or immigration status designations specified in the program requirements linked below
- **Details:** http://my.americanheart.org/professional/Research/FundingOpportunities/ForScientists/National-Established-Investigator-Award_UCM_321935_Article.jsp
- **Contact:** (214) 360-6107; apply@heart.org

July 28

HHMI Faculty Scholars Program

- **Prize/Award:** Up to 70 five-year awards of between \$100,000 and \$400,000 per year, affording faculty investigators time and freedom to pursue difficult, long-range questions through approaches emphasizing creativity, collaboration, and interdisciplinary thinking
- **Eligibility:** Early-career research faculty with impressive accomplishments and vision demonstrating strong potential to make groundbreaking scientific contributions
- **Details:** www.hhmi.org/programs/biomedical-research/faculty-scholars
- **Contact:** facultyscholars@hhmi.org

July 31

ARC Foundation Léopold Griffuel Awards

- **Prize/Award:** Two annual prizes of €150,000 each in recognition of investigators whose work has led to a major breakthrough in fundamental or applied research in oncology
- **Eligibility:** Active researchers; individual nominees must be under age 65 in the nomination year
- **Details:** www.recherche-cancer.net/espace-recherche/english.html
- **Contact:** [PrixARCLEopoldGriffuel@fondation-arc.org](mailto: PrixARCLEopoldGriffuel@fondation-arc.org)

August 3

Rheumatology Research Foundation Awards & Grants Program

- **Prize/Award:** Multiple awards and grants in support of rheumatology trainees and professionals at various career stages (medical/graduate studies; residency; postdoctoral/specialty training; early career; mid-career, established career); details at <https://rheumresearch.uberflip.com/i/504672-call-for-applications-2015>
- **Eligibility:** Generally, members of the American College of Rheumatology or Association of Rheumatology Health Professionals; eligibility details for all awards at <https://rheumresearch.uberflip.com/i/504672-call-for-applications-2015>
- **Details:** <http://rheumresearch.org/Awards>
- **Contact:** (404) 633-3777; foundation@rheumatology.org

Meetings and Events Calendar

2015

June 26–June 30, 2015

CYTO 2015: 30th Congress of the International Society for Advancement of Cytometry

Glasgow, Scotland

<http://cytoconference.org/2015/Home.aspx>

June 29–July 1, 2015

Exploring Human Host-Microbiome Interactions in Health and Disease

Wellcome Trust Genome Campus

Hinxton, Cambridge, UK

http://registration.hinxton.wellcome.ac.uk/display_info.asp?id=480

June 30–July 3, 2015

FIMSA 2015: 6th Congress of the Federation of Immunological Societies of Asia Oceania

Sands Expo and Convention Centre, Singapore, Singapore

<http://fimsa2015.org>

July 1–4, 2015

8th Frontiers in Immunology Research 2015 International Conference

Grand Real Santa Eulalia Hotel & Spa,

Albufeira, Algarve, Portugal

www.firnweb.com/wp-content/uploads/2014/06/FIRNCall2015.pdf

July 3–5, 2015

LACA 2015, The 5th Latin American Congress on Autoimmunity

Salvador, Bahia, Brazil

<http://laca.kenes.com>

July 11–15, 2015

The American Society for Virology 34th Annual Scientific Meeting

The University of Western Ontario, London, Ontario, Canada

www.asv.org

July 14–18, 2015

17th International Congress of Mucosal Immunology (ICMI 2015)

Maritim Hotel

Berlin, Germany

www.socmucimm.org/meetings-events/icm15

July 14–19, 2015

AAI Introductory Course in Immunology

Long Beach Convention Center

Long Beach, CA

www.aai.org/Education/Courses/Intro/index.htm

August 2–7, 2015

AAI Advanced Course in Immunology

Seaport World Trade Center

Boston, MA

www.aai.org/Education/Courses/Advanced/index.html

August 8–12, 2015

WCI 2015: 12th World Congress on Inflammation

Boston, MA

<http://inflammation2015.org/2015/Home.aspx>

September 6–9, 2015

ECI 2015: 4th European Congress of Immunology

Vienna, Austria

www.eci-vienna2015.org

September 27–29, 2015

48th Annual Meeting of the Society for Leukocyte Biology, "Immunity in Health and Disease"

Raleigh, NC

<http://leukocytebiology.org/Meetings/coming-SLB-Meetings.aspx>

September 28–October 3, 2015

Quantitative Biology of Signaling

Corsica, France

<https://labexinform.wordpress.com/conf-2015/>

September 30–October 3, 2015

TOLL 2015: Targeting Innate Immunity Congress

Marbella, Spain

<http://www.toll2015.org/>

October 6–9, 2015

Influenza Vaccines for the World IVW 2015

Albufeira, Portugal

<http://meetingsmanagement.cmail2.com/t/d-l-vpity-vckugr-t>

October 8–9, 2015

Frontiers in Basic Immunology (hosted by NCI's Center for Cancer Research)

Bethesda, MD

<https://ncifrederick.cancer.gov/events/Immunology2015/Default.asp>

October 9–13, 2015

ASBMR 37th Annual Meeting

Seattle, WA

www.asbmr.org

October 11–14, 2015

Cytokines2015

Bamberg, Germany

www.cytokines2015.com

October 13–16, 2015

11th Congress of the Latin American Association of Immunology (ALAI)

Plaza Mayor, Medellín, Colombia

www.inmunocolombia2015.com

October 25–28, 2015

The Annual New York Immunology Conference

Sagamore Resort, Bolton Landing, NY

www.amc.edu/NYIC/index.cfm

November 2–7, 2015

Obesity Week 2015: Where Science and Treatment Meet

Los Angeles, CA

<http://obesityweek.com/>

Track updated meeting listings anytime via the online Meetings and Events Calendar – visit <http://www.aai.org/Careers/Calendar/index.html>.

Mark Your Calendar for These Important Dates!

2015

November 5–8, 2015

14th International Workshop on Langerhans Cells
Kyoto, Japan
www.lc2015.jp

November 5–6, 2015

IPIC 2015: International Primary Immunodeficiencies Congress
Budapest, Hungary
www.ipic2015.com

November 15–19, 2015

CD1-MR1 2015
Mantra, Lorne, Victoria, Australia
www.cd1-mr1-2015.org/

November 24–26, 2015

Immunotherapy@Brisbane 2015
Brisbane, Australia
<http://conference.qimrberghofer.edu.au/page/Immunotherapy/>

2016

January 17–22, 2016

The 5th NIF Winter School on Advanced Immunology
Awaji, Japan
<http://ifrec-sign-winterschool.org/>

January 23–26, 2016

The 55th Midwinter Conference of Immunologists at Asilomar
Pacific Grove (near Monterey), CA
www.midwconimmunol.org

February 18–22, 2016

2016 BMT Tandem Meeting
Honolulu, HI
www.cibmtr.org/Meetings/Tandem/index.html

May 13–17, 2016

IMMUNOLOGY 2016™
AAI Annual Meeting
Seattle, WA
www.immunology2016.org

August 21–26, 2016

ICI 2016: International Congress of Immunology 2016
Melbourne, Australia
<http://ici2016.org>

2017

May 12–16, 2017

IMMUNOLOGY 2017™
AAI Annual Meeting
Washington, D.C.
www.aai.org/Meetings/Future_Meeting.html

2018

May 4–8, 2018

IMMUNOLOGY 2018™
AAI Annual Meeting
Austin, TX
www.aai.org/Meetings/Future_Meeting.html

GRIP

Grant Review for Immunologists Program

Get a GRIP: An AAI program designed to help new investigators prepare their NIH grant proposals

The AAI Grant Review for Immunologists Program (GRIP) offers new principal investigators (PIs) access to established PIs for guidance in preparing grant proposals as they embark on their independent careers. Early-career PIs (assistant professors or equivalents) are invited to submit their grants' "Specific Aims" pages to the GRIP coordinator who, with the assistance of a small volunteer subcommittee, will attempt to match each topic of the proposal with the research experience of an established PI. Matches will be made as quickly as possible to allow participants to meet upcoming NIH grant deadlines. Participation is open only to AAI regular members and is strictly voluntary. The program is not intended to supplant internal mentoring programs at applicants' institutions.

To apply, please send your CV and the grant's "Specific Aims" page to infoaai@aai.org. (please write "GRIP" in the subject line)

To volunteer as a mentor, please send your CV and a brief description of your grant-reviewing experience to infoaai@aai.org. (subject line "GRIP")



Program details at aai.org/Education/GRIP

The American Association of Immunologists



Future AAI Annual Meetings

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May 13–17
Seattle, Washington

2017

IMMUNOLOGY 2017™

May 12–16
Washington, D.C.



2018



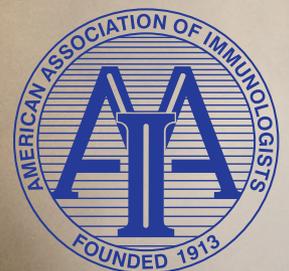
IMMUNOLOGY 2018™

May 4–8
Austin, Texas

IMMUNOLOGY 2016™

MAY 13-17, 2016 WASHINGTON STATE CONVENTION CENTER SEATTLE, WA

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www.IMMUNOLOGY2016.org

AAI Career Advisory Board

Starting your first lab? Facing new and puzzling issues? If so, you probably wish to turn to a more senior scientist for guidance—but perhaps not one at your own institution. The AAI Career Advisory Board (CAB) is tailored specifically for you.

The CAB is a referral service to match early faculty who submit requests for guidance on specific career issues with more senior PIs having experience and insight in those areas, excluding members of your own faculty. You may also specify individuals not to be contacted on your behalf.

Eligibility: Although the CAB is sponsored by the Committee on the Status of Women, it is open to all early-faculty AAI members, both men and women.

Advisors: A pool of senior scientists—men and women—are volunteering to be “on call.” Topics include recruiting, handling personnel issues, timing for first grant submissions, building networks, teaching, balancing family and work, serving on NIH study sections, and more.



Visit www.aai.org/About/Leadership/Committees/CSOW/Career-Advisory-Board.html to submit a request.