



AAI NEWSLETTER

The American Association of Immunologists

AUGUST 2015

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AAI Expands Travel Awards and Outreach Programs *Commitment Bolsters Support for Members' Participation in Regional, International Immunology Meetings*



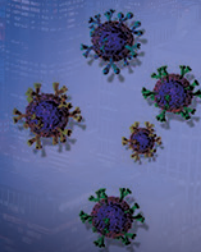
4th European Congress
of Immunology
Vienna 2015

September 6-9 / Vienna waits for you!

Members Awarded AAI Travel Grants for 4th European Congress in Vienna – *See page 19*



AAI to Offer Members \$1 Million in Travel Grants for 16th International Congress in Melbourne – *See page 20*



ICI 2016
INTERNATIONAL
CONGRESS OF
IMMUNOLOGY
21–26 AUGUST 2016
MELBOURNE
AUSTRALIA

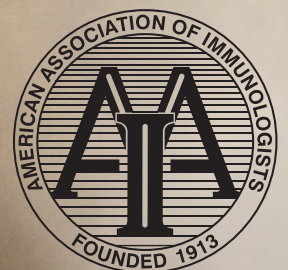
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**Dan R. Littman,
M.D., Ph.D., AAI '87**

AAI President, July 2015 –
June 2016

HHMI Investigator and
Kimmel Professor of Molecular
Immunology

Skirball Institute
of Biomolecular Medicine

New York University School
of Medicine

Dr. Littman, a member of the AAI Council since his election in 2010, is the 99th president of AAI, leading the association during the July 2015–June 2016 term.

A Howard Hughes Medical Institute (HHMI) investigator since 1995, Littman is the Helen L. and Martin S. Kimmel Professor of Molecular Immunology in the Departments of Pathology and Microbiology at the New York University School of Medicine's Skirball Institute of Biomolecular Medicine, where he also serves as coordinator of the Molecular Pathogenesis Program.

Littman's laboratory investigates the molecular events underlying T lymphocyte differentiation and activation and the mechanisms by which symbiotic bacterial species influence immune responses. Littman's early work included key discoveries regarding T cell coreceptors and how HIV uses CD4 and CCR5 to enter target T cells. His group has also studied how HIV causes systemic depletion of helper T cells and subverts normal immune defenses to its advantage, and has more recently worked to understand how commensal microbiota modulate responses against pathogenic viruses such as HIV. At a more basic level, Littman's lab works to understand the mechanisms of the transcription factors that activate gene expression programs and the epigenetic mechanisms that lock in these programs through analyzing the development of T lymphocytes and their responses to inflammatory microbial signals. They elucidated mechanisms of CD4 vs. CD8 T cell lineage specification in the thymus including regulation by the transcription factors Runx1, Runx3, and ThPOK, and also identified the importance of the transcription factor ROR γ t and other transcriptional and post-transcriptional regulatory networks in the differentiation of Th17 cells and IL-22-producing innate lymphoid cells. They found that a commensal gut microbe, segmented filamentous bacteria (SFB), induced differentiation of Th17 cells, leading both to protection against infection and induction of autoimmune disease. Ongoing research seeks to determine which commensal bacteria are helpful and which are harmful in a multitude of inflammatory and autoimmune situations in

hopes of finding ways to promote specific types of immune responses in specific situations.

Littman was the 2010 AAI-Invitrogen Meritorious Career Award honoree for outstanding research contributions to the field of immunology. Littman is also a past AAI Distinguished Lecturer and has served as an AAI President's Symposium speaker and AAI major symposium chair and speaker at the AAI annual meeting. He has served as a member of the AAI Awards Committee, AAI Nominating Committee, and AAI Program Committee.

Littman is an elected member/fellow of the National Academy of Sciences, Institute of Medicine (renamed National Academy of Medicine, 2015), the American Academy of Arts and Sciences, the Association of American Physicians, and the American Academy of Microbiology. He has served on numerous review and advisory panels on behalf of NIH (including the NIH AIDS Vaccine Research Committee, National Cancer Institute Board of Scientific Councilors, NIH Immunobiology Study Section, NIH Director's Opportunity 5 Themes Infectious Diseases) as well as on behalf of the Jackson Laboratories, Lasker Awards; Jane Coffin Childs Memorial Fund for Medical Research; Rainin Foundation; Cold Spring Harbor conferences; Research Institute of Molecular Pathology, Vienna; Max Planck Institute; Pew Scholars Program; Damon Runyon Ratchleff Innovation Award; New York Stem Cell Foundation; La Jolla Institute for Allergy and Immunology; the Harvey Society (including as board president); Damon Runyon Cancer Research Foundation; Institute for Research in Biomedicine, Bellinzona; Memorial Sloan Kettering Cancer Center; DNAX Research Institute; Gordon Conference (immunology); Centre d'Immunologie, Marseille-Luminy; Irvington Institute; Searle Scholars program; Israel Cancer Research Fund; Cancer Research Institute; and American Cancer Society (California). His current and past editorial board appointments include service on behalf of the *Annual Review of Immunology* (current Co-Editor-in-chief), *Cell*, *Immunity*, and *International Immunity*.

His additional career honors and appointments include: senior fellow, Simons Foundation Society of Fellows; Ross Prize in Molecular Medicine; the New York City Mayor's Prize for Excellence in Science and Technology; NIH Director's Lecture; NIH MERIT Award; the Searle Scholar Award, Chicago Community Trust; Bernard Amos Memorial Lecture, Duke University; Richard C. Parker Memorial Lecture, Columbia University; Carl Vernon Moore Memorial Lecture, Washington University; Newton-Abraham Visiting Professor, University of Oxford; Harvey Society Lecture, New York; Peter Doherty Lecture, St. Jude Children's Research Hospital; Charles A. Stuart Memorial Lecture, Brown University;

See *99th AAI President's Profile*, p. 35

FOCUS ON PUBLIC AFFAIRS

AAI Holds Fourth Annual Public Policy Fellows Capitol Hill Day

Earlier this year, the 2014–2015 class of AAI Public Policy Fellows traveled to Washington, D.C., to participate in the fourth annual AAI Public Policy Fellows Program Capitol Hill Day.

The 10 AAI Fellows were joined by AAI Committee on Public

Affairs Chair Clifford V. Harding, M.D., Ph.D., and AAI Advocacy Programs Subcommittee Chair Susanna Greer, Ph.D. The program opened on the evening of March 10 with a working dinner. National Institute of Allergy and Infectious Diseases (NIAID) Principal Deputy Director Hugh Auchincloss, M.D. (AAI '83), was the special guest speaker for the fourth consecutive year. Auchincloss provided a behind-the-scenes perspective on NIH and



AAI Fellows, leaders, and staff gathered on Capitol Hill



(L-R): AAI Fellows Ryan Cummings and Heather Kling, AAI Director of Public Policy and Government Affairs Lauren Gross, AAI Fellow Sesquile Ramon, and Senator Elizabeth Warren

presentation focused on preparing the Fellows for their visits to Capitol Hill.

Each of the Fellows visited two or three offices of his or her own congressional delegation, as well as other congressional offices. The Fellows advocated for predictable and sustained funding for NIH, including a budget of at least \$32 billion for fiscal year 2016. They also distributed AAI materials, including a recently issued AAI statement on the safety and efficacy of vaccines (see http://aai.org/Public_Affairs/Letters-Comments.html).

AAI Launches Fifth Year of Public Policy Fellows Program

May 1 marked the beginning of the fifth year of the AAI Public Policy Fellows Program (PPFP). The PPFP is designed to engage eligible postdoctoral fellows and junior scientists in public policy and legislative activities that impact biomedical research. To date, 40 early-career scientists from 24 different states have completed the program.

AAI is pleased to welcome the following AAI members to the 2015–16 PPFP:

Tullia Bruno, Ph.D., *University of Colorado School of Medicine*

Jason Gigley, Ph.D., *University of Wyoming*

Nichol Holodick, Ph.D., *The Feinstein Institute for Medical Research*

David Larson, Ph.D., *University of Hawaii Cancer Center*

Jean Nepomuscene Manirarora, D.V.M., Ph.D., *FDA Center for Biologics Evaluation and Research*

Meghan Marré, Ph.D., *University of Pittsburgh*

Nicole Perry, Ph.D., *Seattle Children's Research Institute*

Erica Stone, Ph.D., *The Wistar Institute*

Joshua Vieth, Ph.D., *Child Health Institute of New Jersey/ Rutgers University*

Jessica Werner, Ph.D., *University of Michigan*

For more information about the AAI PPFP, please visit http://aai.org/Public_Affairs/PPFP/index.html.

Alternative Funding Sources Discussed during Public Affairs Session at IMMUNOLOGY 2015™

The AAI Committee on Public Affairs (CPA) hosted a session, entitled “Funding for Immunology Research: Non-Federal Opportunities and NIAID Program Update,” at the AAI annual meeting IMMUNOLOGY 2015™ in New Orleans. Due to fiscal constraints imposed by federal budget cuts and inflationary erosion, NIH paylines and success rates have been reduced significantly, jeopardizing the careers of many productive senior and emerging scientists. As a result, non-governmental sources are becoming an increasingly attractive way to support important biomedical research. The AAI session provided scientists with background on—and tips on how to acquire—these alternative

sources of funding. The session also included an update on the state of immunology research funded by National Institute of Allergy and Infectious Diseases (NIAID), the primary funder of basic immunology research.

The session, which was chaired by AAI CPA Chair Clifford V. Harding, M.D., Ph.D., featured four speakers: William Chambers, Ph.D., national vice president for extramural research at the American Cancer Society, who spoke about the role of charitable and patient advocacy groups in funding biomedical research; Gwen Nguyen, cause director at Indiegogo, who described how crowd-funding can be used for biomedical research projects; Bruce Walker, M.D., director of the Ragon Institute of MGH, MIT and Harvard, and professor at Harvard



(L-R): Bruce Walker, William Chambers, Gwen Nguyen, Daniel Rotrosen, Clifford Harding



Audience members asking questions of the public affairs session speakers

University, who discussed the role of philanthropy in supporting biomedical research; and Daniel Rotrosen, M.D., director of NIAID's Division of Allergy, Immunology, and Transplantation, who, among other things, provided an update on a new NIAID program that sets aside additional funding for basic immunology-focused projects. The symposium was very well attended. Following the speakers' talks, there was a lively question-and-answer session.

House Passes 21st Century Cures Act Includes New Mandatory Funding for NIH

In early July, the House of Representatives approved the *21st Century Cures Act*, a bipartisan bill designed "to accelerate the discovery, development, and delivery of 21st century cures," by a vote of 344-77. About two months earlier, the bill was unanimously approved by The House Energy & Commerce Committee (by a vote of 51-0). Among its many NIH and FDA provisions is a new \$8.75 billion NIH and Cures Innovation Fund.

The *21st Century Cures Act* is the product of more than a year of work by the House E&C Committee, most notably by Committee Chair Fred Upton (R-MI, 6th) and former Ranking Member Diana DeGette (D-CO, 1st). The first draft of the bill, which was released by Upton in January 2015, did not have the support of his Democratic colleagues. The version of the bill that was approved by the full House was at least the 6th iteration of the bill.

Unlike the original draft bill, the *21st Century Cures Act* would both permit and require new funding for NIH. The bill authorizes (but does not require) appropriators to increase the regular NIH budget by \$1.5 billion per year over the next three years. However, the bill requires new funding for NIH by establishing the NIH and Cures Innovation Fund. If the bill becomes law, NIH would receive an additional \$8.75 billion in "mandatory" funding over the next five years through this Fund.

The bill does place restrictions on how NIH Innovation Fund dollars may be used. For example, each year, at least \$500 million of Fund dollars must be allocated to another new program called the Accelerating Advancement Program (AAP). Under the AAP, the NIH Director would partner with NIH Institutes and Centers "to accomplish important biomedical research objectives." Every dollar that the NIH Director provides to an NIH Institute or Center would have to be matched by that Institute or Center. The bill would also require that a significant percentage of NIH Innovation Fund dollars be allocated to high-risk, high-reward research and early stage investigators.

Other NIH provisions of interest in the bill include:

- a requirement that NIH develop a strategic plan for fiscal years 2016-2020, and a new strategic plan once every five years;
- the establishment of 5-year terms for NIH Institute and Center Directors, though it does not place a limit on the number of terms that may be served;

- a requirement that NIH reduce administrative burden by implementing the recommendations of several groups that have already addressed this issue;
- the creation of a new Capstone Award “to facilitate the successful transition or conclusion of research programs.” This is very similar to an idea recently floated by NIH, tentatively entitled the NIH Emeritus Award.

In order for the bill to be considered on the House floor, the managers of the bill had to agree on a way to pay for it. According to the Congressional Budget Office, the House-passed version of the bill would actually reduce federal deficits over the next decade after accounting for the offsets in the bill, which include selling 70 million barrels of oil from the Strategic Petroleum Reserve

The Senate Health, Education, Labor, and Pensions (HELP) Committee is in the early stages of developing its own proposal. AAI recently signed a community letter (see <https://www.aamc.org/download/437064/data/communitylettertosenatehelpcommitteeonmedicalinnovation.pdf>) to HELP Committee Chair Lamar Alexander (R-TN) and Ranking Member Patty Murray (D-WA), which offers a number of recommendations regarding potential NIH provisions in the bill. The HELP Committee has also held numerous hearings and is engaging the biomedical research community in an effort to understand the issues at play and determine some possible solutions. In particular, in multiple hearings, Alexander has asked NIH Director Francis Collins, M.D., Ph.D., to provide him with a list of steps that Congress can take to reduce the administrative burden of NIH researchers.

AAI will continue to actively follow the *21st Century Cures Act* and the companion innovation effort now underway in the Senate.

AAI Submits Comments on Policies to Optimize NIH Funding

AAI recently submitted comments in response to the NIH “Request for Information (RFI): Optimizing Funding Policies and Other Strategies to Improve the Impact and Sustainability of Biomedical Research.” This RFI sought input on issues that could increase the efficacy and sustainability of the biomedical research enterprise despite tight fiscal conditions. AAI offered recommendations on a wide range of topics, including evaluating the allocation of the NIH budget, reviewing the efficacy of various NIH pilot initiatives, and reconsidering how grant applications are evaluated.

The NIH solicited information on four topic areas:

1. issues that limit the impact and sustainability of NIH-funded research
2. suggested adjustments to current funding policies
3. ideas for new policies that would increase impact and sustainability of NIH-funded research
4. other relevant issues

In its response (see www.aai.org > Public Affairs > Letters and Comments), AAI recommended that NIH evaluate ongoing and future large projects/contracts, indirect cost reimbursements, and the percentage of salary charged to NIH grants, as well as identify ways to reduce administrative burden. AAI also recommended that NIH reduce the number of Requests for Applications, evaluate the efficacy of increased review for well-funded individuals, consider wider implementation of successful pilot programs, and adopt an expedited review process similar to that used for AIDS and AIDS-related applications. Finally, AAI suggested that new policies be geared toward expanding the role of staff scientists and extending funding advantages to those seeking their first R01 renewal. AAI also identified and recommended solutions to several current laws and regulations that impede the sustainability of the biomedical research enterprise, including NIH’s inability to carry over funding from one fiscal year to the next and travel restrictions for government scientists.

AAI Submits Comments to USDA on Reducing Regulatory Burden

On May 18, AAI submitted comments in response to a U.S. Department of Agriculture (USDA) “Request for Information (RFI): Identifying and Reducing Regulatory Burdens.” The RFI sought to understand how current regulations could be streamlined or improved and to determine if any regulatory requirements are outdated or could benefit from flexibility.

In its comments (see www.aai.org > Public Affairs > Letters and Comments), AAI provided two suggestions to reduce regulatory burden for researchers and oversight committees. First, AAI recommended that “the USDA should exempt from AWA [Animal Welfare Act] registration certain nonagricultural biomedical research procedures that occur in an agricultural research setting.” Exemption under certain circumstances would potentially reduce the number of animals used in biomedical research. AAI also recommended that

the USDA reduce the number of yearly inspections required, as multiple inspections per year impose an administrative burden on Institutional Animal Care and Use Committees without improving the health or safety of the research animals.

AAI Responds to Petition on Alternatives to Animal Research

On May 29, AAI submitted comments to the U.S. Department of Agriculture's Animal and Plant Health Inspection Service (APHIS) regarding the use of animal alternatives in biomedical research. In response to this "Notice of Petition: Petition to Define Alternatives to Procedures That May Cause Pain or Distress and To Establish Standards Regarding Consideration of These Alternatives," AAI urged APHIS to refrain from creating additional definitions for the term "alternative" or from supplanting the current role of Institutional Animal Care and Use Committees (IACUCs) in the evaluation of whether alternatives to animal models have been thoroughly considered (see www.aai.org > Public Affairs > Letters and Comments).

The "Notice of Petition" was posted by APHIS in response to a petition submitted by the Physicians Committee for Responsible Medicine, which requested that APHIS amend the Animal Welfare Act to provide definitions of "alternative" and "painful procedure," specify what investigators must do when considering alternatives to animal models, and standardize the consideration and evaluation of alternatives in animal research. The AAI comments argue, however, that the measures suggested in the petition would increase the regulatory and administrative burden on investigators and IACUCs without tangibly improving animal welfare.

Senators Durbin, Graham Create NIH Caucus

Senators Richard Durbin (D-IL) and Lindsey Graham (R-SC) recently joined forces to create a Senate NIH Caucus. A congressional caucus is a coalition of members of Congress who meet to pursue common objectives. Durbin and Graham will serve as co-chairs of the caucus.

According to a report in the Washington, D.C., newspaper, *The Hill*, "[t]he caucus will focus on the agency's waning ability to fund research after losing 25 percent of its purchasing power since 2003...." Durbin and Graham "attribute the decline to 'sequestration

and flat budgets'" (see <http://thehill.com/policy/healthcare/242483-senators-create-new-caucus-on-nih-funding>).

Senators formally announced the caucus at a May 19 event attended by several representatives from NIH, including NIH Director Francis Collins, M.D., Ph.D.; National Center for Advancing Translational Sciences Director Christopher Austin, M.D.; National Institute of Mental Health Director Tom Insel, M.D.; and National Institute on Drug Abuse Director Nora Volkow, M.D.

The caucus is open to all senators. Thus far, Durbin and Graham have been joined by Senators Tammy Baldwin (D-WI), Richard Blumenthal (D-CT), Ben Cardin (D-MD), Robert Casey (D-PA), Christopher Coons (D-DE), Joe Donnelly (D-IN), Al Franken (D-MN), Angus King (I-ME), Amy Klobuchar (D-MN), Edward Markey (D-MA), Claire McCaskill (D-MO), Gary Peters (D-MI), Brian Schatz (D-HI), Debbie Stabenow (D-MI), Thom Tillis (R-NC), Tom Udall (D-NM), and Roger Wicker (R-MS).

NIGMS Announces Pilot Program to Fund Early Investigators

On June 3, the National Institute of General Medical Sciences (NIGMS) announced a new funding opportunity, entitled "Maximizing Investigators' Research Award (MIRA) for New and Early Stage Investigators (R35)" (see <http://grants.nih.gov/grants/guide/rfa-files/RFA-GM-16-003.html>). Applicants may request up to \$250,000 in direct costs per year for five years, with an opportunity for renewal. This award is intended to provide junior investigators with increased flexibility in their research by eliminating the need for specific aims and reducing the time spent on grant applications. Applications can be submitted between August 9 and September 9.

This Request for Applications follows the first pilot MIRA program for established investigators, which was announced on January 27. Both programs fund individual investigators, not specific projects, and aim to improve the distribution of funds by requiring that no additional NIGMS grants be awarded to MIRA recipients (with the exception of pre-existing K awardees). This pilot comes in response to concerns raised after the MIRA program was first announced that this funding mechanism might be biased against young investigators. As a result, NIGMS launched this new initiative, whose "purpose...is to test the feasibility of this grant mechanism for New and Early Stage Investigators through a pilot program with restricted eligibility."

Members in the News

Casanova, Leonard, Nagata, Ramakrishnan, Steinman Elected to National Academy of Sciences

AAI members Jean-Laurent Casanova, Warren Leonard, Shigekazu Nagata, Lalita Ramakrishnan, and Lawrence Steinman are 2015 electees to the National Academy of Sciences (NAS) in recognition of their distinguished and continuing achievements in original research. Election to NAS membership is considered one of the highest honors bestowed in the United States on scientists who pursue original research.



Jean-Laurent Casanova, M.D., Ph.D., AAI '12
Professor, Head of Laboratory, and Senior Attending Physician, The Rockefeller University, and Investigator, Howard Hughes Medical Institute (HHMI)

Dr. Casanova's research identifies single mutations in genes affecting human immunity to specific

pathogens, particularly in children. His work has provided impetus for a paradigm shift in the field of infectious diseases, from believing that one mutation can confer susceptibility to many diseases to that of one genetic mutation causing vulnerability to a defined pathogen. Early in Casanova's career, he identified genetic variations in interferon-gamma that led to severe illness or death in children administered tuberculosis vaccines. These early studies served as a foundation for the vast body of high-profile research that Casanova has accumulated over the past 20 years. His lab has identified mutations in human genes that underlie predisposition to the development of mycobacterial (IKBK, IFNGR1, IL12RB1, and STAT1) and bacterial (IRAK4, MYD88) infections. Interestingly, he also found that mutations in IRAK4, an essential signaling molecule downstream of Toll-like receptors that detect viral particles, confer rather than impair resistance to some types of viral infections. His research has also revealed mutations in innate immune signaling pathway genes TLR3, TRAF3, TICAM1, UNC93B1, and TBK1 that increase susceptibility to the development of herpes simplex encephalitis and errors in genes associated with IL-17 immunity that lead to rampant mucocutaneous candidiasis. Most recently, his lab discovered defects in IRF7 that were linked to impaired interferon-gamma production in some individuals who experienced life-threatening influenza infection. Casanova continues to strive toward establishing a theory of human genetic

determinism for the development of infectious diseases using genetic analysis strategies to dissect the underlying causes of adverse or abnormal responses to human contagions and vaccines.

Casanova serves as deputy editor-in-chief of the *Journal of Clinical Immunology*; holds additional editorial board appointments with *Journal of Experimental Medicine*, *Current Opinion in Pediatrics*, *Current Opinion in Immunology*, *Journal of Medical Genetics*, *JAK-STAT*, and *Clinical Immunology*; and has held past such appointments with *Annual Review of Immunology*, *Seminars in Immunology*, *Annals of the New York Academy of Sciences*, and *Philosophical Transactions of The Royal Society B*. He has served as an ad hoc reviewer for *Science*, *Nature*, *Cell*, *New England Journal of Medicine*, *Journal of Experimental Medicine*, *Journal of Clinical Investigation*, *Nature Medicine*, *PLoS Medicine*, *Lancet*, *Proceedings of the National Academy of Sciences USA (PNAS)*, *Nature Genetics*, *American Journal of Human Genetics*, *PLoS Genetics*, *Nature Immunology*, *Immunity*, and *Blood*.

Casanova has served on multiple NIH special emphasis panels, as well as advisory/review panels for the New York Stem Cell Foundation, Jeffrey Modell Centers Network, European Research Council, Fondazione Cariplo, Thrasher Research Fund, AXA Research Fund, Fred Rosen-Jeffrey Modell Research Award, Technology Research Institute, Sanofi, Care-for-Rare Foundation, HHMI, Foundation for Primary Immunodeficiency Diseases, The Treilles Foundation, Dautrebande Foundation Award, Research Centre of the University of Montreal Hospitals, The Midwest Regional Center of Excellence for Biodefense and Emerging Infectious Diseases Research, Singapore Network of Immunology, MUGEN European Network of Excellence, and Hong Kong Research Grant Committee.

Casanova is currently serving as president of the Henry Kunkel Society. His additional career honors and appointments include: Sanofi-Institut Pasteur International Mid-Career Award; Robert Koch Prize; Clinical Immunology Society Presidential Award; Norman J. Siegel New Member Outstanding Science Award, American Pediatric Society; Seymour and Vivian Milstein Award, International Society for Interferon and Cytokine Research; Ilse and Helmut Wachter Foundation Award; InBev-Baillet Latour Health Prize, Immunology and Infectious Diseases; E. Mead Johnson Award for Research in Pediatrics, Society for Pediatric Research; Oswald Avery Award, Infectious Diseases Society of America; Richard Lounsbery Award, French Academy of Sciences; Laboratory Award, Académie de Médecine; AGF-Institut de France Prize; President, European Society for Primary Immunodeficiencies; International Scholar, HHMI; Jacques Oudin Prize, Société Française d'Immunologie; International René Descartes Prize (Life Sciences), European

Union; International Lucien Dautrebande Prize (Medicine), Academy of Medicine, Belgium; member, Expert Committee on Primary Immunodeficiencies, International Union of Immunological Societies; World Technology Network 2003 Award, Health and Medicine (San Francisco); Roy-Vaucouloux Prize, Académie des Sciences; Jean Hamburger Prize, City of Paris/Assistance Publique-Hôpitaux de Paris; Laureate, Schlumberger Foundation for Education and Research; honorary member, Scandinavian Society for Immunology; honorary doctorates, University of Debrecen and University of Zürich; and visiting professor, King Saud University and Shanghai Jiaotong University.

Casanova received his M.D. from Cochin Medical School, University Paris Descartes, and Ph.D. (biology) from University Paris Pierre et Marie Curie, based on research conducted at the Ludwig Institute for Cancer Research (Lausanne, Switzerland) and Pasteur Institute/Jussieu Faculty of Sciences, University Paris Pierre et Marie Curie. His postdoctoral training (mentors: Claude Griscelli and Alain Fischer) included service as a resident in pediatrics, Assistance Publique-Hôpitaux, Paris, and as a research fellow in pediatric immunology-hematology, Necker Hospital and School of Medicine, Assistance Publique-Hôpitaux, University Paris Descartes. After serving appointments as professor of pediatric hematology and head of laboratory (human genetics of infectious diseases) at Necker School of Medicine, Casanova joined the Rockefeller University as a professor and head of laboratory (2008) and senior attending physician (2009). He retains appointments as visiting professor and head of laboratory at the Necker Hospital for Sick Children in Paris and has been an HHMI investigator since 2014.



**Warren J. Leonard, M.D.,
AAI '86**

NIH Distinguished Investigator; Chief, Laboratory of Molecular Immunology; and Director, Immunology Center, National Heart, Lung, and Blood Institute (NHLBI), NIH

Dr. Leonard's research primarily focuses on elucidating the biology, molecular mechanisms, and regulation of cytokines, particularly interleukins (ILs), that signal through the common gamma chain and determining how cytokines affect immune function. He has made numerous contributions to the field of cytokine biology, delineating the methods by which cytokines signal and influence the nature of effector and

tolerogenic immune responses. His early groundbreaking studies as a fellow involved cloning the human IL-2 receptor (IL-2R) and later led to his own lab's discovery that the IL-2R gamma chain, or common gamma chain, is shared amongst several cytokines. His lab was the first to clone the IL-21R and has since shown its importance in several disease models, including cancer, and autoimmune diseases, such as lupus, uveitis, and type 1 diabetes. Leonard's research has also made significant advancements in the understanding of primary immunodeficiencies, demonstrating that underlying IL-2R gamma mutations are linked to X-linked severe combined immunodeficiency and that other immunodeficiencies are caused by gene mutations in Janus-activated kinase 3 (JAK3) and IL-7R. His current studies continue to provide insight into the complex interplay between cytokines and immune cells during normal and pathogenic immune responses and also use advanced large-scale analyses, such as next-generation sequencing, to investigate sources of unidentified immunodeficiencies.

Leonard was the 2003 recipient of the AAI-Huang Foundation Meritorious Career Award. He has served as a major symposium chair at the AAI annual meeting, as an associate editor for *The Journal of Immunology*, and as AAI representative to the FASEB Summer Research Conferences Committee. Leonard has held a variety of review panel appointments, including: NHLBI Genomics Core Oversight Committee; councilor, NIH Assembly of Scientists; ad hoc member, project grant study sections, National Institute of Diabetes and Digestive and Kidney Diseases and National Institute of Allergy and Infectious Diseases, NIH; contributing member, Faculty of 1000; NIH Senior Leadership Program; multiple board, officer, and committee appointments, Foundation for Advanced Education in the Sciences; publications chair, International Cytokine Society; advisory committee member, FDA; and co-organizer, inaugural meeting of the International Cytokine and Interferon Society (ICIS). He holds editorial board appointments with *Cold Spring Harbor Laboratory Press*, *International Immunology*, *Immunity*, and *Cytokine* and has held past such appointments with the *Journal of Biomedical Science*, *Journal of Biological Chemistry*, *Lymphokine and Cytokine Research*, *Archives of Biochemistry and Biophysics*, *The New Biologist*, and *Molecular Immunology*.

A member of the Institute of Medicine (renamed National Academy of Medicine, 2015), Leonard received the Federal Laboratory Consortium for Technology Transfer Mid-Atlantic Regional Award for Excellence in Technology Transfer in 2014. His additional career honors include: NHLBI Outstanding Translational Science Award; honorary

Members in the News (continued)

Lifetime Membership Award, ICIS; keynote speaker, Federation of European Biochemical Societies 2nd Special Meeting on JAK/STAT signaling: model systems and beyond, Nottingham, UK; NHLBI Orloff Science Award (multiple); visiting professor, Australasian Society for Immunology; NIH Director's Award; NHLBI Mentoring Award; NIH Award of Merit (multiple); keynote speaker, Brazilian Society for Immunology/Brazilian Clinical Immunology meeting; keynote speaker, 28th Annual Mid-Atlantic Immunobiology Meeting, State College, Pennsylvania; Outstanding Service Award, FDA Center for Biologics Evaluation and Research; fellow, American Association for the Advancement of Science; member, American Association of Physicians; Outstanding Investigator Award, American Federation for Clinical Research Foundation; Pfizer Visiting Professor of Rheumatology and Immunology, Duke University School of Medicine; Special Recognition Award, U.S. Public Health Service; lecture in honor of Multipurpose Arthritis Center dedication, University of Michigan; member, American Society for Clinical investigation; and Award to Trainees in Clinical Research, American Federation for Clinical Research.

A mathematics graduate (magna cum laude) of Princeton University, Leonard received his M.D. from Stanford University. After completing his medical internship at George Washington University Hospital and residency at Barnes Hospital in St. Louis, Missouri, he held successive appointments as a research associate at Washington University School of Medicine in St. Louis; senior staff fellow in the Metabolism Branch of the National Cancer Institute, NIH; and senior staff fellow in the Cell Biology and Metabolism Branch, Eunice Kennedy Shriver National Institute of Child Health and Human Development (NICHD), NIH. In 1987, he was appointed assistant clinical professor of medicine at the Uniformed Services University of the Health Sciences and medical officer (research) with tenure in the Cell Biology and Metabolism Branch at NICHD. He held subsequent medical officer appointments in the Section on Pulmonary and Molecular Immunology, Office of the Director, Intramural Research Program, NHLBI, and in the Laboratory of Molecular Immunology, NHLBI.

Leonard has served as chief of the Laboratory of Molecular Immunology, NHLBI, since 1994 and as NHLBI Immunology Center director since 2004. He was appointed an NIH Senior Investigator in 2007 and an NIH Distinguished Investigator in 2008; he also serves as an adjunct professor of pathology and laboratory medicine at the University of Pennsylvania.



**Shigekazu Nagata, Ph.D.,
AAI '04**

*Professor, Laboratory of
Biochemistry and Immunology,
Osaka University*

Dr. Nagata's research has made a significant impact on the field of immunology, dating from his earliest studies, wherein he characterized interferon-alpha, followed

by granulocyte-colony-stimulating factor and its receptor. However, his seminal contributions to science have been in the field of apoptosis, beginning with his identification of the human cDNA for Fas and, a few years later, discovery of the death factor Fas ligand. These initial discoveries served as a springboard to a lifelong career of studying factors involved in apoptosis, leading to numerous high-profile publications. Among many other findings, Nagata's research has helped delineate the roles of Fas and perforin pathways in T cell-mediated cytotoxicity, macrophage-dependent degradation of DNA in apoptosis, and the programmed cell death mechanisms behind the display and recognition of phosphatidylserine on the cell surface. Nagata's lab has also detailed how defects in apoptotic pathways can lead to lymphoproliferative disease and trigger autoimmunity in a variety of model systems. In addition to other ongoing apoptotic studies in the lab, Nagata's recent work has focused on deciphering the importance of transmembrane protein 16 family members in the display of phosphatidylserine on the surface of apoptotic cells.

Nagata is a past Major Symposium chair and speaker at the AAI annual meeting. He has served as president of the Molecular Biology Society of Japan; president and board member of the Japanese Biochemical Society; and board member, Japanese Society for Immunology. His additional career appointments include service on behalf of the Science Councils of Japan (Basic Medicine Council); Human Frontier Science Program Council of Scientists (Strasbourg, France); and journal editorial boards, including *Cell Death and Differentiation*, *International Immunology*, *Immunity*, *Biochimica et Biophysica Acta*, *Science*, *Cancer Cell*, and *Journal of Leukocyte Biology*.

Nagata's career honors include the Shi-Shi Award, Kyoto University; Debrecen Award for Molecular Medicine, Debrecen University; Honorary Doctorate, University of Zurich; elected associate, the Japan Academy; International Cell Death Society Prize; Person of Cultural Merit, Government of Japan; Japan Academy Prize/Imperial Prize, Japan Academy; Princess Takamatsu Foundation Cancer Award; Asahi Press Foundation Prize; Prix Lacassagne, French Cancer League; Boehringer-Kitasato Prize; Osaka Science Prize, Osaka Science

and Technology Foundation; Robert Koch Award; Emil von Böhring Prize; Erwin von Bälz Prize; Japan Biochemical Society Encouragement Award; Henry Kunkel Lecture, the Rockefeller University; Edwin J. Cohn Lecture, Harvard Medical School; Karolinska Research Lecture, Nobel Forum, Karolinska Institute; Charles Janeway Lecture, Engelhardt Institute of Molecular Biology, Russian Academy of Sciences; Marian Elliott Koshland Memorial Lecture, University of Chicago; and plenary/keynote lectures at international meetings, including the 9th International Congress on Cell Biology (Seoul, South Korea), 11th International Congress of Endocrinology (Sydney, Australia), and International Congress of Experimental Medicine (1999 - Florence, Italy); 5th International Conference on Tumor Necrosis Factor and Related Cytokines (Monterey, CA); 6th International Congress on Cell Biology (San Francisco); and 17th International Congress of Biochemistry and Molecular Biology (San Francisco).

Nagata received his B.S., M.S., and Ph.D. degrees in biochemistry from the University of Tokyo and completed postdoctoral training in molecular biology at the University of Zurich. In 1982, he was appointed assistant professor at the Institute of Medical Science, University of Tokyo, after which he served as head of Osaka Bioscience Institute and later as a professor at Osaka University Medical School and Graduate School of Frontier Bioscience. He subsequently served as a professor in the Kyoto University Graduate School of Medicine before returning to Osaka University in 2015 as a professor in the Immunology Frontier Research Center.



**Lalita Ramakrishnan,
MBBS, Ph.D., AAI '12**

*Professor of Immunology and
Infectious Diseases, University
of Cambridge*

Dr. Ramakrishnan's lab is immersed in defining susceptibility factors for and host immune elements involved in the pathogenesis of tuberculosis. Her work has greatly impacted the field of tuberculosis research, taking unique approaches to unravel the complexities of this disease. With the use of zebrafish, an organism naturally susceptible to a *Mycobacterium* closely related to the *M. tuberculosis* strain that causes disease in humans, Ramakrishnan genetically manipulates both the pathogen and elements of host immunity to delineate the intricate interplay between the pathogen and the host. Her work has provided key insights into host-pathogen interactions during the process of tuberculous granuloma formation and has identified several mycobacterial strategies for evasion and manipulation of host immunity. Her lab produced influential work that identified duality for the cytokine tumor necrosis

factor (TNF) in mediating both host susceptibility and resistance by triggering disparate pathways involving reactive oxygen species in circumstances of low versus high TNF production. Ramakrishnan's most recent work has revealed the strategies used by mycobacteria to evade eradication by microbicidal macrophages and recruit macrophages permissive to mycobacterial invasion to sites of infection. Her lab continues to dissect the complexities of tuberculosis infection, as well as contribute research broadly applicable to the fields of immunology and infectious disease.

Ramakrishnan has served on review panels for NIH (Director's New Innovator Award; special emphasis panels on innate immunity and tuberculosis) and other organizations, including National Institute of Immunology, Delhi, India; German Government Cluster of Excellence Program; Netherlands Organization of Scientific Research; American Cancer Society; Johns Hopkins University/NIH joint contract; HHMI's International Competition in Infectious Diseases and Parasitology; Wellcome Trust; U.S. Department of Veterans Affairs; and Royalty Research Fund, University of Washington.

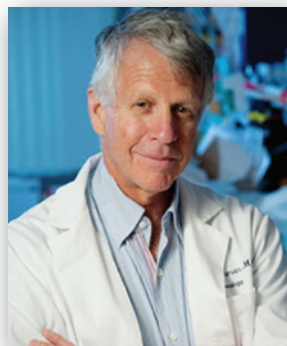
Ramakrishnan's editorial board appointments include service on behalf of *E Biomedicine*, *Disease Models and Mechanisms*, *Cell*, *Cellular Microbiology*, *PLoS Pathogens* (founding editorial board member), and *Infection and Immunity*, and she has served as a reviewer for additional journals, including *Molecular Cell*, *Nature*, *Science*, *Nature Medicine*, *Nature Immunology*, *Immunity*, *Cell Host and Microbe*, *Cell Reports*, *Science Translational Medicine*, and *PNAS*.

Her career honors and awards include: Wellcome Trust Principal Research Fellowship; NIH MERIT Award; NIH Director's Pioneer Award; Visiting Professorship, Center for Tuberculosis Research, Johns Hopkins University; Society of Leukocyte Biology G. Jeanette Thorbecke Award; Burroughs Wellcome Pathogenesis of Infectious Diseases Award; Sackler Science Frontier Series Lectureship, Tufts University; Science in Medicine Lectureship, University of Washington; Puget Sound Partners in Global Health Award; Ellison Medical Foundation New Scholar in Global Infectious Diseases; NIH Mentored Clinical Scientist Development Award; HHMI Physician Postdoctoral Fellowship Award; and Charlton Student Research Scientist Award, Tufts Medical School

Ramakrishnan received her MBBS with honors from Baroda Medical College (India) and Ph.D. (immunology) from Tufts University School of Medicine (advisor: Naomi Rosenberg). During her graduate training, she served as an immunology graduate research fellow at Tufts and as a resident in medicine at New England Medical Center. Her postdoctoral training included service as a clinical fellow (infectious diseases) at the University of California, San Francisco; postdoctoral fellow (microbiology and immunology) at Stanford University of Medicine (advisor:

Members in the News (continued)

Stanley Falkow); and associate physician at San Francisco General Hospital. She was appointed a senior research assistant at Stanford in 1998 and infectious diseases consultant at the Stanford/Veterans Administration Hospital in 1999. In 2001, she was named an assistant professor at the University of Washington, where she would later serve as a full professor of microbiology and medicine; adjunct professor of immunology; affiliate professor of microbiology, medicine, and immunology; and attending physician at the University of Washington Hospital. In 2014, she was named to her current position as a professor of immunology and infectious diseases at Cambridge University.



Lawrence Steinman, M.D., AAI '89

Professor of Neurological Sciences, Neurology, and Pediatrics, Department of Neurology, and Department of Neurological Sciences, Pediatrics and Genetics, Stanford University School of Medicine

Dr. Steinman has made extensive contributions to the study and treatment of neuroinflammatory diseases. He particularly focuses on understanding the pathogenesis of multiple sclerosis (MS) and has elucidated key findings integral to understanding this disease, including a large body of work defining self/super-antigens, protein factors and antibodies, and genetic factors that contribute to the development of MS. He has also characterized the immune cell populations involved in the pathology of this disease, identifying specific T cell epitopes and distinct T cell receptors that drive MS. Steinman has leveraged his basic research into the development of diagnostic tools to identify autoantibodies contributing to disease pathology and therapeutics designed to treat MS, including the FDA-approved humanized monoclonal antibody natalizumab, which blocks binding to the alpha4beta1 integrin present on inflamed brain endothelium. In addition to his MS research program, Steinman's research encompasses other autoimmune diseases, including type 1 diabetes, uveitis, and Huntington's disease. Steinman's current efforts toward the development of new therapeutics involve the design of tolerizing DNA vaccines to dampen the immune response to a specific self-antigen. He has adapted this platform for use in MS and type 1 diabetes. His current research efforts continue to explore inventive options for treatment of these and other autoimmune diseases.

Steinman is a past President's Symposium and major symposium speaker at the AAI annual meeting and served as associate editor for *The Journal of Immunology*. He has

served on the editorial boards of *International Immunology and Neurobiology of Disease*, on the NIH immunological sciences study section, and on review/advisory panels for the Institute of Medicine (Multiple Sclerosis and Other Neurologic Disorders in Veterans of the Persian Gulf and Post-9/11 Wars), National Multiple Sclerosis Society, Muscular Dystrophy Association, Receptos, Tolerion (founder), Transparency Life Sciences (founder), Cardinal Therapeutics (founder), Atreca (founder), Bayhill Therapeutics (founder), Roche Biosciences, Neurocrine Biosciences (founder), and Centocor.

He is a member of the National Academy of Medicine (formerly the Institute of Medicine); his additional career honors include the Charcot Prize for Lifetime Achievement in MS Research, International Federation of MS Societies; John M. Dystel Prize for Outstanding Contributions in Multiple Sclerosis Research, National Multiple Sclerosis Society/American Academy of Neurology; Stanford University Outstanding Inventor Award; Dr. Friedrich Sasse Award for Outstanding Contributions in Immunology, the Free University of Berlin; Senator Jacob Javits Neuroscience Investigator Award, NIH; Teacher-Investigator Award, NIH; honorary doctorate, Hasselt University; and Weir Mitchell Award, American Academy of Neurology.

Steinman received his B.A. (physics, with honors) from Dartmouth College and M.D. from Harvard University and completed his medical internship (surgery) and residencies (pediatrics and pediatric/adult neurology) at Stanford University Hospital. He served as a postdoctoral fellow in chemical immunology at the Weizmann Institute of Science and later as an NIH visiting fellow. In 1980, he was appointed an assistant professor at Stanford, where he became an associate professor in 1985 and has served as a full professor since 1991. From 1994 to 1997, he also served as a professor at the Weizmann Institute. He has held Stanford's G. A. Zimmerman Chair since 2008 and served as chair of the Program in Immunology from 2002 to 2011.

AAI Newsletter: Members in the News— Submissions Invited

AAI welcomes the opportunity to highlight the career achievements and professional honors attained by AAI member scientists. Such publicity not only serves to inspire colleagues but also informs the broader public of immunology's vital and widening role in scientific discovery and transformative medicine.

Help AAI share news of your or another member's noteworthy scientific and/or service recognition or career appointments by contacting mwccuddy@aai.org. Thank you!



AAI Congratulates Recipients of the 2015 Careers in Immunology Fellowships

AAI recently announced the AAI members and their designated AAI trainees selected to receive *AAI Careers in Immunology Fellowships* in 2015. The program, launched in 2014, is the largest in the AAI awards repertoire and provides independent research scientists with fellowships supporting one year of salary for a trainee (predoctoral or postdoctoral) in their labs.

The inaugural-year participants spoke highly of their experience with the program in 2014. Bill Green (AAI '80), professor and chairman at Geisel School of Medicine, detailed how the program helped his lab, saying, "This award was very impactful—both in terms of stimulating the last culminating year of data for trainee Megan O'Connor's Ph.D. thesis, and with regard to raising the bar of success for my other trainees."

Trainee recipient Nansalma Amarsaikhan (AAI '14) also lauded the program, explaining how the receipt of an AAI Careers in Immunology Fellowship has advanced her career, "I can unequivocally appreciate how this fellowship has helped me to

progress my research. I was able to present my work at three immunology conferences, excellent opportunities to meet other researchers and expand my horizons in the field, and I also published a peer-reviewed article. I am now moving forward to put data together for other publications."

The response to the inaugural fellowship cycle, which funded 37 members and their trainees, from other AAI members and the immunology community at large was also overwhelmingly positive, prompting AAI to increase the program's budget by 30 percent for the 2015 cycle and allowing AAI to support the career development of an unprecedented number of AAI members.

AAI wishes the 2015 recipients as much success in their research endeavors as the 2014 program participants experienced and looks forward to hearing about the exciting research conducted during the fellowship year.

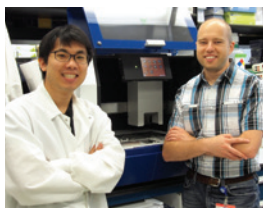
The 46 investigators and their trainees chosen to receive 2015 *Careers in Immunology Fellowships* are:



Avery August, Ph.D. (AAI '99)
Professor
Weishan Huang, Ph.D. (AAI '10)
Postdoctoral Fellow
Cornell University
Project: Itk signals regulating regulatory T cell stability
Photo: (l-r) Avery August and Weishan Huang



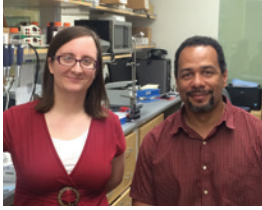
Rance Berg, Ph.D. (AAI '05)
Associate Professor
Alexandra Witter (AAI '14)
Graduate Student
University of North Texas Health Science Center
Project: Effects of ecSOD on neutrophil maturation and function
Photo: (l-r) Alexandra Witter and Rance Berg



Artem Barski, Ph.D. (AAI '12)
Assistant Professor
Masashi Yukawa, Ph.D. (AAI '15)
Postdoctoral Fellow
Cincinnati Children's Hospital
Project: Role of CD28 co-stimulatory signal in the formation of the effector/memory T cell epigenome
Photo: (l-r) Masashi Yukawa and Artem Barski



Maria Bettini, Ph.D. (AAI '13)
Assistant Professor
Ivan Shevchenko, Ph.D. (AAI '15)
Postdoctoral Fellow
Baylor College of Medicine
Project: Protective beta cell antigen-reactive Tregs possess distinct T cell receptors with defined characteristics
Photo: (l-r) Maria Bettini and Ivan Shevchenko



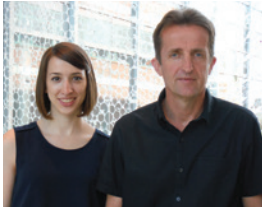
Robert Binder, Ph.D. (AAI '02)
Associate Professor
Abigail Sedlacek, Ph.D. (AAI '09)
Postdoctoral Fellow
University of Pittsburgh
Project: The role of NK cells in the gp-96-mediated anti-tumor immune response

Photo: (l-r) Abigail Sedlacek and Robert Binder



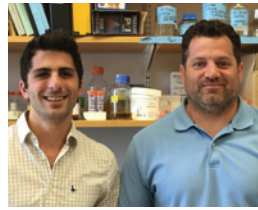
Helene Decaluwe, M.D., Ph.D. (AAI '14)
Assistant Professor
Jean-Christophe Beltra (AAI '14)
Graduate Student
CHU Sainte-Justine
Project: Role of IL-2 and IL-15 in the differentiation and exhaustion of CD8⁺ T cells in chronic viral infection

Photo: (l-r) Jean-Christophe Beltra and Helene Decaluwe



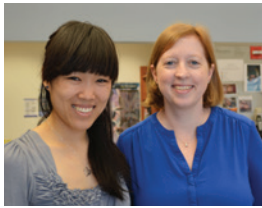
Laurent Brossay, Ph.D. (AAI '99)
Professor & Chair
Courtney Anderson (AAI '13)
Graduate Student
Brown University
Project: The contribution of non-classical CD8⁺ T cells to anti-viral immune responses

Photo: (l-r) Courtney Anderson and Laurent Brossay



Charles Dimitroff, Ph.D. (AAI '06)
Associate Professor
Nicholas Giovannone (AAI '14)
Graduate Student
Brigham and Women's Hospital
Project: Identifying glycan regulators of germinal center immune responses

Photo: (l-r) Nicholas Giovannone and Charles Dimitroff



Megan Cooper, M.D., Ph.D. (AAI '12)
Assistant Professor
Annelise Mah (AAI '15)
Graduate Student
Washington University
Project: Metabolic requirements for NK cell activation during viral infection

Photo: (l-r) Annelise Mah and Megan Cooper



Mihaela Gadjeva, Ph.D. (AAI '09)
Assistant Professor
Abirami Kugadas, D.V.M., Ph.D. (AAI '15)
Postdoctoral Fellow
Brigham and Women's Hospital
Project: Role of the microbiota in modulating eye immunity and dry eye disease

Photo: (l-r) Abirami Kugadas and Mihaela Gadjeva



Randy Cron, M.D., Ph.D. (AAI '00)
Professor
Tanya Robinson (AAI '14)
Graduate Student
Children's Hospital of Alabama
Project: The effect of regulatory CD4⁺ T cells on HIV-1 infection of polarized M1 and M2 macrophages

Photo: (l-r) Tanya Robinson and Randy Cron



Helen Goodridge, Ph.D. (AAI '09)
Assistant Professor
Alberto Yanez Boyer, Ph.D. (AAI '15)
Postdoctoral Fellow
Cedars-Sinai Medical Center
Project: Monocyte production during steady-state and emergency myelopoiesis

Photo: (l-r) Helen Goodridge and Alberto Yanez Boyer



Joanna Davies, Ph.D. (AAI '09)
Professor & CEO
Aditi Narsale, Ph.D. (AAI '15)
Postdoctoral Fellow
San Diego Biomedical Research Institute
Project: Role of CD44^{low} precursor cells in muscle wasting

Photo: (l-r) Joanna Davies and Aditi Narsale



Antonieta Guerrero-Plata, Ph.D. (AAI '07), Associate Professor
Rocio Banos-Lara, Ph.D. (AAI '14)
Postdoctoral Fellow
Louisiana State University
Project: The role of the mucin 19 response in respiratory viral infections

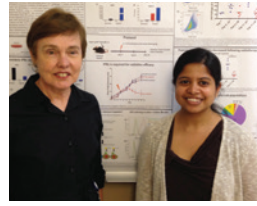
Photo: (l-r) Rocio Banos-Lara and Antonieta Guerrero-Plata



Michelle Hermiston, M.D., Ph.D. (AAI '09), Associate Professor
Melissa Ruck (AAI '14)
 Graduate Student

University of California, San Francisco
Project: Cooperative gene interactions in innate immunity leading to systemic lupus erythematosus

Photo: (l-r) Melissa Ruck and Michelle Hermiston



Edith Lord, Ph.D. (AAI '78), Professor & Dean of Graduate Education
Aditi Murthy (AAI '15)
 Graduate Student

University of Rochester
Project: Impact of hypoxia on IFN-gamma-dependent responses: implications for radiotherapy and anti-tumor immunity

Photo: (l-r) Edith Lord and Aditi Murthy



Jutta Horejs-Hoeck, Ph.D. (AAI '12)
 Associate Professor
Theresa Neuper (AAI '15)
 Graduate Student

University of Salzburg
Project: NOD1 counteracts anti-inflammatory effects mediated by IL-10

Photo: (l-r) Jutta Horejs-Hoeck and Theresa Neuper



Mary Markiewicz, Ph.D. (AAI '11)
 Assistant Professor
Neekun Sharma, D.V.M., Ph.D. (AAI '15)
 Postdoctoral Fellow

University of Kansas
Project: Understanding the role of NKG2D signaling in autoimmune diabetes

Photo: (l-r) Neekun Sharma and Mary Markiewicz



Liselotte Jensen, Ph.D. (AAI '07)
 Assistant Professor
Katelynn Milora (AAI '15)
 Graduate Student

Temple University
Project: IL-36 beta promotes protective immunity in the skin

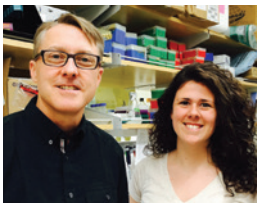
Photo: (l-r) Liselotte Jensen and Katelynn Milora



Qiana Matthews, Ph.D. (AAI '14)
 Assistant Professor
Anitra Farrow, Ph.D. (AAI '14)
 Postdoctoral Fellow

University of Alabama
Project: Evaluation of *Trypanosoma cruzi* vaccine vectors in in vivo systems

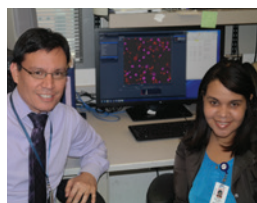
Photo: (l-r) Anitra Farrow and Qiana Matthews



Lawrence Kane, Ph.D. (AAI '03)
 Associate Professor
Lyndsay Avery (AAI '14)
 Graduate Student

University of Pittsburgh
Project: Defining the role of Tim-3 in T cell exhaustion

Photo: (l-r) Lawrence Kane and Lyndsay Avery



Daniel Mendoza, M.D. (AAI '12)
 Assistant Professor
Indhira De La Rosa, Ph.D. (AAI '15)
 Postdoctoral Fellow

Baylor College of Medicine
Project: Role of protease inhibitors in impairment of immune responses to and efficacy of pneumococcal vaccines

Photo: (l-r) Daniel Mendoza and Indhira De La Rosa



Kimberly Klonowski, Ph.D. (AAI '06)
 Associate Professor
David Rose (AAI '14)
 Graduate Student

University of Georgia
Project: Differential activation of NK cells via Nkp46 to improve anti-influenza CD8⁺ T cell immunity

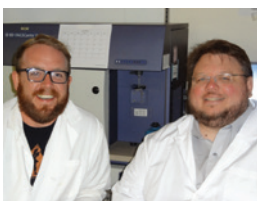
Photo: (l-r) David Rose and Kimberly Klonowski



Michal Olszewski, D.V.M., Ph.D. (AAI '12), Assistant Professor
Alison Eastman (AAI '15)
 Graduate Student

University of Michigan
Project: Functional and epigenetic mechanisms of TNF-alpha-induced DCs in *Cryptococcus neoformans* infection

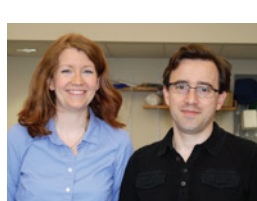
Photo: (l-r) Michal Olszewski and Alison Eastman



Kevin Legge, Ph.D. (AAI '05)
 Associate Professor
Zeb Zacharias (AAI '15)
 Graduate Student

University of Iowa
Project: Regulation of the CD8⁺ T cell response to lethal influenza A virus infection

Photo: (l-r) Zeb Zacharias and Kevin Legge



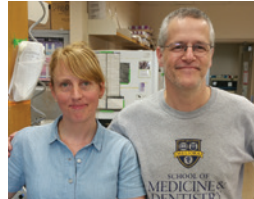
Joao Pereira, D.O., Ph.D. (AAI '12)
 Assistant Professor
Erin Nevius, Ph.D. (AAI '15)
 Postdoctoral Fellow

Yale University
Project: EB12 function in bone marrow resident human osteoclast precursors

Photo: (l-r) Erin Nevius and Joao Pereira



Adrian Piliponsky, Ph.D. (AAI '11)
Assistant Professor
Nicholas Shubin, Ph.D. (AAI '15)
Postdoctoral Fellow
Seattle Children's Research Institute
Project: The role of mast cell-thymic stromal lymphopoietin interactions in the development of inflammation and injury during acute lung injury
Photo: (l-r) Adrian Piliponsky and Nicholas Shubin



Jacques Robert, Ph.D. (AAI '98)
Associate Professor
Eva-Stina Edholm, Ph.D. (AAI '15)
Postdoctoral Fellow
University of Rochester
Project: Nonclassical MHC-dependent invariant T cell subsets are evolutionarily conserved and prominent in amphibian *Xenopus laevis* tadpoles
Photo: (l-r) Eva-Stina Edholm and Jacques Robert



Joseph Qualls, Ph.D. (AAI '13)
Assistant Professor
Shannon Rapovy (AAI '14)
Graduate Student
Cincinnati Children's Hospital
Project: Impact of L-arginine biosynthesis from L-citrulline on anti-mycobacterial T cell function
Photo: (l-r) Shannon Rapovy and Joseph Qualls



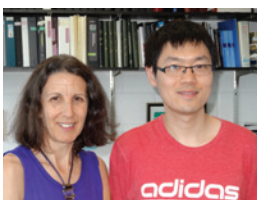
Roxana Rojas, M.D., Ph.D. (AAI '15)
Assistant Professor
Ahmad Faisal Karim, Ph.D. (AAI '15)
Postdoctoral Fellow
Case Western Reserve University
Project: Role of T cell TLR2 expression in CD4⁺ T cell differentiation and function in *Mycobacterium tuberculosis* infection
Photo: (l-r) Roxana Rojas and Ahmad Faisal Karim



Parameswaran Ramakrishnan, Ph.D. (AAI '15), Assistant Professor
Jeffrey Tomalka, Ph.D. (AAI '15)
Postdoctoral Fellow
Case Western Reserve University
Project: The role of c-Rel O-GlcNAc glycosylation in the regulation of CD4⁺ T cell function and autoimmunity
Photo: (l-r) Parameswaran Ramakrishnan and Jeffrey Tomalka



Alanna Ruddell, Ph.D. (AAI '11)
Research Associate Professor
Sheila Ganti, Ph.D. (AAI '15)
Postdoctoral Fellow
University of Washington
Project: Lymphocyte regulation of lymph node immune responses
Photo: (l-r) Sheila Ganti and Alanna Ruddell



Mercedes Rincon, Ph.D. (AAI '03)
Professor
Rui Yang (AAI '13), Graduate Student
University of Vermont
Project: The regulation of CD8⁺ T cell function by IL-6
Photo: (l-r) Mercedes Rincon and Rui Yang



Scheherazade Sadegh-Nasseri, Ph.D. (AAI '85), Professor
Nianbin Song (AAI '11)
Graduate Student
Johns Hopkins University
Project: Genetic regulation of memory CD4⁺ T cell homeostasis and longevity
Photo: (l-r) Scheherazade Sadegh-Nasseri and Nianbin Song



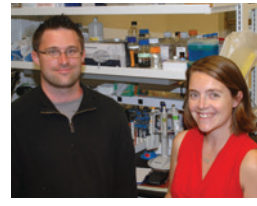
Susan Rittling, Ph.D. (AAI '13)
Senior Research Investigator
Rani Singh, Ph.D. (AAI '15)
Graduate Student
The Forsyth Institute
Project: The role of alphaV integrin and CXCR2 interactions in osteopontin-induced neutrophil migration
Photo: (l-r) Rani Singh and Susan Rittling



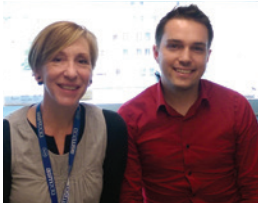
John-Demian Sauer, Ph.D. (AAI '12)
Assistant Professor
Erin Theisen (AAI '15)
Graduate Student
University of Wisconsin
Project: Inflammation associated with *Listeria monocytogenes*-induced cell death modulates cell-mediated immunity
Photo: (l-r) John-Demian Sauer and Erin Theisen



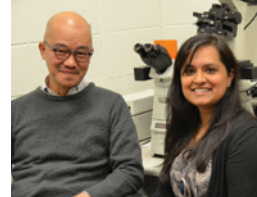
Heth Turnquist, Ph.D. (AAI '11)
Assistant Professor
Jeremy Lott, Ph.D. (AAI '15)
Postdoctoral Fellow
University of Pittsburgh
Project: Establishing targetable mechanisms underlying IL-33-induced dendritic cell generation of Th2 responses
Photo: (l-r) Jeremy Lott and Heth Turnquist



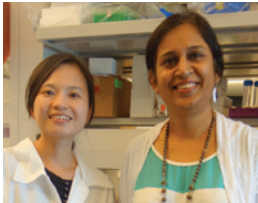
Emma Wilson, Ph.D. (AAI '10)
Associate Professor
Tyler Landrith (AAI '14)
Graduate Student
University of California, Riverside
Project: Dendritic cell roles in maintenance of phenotypic tissue resident memory T cells in chronic toxoplasmosis
Photo: (l-r) Tyler Landrith and Emma Wilson



Linda van Dyk, Ph.D. (AAI '03)
Associate Professor
Brian Niemeyer (AAI '15)
Graduate Student
University of Colorado
Project: Viral cyclin regulation of expression of viral latency genes and importance in B cell responses to viruses/tumors
Photo: (l-r) Linda van Dyk and Brian Niemeyer



George Yap, Ph.D. (AAI '01)
Associate Professor
Suhagi Shah, Ph.D. (AAI '11)
Postdoctoral Fellow
Rutgers University
Project: Regulation of late-stage effector CD8⁺ T cell differentiation by IL-12 and innate cells in the red pulp/marginal zone
Photo: (l-r) George Yap and Suhagi Shah



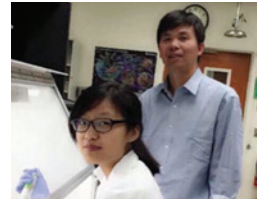
Saguna Verma, Ph.D. (AAI '13)
Associate Professor
Chih-Yun Lai, Ph.D. (AAI '15)
Postdoctoral Fellow
University of Hawaii
Project: Immune modulation of flaviviruses by NLR family member protein NLRP5
Photo: (l-r) Chih-Yun Lai and Saguna Verma



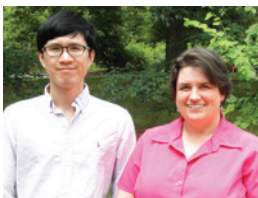
Jeffrey Yoder, Ph.D. (AAI '02)
Associate Professor
Debra Tokarz, D.V.M. (AAI '15)
Postdoctoral Fellow
North Carolina State University
Project: TRIM9 as an intracellular mediator in macrophage chemotaxis
Photo: (l-r) Jeffrey Yoder and Debra Tokarz



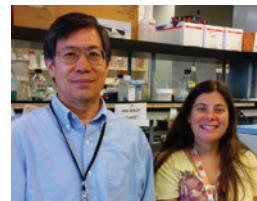
Matam Vijay-Kumar, Ph.D. (AAI '12)
Assistant Professor
Vishal Singh, Ph.D. (AAI '14)
Postdoctoral Fellow
Pennsylvania State University
Project: Interplay between dietary fiber, the gut microbiota, and inflammation in the development of hepatocellular carcinoma
Photo: (l-r) Vishal Singh and Matam Vijay-Kumar



Bin Zhang, M.D., Ph.D. (AAI '04)
Associate Professor
Siqu Chen (AAI '14)
Graduate Student
Northwestern University
Project: Identification of a novel resistance mechanism for agonistic costimulatory therapy
Photo: (l-r) Siqu Chen and Bin Zhang



Wendy Watford Ph.D. (AAI '10)
Assistant Professor
Xin Li, D.V.M. (AAI '14)
Graduate Student
University of Georgia
Project: Regulation of Treg development and immunosuppressive properties by the serine-threonine kinase TPL2
Photo: (l-r) Xin Li and Wendy Watford



Xian Zhang, D.V.M., Ph.D. (AAI '07)
Associate Professor
Mara Lennard Richard, Ph.D. (AAI '12)
Postdoctoral Fellow
Medical University of South Carolina
Project: Novel molecular mechanisms and co-factors of Fli-1 in inflammatory diseases
Photo: (l-r) Xian Zhang and Mara Lennard Richard

The American Association of Immunologists annually honors the research achievements and professional promise of over 1,000 scientists through fellowships, career awards, and travel grants. To learn about all AAI awards and grants, visit www.aai.org/Awards.

AAI Congratulates 2015 Summer Cycle Travel for Techniques Award Recipients

Four members were selected as recipients of Travel for Techniques Awards for the summer application cycle (deadline: June 15, 2015). 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. AAI now invites applications for the fall cycle of the program, which will open August 15.

The 2015 Summer Cycle Travel for Techniques Award recipients are:



Rachel Gerstein, Ph.D. (AAI '05)

Associate Professor
University of Massachusetts Medical School

By visiting Eugene Oltz's (AAI '95) laboratory at Washington University Medical School in St. Louis, Gerstein will learn to apply Next Generation Sequencing approaches, including RNA-

seq and FAIRE-seq, to her B cell lymphoma studies. She plans to employ this technique to understand the genetics of diffuse large B cell lymphoma and Burkitt's lymphoma.



Conchi Mora, Ph.D. (AAI '07)

Associate Professor
University of Lleida

Mora will travel to the laboratory of Lluís Fajas at the University of Lausanne in Switzerland to receive training in kinome analysis and profiling. Mora will use these skills to further explore the role of cyclin D3 in

beta cells from diabetes-prone mice.



Sung Ouk Kim, Ph.D. (AAI '05)

Associate Professor
University of Western Ontario

Kim plans to visit the laboratory of Zhijun Duan at the University of Washington in Seattle to learn targeted DNase Hi-C, a technique used to characterize chromatin organization. He will utilize this method to analyze

the chromatin structure associated with proinflammatory cytokine enhancers following LPS stimulation.



Aaron Neumann, Ph.D. (AAI '14)

Assistant Professor
University of New Mexico School of Medicine

The laboratory of David Williams at East Tennessee State University will train Neumann in the methods used for purification and physicochemical characterization of fungal cell wall

polysaccharides. Neumann will use this expertise to study Dectin-1 engagement of yeast glucan nanostructures.

AAI Career Development Awards
Funding to Support Your Research

AAI invites applications for the Fall 2015 AAI Travel for Techniques Program cycle. The deadline for submissions is October 15, 2015. To apply, visit www.aai.org/Careers/TfT.html.

AAI TRAVEL GRANTS FOR THE 4TH EUROPEAN CONGRESS OF IMMUNOLOGY

AAI is pleased to offer travel grants to trainees, early-career faculty, and mid-career faculty to attend the 4th European Congress of Immunology (ECI), September 6-9, 2015, in Vienna, Austria. Recipients, listed below, are AAI members in good standing, each an author on an abstract submitted to the ECI. They will be reimbursed up to \$2,000 US for their travel expenses to the meeting.

Nicole V. Acuff

Graduate Student
University of Georgia

Ali Ahmad, Ph.D.

Associate Professor
University of Montreal

Alexey Y. Berezhnoy, D.V.M., Ph.D.

Assistant Professor
University of Miami

Lisa A. Borghesi, Ph.D.

Associate Professor
University of Pittsburgh School of Medicine

Marlene Bouvier, Ph.D.

Associate Professor
University of Illinois at Chicago

Beckley K. Davis, Ph.D.

Assistant Professor
Franklin and Marshall College

Claudia U. Duerr, Dr. rer. Nat.

Postdoctoral Researcher
McGill University

Timothy Erick

Graduate Student
Brown University

Nadeem Fazal, M.D., Ph.D.

Associate Professor
Chicago State University

Vitaly V. Ganusov, Ph.D.

Assistant Professor
University of Tennessee

Keith E. Garrison, Ph.D.

Associate Professor
St. Mary's College of California

Mayya Geha, M.D.

Instructor in Neonatology
Beth Israel Deaconess Medical Center

Nardhy Gomez-Lopez, Ph.D.

Assistant Professor
Wayne State University School of Medicine

**Mireia Guerau-De-Arellano,
Pharm.D., Ph.D.**

Assistant Professor
Ohio State University

Boris Hartmann, Ph.D.

Assistant Professor
Icahn School of Medicine
at Mount Sinai

Ping-Chih Ho, Ph.D.

Postdoctoral Fellow
Yale University

Sunil K. Joshi, D.V.M., Ph.D.

Assistant Professor
Old Dominion University

Sung Kim, Ph.D.

Associate Professor
University of Western Ontario

Kimberly D. Klonowski, Ph.D.

Associate Professor
University of Georgia

Chantal Kuhn, Ph.D.

Postdoctoral Fellow
Brigham and Women's Hospital

Girdhari Lal, Ph.D.

Scientist 'D'
National Centre for Cell Science

Quanzhen Li, Ph.D.

Associate Professor
University of Texas Southwestern
Medical Center

Wanli Liu, Ph.D.

Assistant Professor
Tsinghua University

Yuan Liu, M.D., Ph.D.

Professor
Georgia State University

Marcela F. Lopes, Ph.D.

Associate Professor
Federal University of Rio de Janeiro

Manoj K. Mishra, Ph.D.

Associate Professor
Alabama State University

AAI TRAVEL GRANTS FOR THE 4TH EUROPEAN CONGRESS OF IMMUNOLOGY (CONT.)

Bolanle Musa, Ph.D.

Associate Professor
Ahmadu Bello University

Mahyar A. Nouri-Shirazi, D.V.M., Ph.D.

Associate Professor
Florida Atlantic University

Roza I. Nurieva, Ph.D.

Assistant Professor
MD Anderson Cancer Center

Natasa Obermajer, Ph.D.

Research Instructor
University of Pittsburgh

Rodrigo Pacheco, Ph.D.

Associate Investigator
Fundación Ciencia & Vida

Deborah Palliser, Ph.D.

Associate Professor
Albert Einstein College of Medicine

Joseph R. Podojil, Ph.D.

Research Assistant Professor
Northwestern University

Rachel Resop

Postdoctoral Research Fellow
UCLA

Buka Samten, M.D.

Associate Professor
University of Texas Health
Science Center, Tyler

JianRong Sheng, Ph.D.

Assistant Professor
University of Chicago

Mythily Srinivasan, Ph.D.

Associate Professor
Indiana University School of Dentistry

John Stambas, Ph.D.

Associate Professor
Deakin University

Mark A. Travis, Ph.D.

Lecturer
University of Manchester

Jieru Wang, Ph.D.

Assistant Professor
University of Pittsburgh

Katelynn Wilton

Graduate Student
Mayo Clinic

Mei-Ling Yang, Ph.D.,

Associate Research Scientist
Yale University

Mingtao Zeng, Ph.D.

Associate Professor
Texas Tech University Health
Sciences Center

Jian Zhang, M.D.

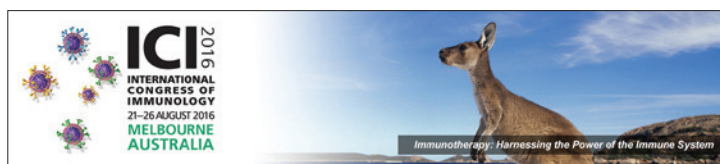
Associate Professor
Ohio State University

AAI to Offer Members \$1 Million in Travel Grants for 16th International Congress of Immunology in Australia

AAI is pleased to announce that it will award up to \$1,000,000 in travel grants to AAI members for the

16th International Congress of Immunology (16th ICI), to be held August 21-26, 2016, in Melbourne, Australia.

Grant application will be open to investigators of all career stages. To be eligible, an applicant must be an AAI Trainee, Associate, or Regular member in



good standing for 2015 and 2016, and an author on an abstract submitted to the 16th ICI. Preference will be

given to applicants with no more than \$250,000 in total research funding from all sources (excluding PI salary).

Complete eligibility and application instructions will be posted to the AAI website in January 2016.

Visit the 16th ICI website at <http://ici2016.org>.



AAI Outreach Program Update

The AAI Outreach Program provides career development opportunities for young investigators by supporting oral and poster presentation awards at member-organized immunology meetings. The program, now in its fifth year, provided sponsorship at two annual meetings this spring: the Translational Research Cancer Centers Consortium and the American Physician Scientists Association.

Translational Research Cancer Centers Consortium (TRCCC)

The annual TRCCC meeting took place February 18–20 at the Seven Springs Resort in Seven Springs, PA. The meeting was organized in part by Ali Ashkar (AAI '04) and Yasmin Thanavala (AAI '14) and featured sessions focused on tumor immunity and immunotherapeutic strategies to combat cancer. A highlight of the meeting was the “Meet the Patient” segment that included an appearance by a patient whose cancer had been successfully treated using immunotherapeutic strategies. AAI members Dario Vignali (AAI '98) and Carl June (AAI '87) delivered the opening and closing keynote lectures, respectively.

For the second consecutive year, AAI provided AAI Young Investigator Awards for oral presentations deemed outstanding by the organizing committee in 12 cancer-related subtopics, including cell therapies, tumor

microenvironment, and viral/vaccine therapies. The 12 oral presentation awardees were Roddy O'Connor and Marco Ruella (University of Pennsylvania); Heather Gibson, Joyce Reyes, and Jesse Veenstra (Wayne State University); Arya Afsahi and Heather VanSeggelen (McMaster University); Craig Brackett, David Hoekstra, and Colleen Netherby (Roswell Park Cancer Institute); Kaitlin Keenan (Ohio State University); and William J. Turbitt, Jr. (Pennsylvania State University). Three poster presentation awards were also given to Yeshavanth Kaumar Banasavadi-Siddegowda and Thomas Mace (Ohio State University) and Marco Ruella (University of Pennsylvania).

American Physician Scientists Association (APSA)

Over 350 trainees gathered at the Fairmont Chicago, Millennium Park, on April 24–26 for the 11th annual APSA meeting. The event, organized in part by Daniel Camacho (AAI '14), included clinically and therapeutically focused sessions relevant to physician scientists, such as “Understanding Disease Mechanisms to Improve Human Health” and “Patents as Proxies: Should Inventions be Used as an Outcome Metric in Medical Research?”

The APSA meeting also provided opportunities for professional development for young physician scientists and trainees, including a panel that discussed technological innovations in biomedicine and a forum featuring NIH Director Francis Collins that dealt with policies governing entrepreneurship in biomedical research.

As in 2014, AAI provided five AAI Young Investigator Awards for outstanding poster presentations. The APSA organizing committee selected awardees from among the immunology poster abstracts submitted. The honorees were Shannon Carty (University of Pennsylvania), Jordan Jastrab (New York University), Steven Scoville (Ohio State University), Blair Stocks (Vanderbilt University), and Zegou Zhao (Memorial Sloan Kettering Cancer Center).



AAI Young Investigator Awardees at APSA (l-r) Shannon Carty, Steven Scoville, Zegou Zhou, Jordon Jastrab, Blair Stocks

IMMUNOLOGY 2015™ in New Orleans, Louisiana, featured an exhibit chronicling notable developments in Louisiana's medical and public health history. Below is an expanded version of the text accompanying the exhibit.

Immunology at the Mouth of the Mighty Mississippi

Diseases and Institutions that Shaped Research in Louisiana

by John Emrich

Louisiana has endured centuries of epidemics, outbreaks, and endemic diseases, chiefly in its most populous city, New Orleans. The city is known worldwide for its revelry and rich culture—the pentimento for the various flags that have flown over her since the French first began colonizing the region in the late seventeenth century. In the early nineteenth century, the city became the third largest city in the United States and one of the wealthiest because its bustling port at the mouth of the Mississippi River was the intersection of trade between the nation's interior and the Caribbean, South America, Europe, and beyond. Here, we highlight diseases and institutions that have shaped the medical, public health, and social history of the state.

Diseases

Louisiana, because of its subtropical climate and home, near the mouth of the “Mighty Mississippi,” to the premier southeastern port in the United States, has been the site of many lethal and chronic communicable diseases, including yellow fever, malaria, hookworm, Hansen's disease, and bubonic plague. The presence of these diseases has channeled the current of biomedical research in the state.



Yellow fever patient in hospital
*Images from the History of Medicine,
National Library of Medicine*

deaths between 1817 and 1905.¹ An epidemic in 1878 began in the port of New Orleans and spread up the Mississippi River to the American Midwest, infecting more than 110,000 and killing at least 20,000.² An occurrence in 1905 marked the last yellow fever epidemic in the United States. By this time, the transmission cycle was understood, and public health campaigns, including mosquito prevention and eradication, limited spread of the disease before the first successful vaccine was developed in the 1930s.

Epidemics and Outbreaks

Yellow Fever. An acute infection caused by an RNA virus spread, primarily by the female *Aedes aegypti* mosquito, yellow fever was one of Louisiana's deadliest diseases before the early twentieth century. The mosquitoes carrying the disease typically hitchhiked to Louisiana aboard trading ships from their native Caribbean habitat. Mortality rates climbed as high as 60 percent during some epidemics, and in the New Orleans region, the disease was responsible for more than 41,000



Plague epidemic in New Orleans,
1913–1914
*Images from the History of Medicine,
National Library of Medicine*

Bubonic Plague. In late June 1914, a bubonic plague outbreak in New Orleans was caused by rats from a cargo ship at the New Orleans Stuyvesant Docks.³ In August, at the height of the outbreak, cases were reported at a rate of one every three days. A coordinated response by health officials, led by the U.S. Public Health Service, suppressed the outbreak by year's end through a combination of medical intervention and rat-reduction programs, which included “rat-proofing,” or destroying, hundreds of buildings

1. Infectious Disease Epidemiology Section, Louisiana Office of Public Health, “Yellow Fever,” *Epidemiology Annual Report*, 1934, http://www.dhh.state.la.us/assets/oph/Center-PHCH/Center-CH/infectious-epi/Annuals/LaIDAAnnual_YellowFever.pdf (accessed June 22, 2015).
2. “Louisiana Medical Saga: The New Orleans Trilogy,” Public Health Service Hospitals Historical Collection, 1895–1982, Box 8, Folder 7, National Library of Medicine, Bethesda, MD.
3. “Plague in New Orleans,” *Public Health Report* 28, no. 29 (1914): 1809.

and enacting new housing codes. The 1914–1915 outbreak resulted in 31 reported cases, of which 10 were fatal. New Orleans continued to have infections until the city was declared free of the disease in the late 1920s.⁴

Endemic Diseases

Malaria. Although malaria never reached epidemic levels, it was a constant presence in the state, with a peak rate of 57 cases per 100,000 in 1944.⁵ In 1947, the National Malaria Eradication Program began in the United States, focusing on 13 southeastern states. The program successfully eradicated the disease in the United States in 1951 through the reduction of mosquito-breeding sites and the application of insecticides.⁶ An important breakthrough in malaria research was made at Tulane University School of Medicine in 1911, when Charles C. Bass (AAI '16) successfully cultivated plasmodia in vitro, using human blood.⁷ Bass's technique allowed other researchers to better understand and devise new treatments for the disease.



“Malaria in the United States”

Images from the History of Medicine, National Library of Medicine

Hookworm Infections. Bass was also responsible for calling attention to the impact of hookworm infections in Louisiana, especially in rural children with continuous infection. He recognized growth and developmental problems resulting from the infected children's loss of iron and protein.⁸ Through a series of studies in 1910 at Tulane, Bass,

who was previously a country doctor, determined that the high rate of infection in rural communities was attributable to the geology of central and northern Louisiana, specifically the sandy soil; poor access to privies; and the “habit among children...of going barefoot.”⁹ That same year, a Rockefeller Foundation report found that nearly 40 percent of the population in the South was infected with hookworms, validating Bass's assertions. Within a few years, a public health and education campaign eliminated these occurrences.¹⁰



Head of the hookworm *Necator americanus*

Centers for Disease Control and Prevention/ Dr. Mae Melvin

Hansen's Disease (Leprosy). This disease was well established in Louisiana, particularly in southern Louisiana. By the late 1880s, high incidence rates (4.5/100,000) in the state, especially in South “French” Louisiana, led to the creation of the Louisiana Leper Home in Carville to treat patients and research the disease. Infection rates continued to rise until the late 1920s (12/100,000), with the highest rates still observed in French Louisiana. Antibiotic treatments beginning in the 1940s successfully brought incidence in the state to near zero by the 1970s.¹¹



Hansen's disease research

Images from the History of Medicine, National Library of Medicine

- Infectious Disease Epidemiology Section, Louisiana Office of Public Health, “Plague,” *Epidemiology Annual Report*, 2014, http://www.dhh.state.la.us/assets/oph/Center-PHCH/Center-CH/infectious-epi/Annuals/Plague_LaIDAnnual.pdf (accessed June 22, 2015).
- Infectious Disease Epidemiology Section, Louisiana Office of Public Health, “Malaria,” *Epidemiology Annual Report*, 2013, http://www.dhh.state.la.us/assets/oph/Center-PHCH/Center-CH/infectious-epi/Annuals/Malaria_LaIDAnnual.pdf (accessed June 22, 2015).
- Infectious Disease Epidemiology Section, Louisiana Office of Public Health, “Malaria,”
- For more information about Charles C. Bass, see “Country Doctor, Pioneering Parasitologist, and the Father of Preventative Dentistry: Charles C. Bass, M.D. (1875–1975),” *AAI Newsletter*, June 2015, 20–23; 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.
- 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.
- George Dock and Charles C. Bass, *Hookworm Disease: Etiology, Pathology, Diagnosis, Prognosis, Prophylaxis, and Treatment* (St. Louis, MO: C. V. Mosby Company, 1910).
- “Eradicating Hookworm,” The Rockefeller Foundation, <http://rockefeller100.org/exhibits/show/health/eradicating-hookworm> (accessed on June 9, 2015).
- Infectious Disease Epidemiology Section, Louisiana Office of Public Health, “Leprosy (Hansen's Disease),” *Epidemiology Annual Report*, 2008, http://www.dhh.state.la.us/assets/oph/Center-PHCH/Center-CH/infectious-epi/Annuals/LaIDAnnual_Leprosy.pdf (accessed June 22, 2015).

Institutions

Research institutions and medical schools in Louisiana were founded to address the public's vulnerability to a rare confluence of public health threats. Here, we highlight six of the oldest institutions. All have contributed to the growth of immunology research in the state.

Hospitals and Public Health Institutions

Recognizing the need for a public hospital in New Orleans to serve the poor, a French ship builder residing in the city bequeathed money for what would become the city's venerable **Charity Hospital**. The hospital was founded on May 10, 1739, and operated constantly until 2005, when Hurricane Katrina forced its closure. At that time, Charity Hospital was the second-oldest, continuously operating public hospital in the United States.¹ Charity also served as a teaching hospital for Tulane University and Louisiana State University (LSU) medical schools, where many AAI members held appointments.



Charity Hospital, c. 1939
National Archives and Records Administration

The **United States Marine Hospital** [later named the U.S. Public Health Service (USPHS) Hospital] in New Orleans was founded in 1801, three years after the creation of the U.S. Marine Hospital Service. The initial mission of these entities was to provide medical care to ill and disabled seamen, including those in the U.S. Merchant Marine and U.S. Coast Guard. The mission of the hospital and officers



U.S. Marine Hospital/U.S. Public Health Service Hospital, New Orleans, LA, ca. 1950

Images from the History of Medicine, National Library of Medicine

quickly expanded to assist the city as a leader in clinical research and public health, leading campaigns to control epidemics and outbreaks, especially for yellow fever and bubonic plague. The hospital was closed in 1981, following severe cuts in federal funding.²

The state opened the Louisiana Leper Home in Carville in 1894 and two years later, entered into a contract with the Daughters of Charity of St. Joseph, located in Emmitsburg, Maryland, to care for and treat its patients.³ In 1921, the USPHS took operational control of the institution and established it as the **National Leprosarium**, in accordance with a 1917 federal law mandating the founding of a hospital for leprosy patients.⁴ In addition to treating patients, the facility was updated to become a center for research into Hansen's disease (leprosy) transmission and treatment. Researchers at Carville demonstrated



National Leprosarium, ca. 1950

History of Medicine Division, National Library of Medicine

1. Bellevue Hospital in New York City is the oldest public hospital in the United States. It was founded March 31, 1736.
2. "Louisiana Medical Saga: The New Orleans Trilogy," Public Health Service Hospitals Historical Collection, 1895–1982, Box 8, Folder 7, National Library of Medicine, Bethesda, MD.
3. The Daughters of Charity, a society of apostolic life for women within the Catholic Church, was founded in the seventeenth century with vows of charity, poverty, obedience, and service to the poor. The state was financially responsible for the infrastructure and supplies, and the sisters, who attended to the physical, emotional, and spiritual needs of the community, received a very modest clothing stipend in lieu of a salary. When the sisters arrived at Carville, the resident physician had left—one would not return until National Leprosarium was founded—and because of budget constraints, a weekly doctor visit to Carville had to suffice. The Daughters of Charity officially ended its mission at Carville in 2006. For more information on the role of the Daughters of Charity at Carville, see Daniel Hannefin, "The Daughters of Charity at Carville: 1896–1981," *Vincentian Heritage Journal* 2, no. 1 (1981): 55–80.
4. The original, official name of the institution was United States Marine Hospital Number 66, the National Leprosarium of the United States. In 1917, a federal bill was signed into law "to provide for the care and treatment for those suffering" from Hansen's disease and prevent the spread of the disease. In 1920, the Louisiana Leper Home was selected for the new federal institution.

the efficacy of sulfa drugs (1940s)⁵ and pioneered the use of Rifampin (1970s)⁶ in treating the disease. They also developed the first animal model using armadillos (1971)⁷ for studying the disease. In 1998, the National Hansen's Disease Program was relocated to Baton Rouge, although patients were allowed to choose whether to remain at Carville, receive a lifetime medical stipend, or relocate with the program.



Alton Ochsner, ca. 1953
Images from the History of Medicine, National Library of Medicine

The Ochsner Clinic was opened in New Orleans in 1942, organized by Alton Ochsner and four other professors from Tulane. The clinic was modeled after the Mayo and Lahey Clinics, where specialists from different

disciplines collaborated to diagnose and treat serious medical problems, while also emphasizing physician education. The Ochsner was the first of its kind in the South and enjoyed such rapid success that it was expanded to include a hospital, research facilities, and academic programs. The Ochsner Medical Center remains a cutting-edge clinical and research facility that garners international acclaim.⁸

Medical Schools

Two of the state's oldest medical schools are located in New Orleans. **Tulane University School of Medicine** was founded in 1834 as the Medical College of Louisiana, with the purpose of leading "the advancement of science and the rational treatment of disease." Tulane issued Louisiana's first medical degree in 1835 and was one of two southern institutions identified as "excellently



Tulane University, c. 1900
Library of Congress Prints and Photographs Division

situated in respect to medical education" by the Flexner Report in 1910.⁹ **LSU School of Medicine** was established and opened for classes in 1931. It has expanded over the years and still includes its original building next to Charity Hospital. As the preeminent private and public medical schools in New Orleans, Tulane and LSU have been leaders in clinical and basic research for more than one-half of a century.

Today, Tulane, LSU, and Ochsner are joined by **Tulane National Primate Research Center, LSU Shreveport, Southeastern Louisiana University,** and other smaller research institutions contributing to growth of immunology research in Louisiana. ■



Louisiana State University Medical School, c. 1939
National Archives and Records Administration

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

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

5. G. H. Faget, F. A. Johansen, and H. Ross, "Sulfanilamide in the Treatment of Leprosy," *Public Health Report* 57, no. 50 (1942): 1892-99; G. H. Faget et al., "The Promin Treatment of Leprosy," *Public Health Report* 58, no. 48 (1943): 1729-41; G. H. Faget, R. C. Pogge, and F. A. Johansen, "Promizole in the Treatment of Leprosy," *Public Health Report* 61, no. 26 (1946): 957-60; "Present Status of Diasone," *Public Health Report* 61, no. 26 (1946): 960-63.

6. R. R. Jacobson and R. C. Hastings, "Rifampin-Resistant Leprosy," *Lancet* 2, no. 7998 (1976): 1304-5.

7. W. F. Kirchheimer and E. E. Storrs, "Attempts to Establish the Armadillo (*Dasypus novemcinctus* Linn.) As a Model for the Study of Leprosy. I. Report of Lepromatoid Leprosy in an Experimentally Infected Armadillo," *International Journal of Leprosy and Other Mycobacterial Diseases* 39, no. 3 (1971): 693-702.

8. For more information on the founding and history of Ochsner's, see John Wilds, *Ochsner's: An Informal History of the South's Largest Private Medical Center* (Baton Rouge: Louisiana State University Press, 1985).

9. Abraham Flexner, *Medical Education in the United State and Canada: A Report to the Carnegie Foundation for the Advancement of Teaching, Bulletin Number Four* (New York: Carnegie Foundation, 1910), 148; Vanderbilt University Medical Department (now Vanderbilt University School of Medicine) was the other southern institution identified in the Flexner Report. The Flexner Report brought national attention and scrutiny to the fact that few standards for admission and graduation existed for American medical schools. Shortly after the release of the report, medical schools were forced to raise their standards. Graduates of those schools that failed to conform to the new American Medical Association rating system, motivated by the Flexner Report, were denied medical licenses.



Highlights of 2015 AAI Business Meeting

The annual AAI Business Meeting and Awards Presentation convened this year during IMMUNOLOGY 2015™, May 8–12 in New Orleans, Louisiana. At this business session, held Saturday, May 9, from 1:00 to 2:30 PM in Room 206 of the Ernest N. Morial Convention Center, AAI leaders and staff presented the annual report on the association and *The Journal of Immunology (The JI)*. The session also featured certain 2015 award presentations and acknowledgments.

AAI Executive Director **M. Michele Hogan** called the meeting to order at 1:00 PM, welcoming all present and thanking the hundreds of member volunteers.

Dr. Hogan asked all in attendance to observe a moment of silence in memory of members whose deaths had occurred or become known during the previous year.

Hogan reported robust attendance for IMMUNOLOGY 2015™, citing 3,089 registrants from 42 countries, 1,830 abstract submissions, and 138 exhibitors. She described the rich menu of scientific sessions and lectures, social events, and career development resources available for attendees. Hogan acknowledged the many contributions of the sponsors of the 2015 meeting. Premier sponsors of IMMUNOLOGY 2015™ included BioLegend, eBioscience—an Affymetrix business, FASEB MARC, Thermo Fisher Scientific, BD Biosciences, Stemcell Technologies, Sanofi, EMD Millipore, Genentech, Dartmouth Journal Services, Sony, Kyowa Hakko Kirin California, Essen Bioscience, Bio X Cell, Henry J. Showell/Pfizer, and Wiley.

Hogan reviewed current membership demographics by category and geography. Year-end 2014 total memberships (regular, trainee, emeritus, honorary, and associate member scientists) were 7,645, down only slightly from the record 7,800 total memberships in the AAI Centennial Year of 2013. Based on scientists' residency, AAI membership remains nearly 80 percent domestic (United States) and just over 20 percent international.

Expansion of AAI Awards Programs. Hogan noted that AAI support for awards has nearly tripled since 2013, rising to more than \$2.5 million in 2015. For IMMUNOLOGY 2015™, AAI awarded more than \$670,000 in travel awards to 753 members. The largest AAI awards program, the Careers in Immunology Fellowship, providing PIs with salary support for trainee lab members, grew by 30 percent in 2015.

The AAI Travel for Techniques Program, which reimburses travel expenses of up to \$1,500 for a PI to visit

another lab to learn a technique, is on track to exceed the 12 awards disbursed in 2014. Seven awardees have been selected thus far in 2015, with two more funding cycles remaining for the year.

Hogan reported that the AAI Outreach Program continues to provide robust support for member-organized regional immunology meetings, supporting 16 domestic immunology meetings in 2014 alone. AAI has supported 350 young investigators with travel grants and awards since the program's founding in 2011.

AAI is also lending strong support for members to participate in international immunology meetings. The association will fund as many as 80 awards for a total of \$110,000 for members, along with a selected number of non-member immunologists from developing countries, to travel to the European Congress of Immunology to be held in Vienna, Austria in September 2015.

Hogan announced that AAI will also fund \$1 million to support travel for approximately 400 members to the 2016 International Congress of Immunology (ICI) in Melbourne, Australia. Invited to the podium, ICI President Jose Villadangos, Ph.D., thanked AAI for its "unprecedented generous support" of the 16th ICI and invited all present to attend.

Change to AAI Bylaws. Members in attendance were asked to consider a change to the AAI Bylaws to allow eligible trainees to hold Trainee Membership in AAI for a longer period of time than the previous bylaw allowed. The change is intended to accommodate the increased time required for science training today. Hogan explained that this change would allow full-time, matriculated students to be trainee members until they graduate. Once a trainee has received his or her terminal degree and started a postdoctoral fellowship, he or she may continue to hold trainee membership status for up to six years. The measure was approved unopposed. Additionally, the eligible voting members attending the annual AAI Business Meeting voted to approve an increase in dues to \$85 per year for postdoctoral fellow trainee members. Dues for student trainee members will remain at \$64 per year.

AAI Committee on Public Affairs (CPA) Chair Clifford Harding provided a brief summary of AAI public affairs activities. Dr. Harding reported first on the current state of the National Institutes of Health (NIH) budget. NIH received \$30.3 billion for fiscal year (FY) 2015, an increase of approximately \$240 million (less than one percent) and approximately \$300 million below the NIH funding level before sequestration.

After accounting for inflation, the purchasing power of NIH has decreased 22 percent since 2003.

Harding also provided an overview of the funding outlook for 2016. President Obama released his non-binding budget for FY 2016 in early February, requesting a \$1 billion increase (3.3 percent) for NIH. Congress subsequently passed a joint budget resolution for the first time since 2011. The congressional budget plan does not specify a budget level for NIH and other science agencies, but it does include deep cuts to federal spending over the next decade. These cuts will make it difficult to provide increases for any federal agencies, including NIH. In April, AAI submitted congressional testimony to the House and Senate subcommittees that fund NIH, requesting an appropriation of at least \$32 billion for NIH for FY 2016.

Harding reported on two AAI-endorsed bills that have the potential to increase NIH funding in FY 2016 and beyond. The Accelerating Biomedical Research Act would allow appropriators to exceed statutory spending caps to provide funding increases specifically for NIH. The bill is authored by Barbara Mikulski (D-MD) in the Senate and Rosa DeLauro (D-CT, 3rd) and Brian Higgins (D-NY-26th) in the House. Another bill, the American Cures Act, would similarly allow appropriators to exceed statutory spending caps to increase spending for NIH; however, the American Cures Act would also provide relief for the Centers for Disease Control and Prevention, the Department of Defense Health Program, and the Department of Veterans Affairs Medical and Prosthetics Program. The bill was introduced in the Senate by Richard Durbin (D-IL).

Harding also described two AAI public affairs programs: the AAI Public Policy Fellows Program (PPFP) and the AAI Public Service Award (PSA). AAI recently completed the fourth year of the PPFP, a program designed to engage junior scientists in the public policy efforts of the organization. In March, AAI held its fourth annual PPFP Capitol Hill Day, providing fellows with the opportunity to meet with two to three members of their congressional delegations and to participate in six to seven meetings throughout the course of the day. Harding recognized and congratulated the fellows selected to participate in the fifth year of the PPFP, which began on May 1, 2015.

Harding formally announced that American actor Alan Alda will receive the 2014 AAI Public Service Award “in recognition of ... his leadership in, and commitment to, advancing biomedical research by fostering better public understanding of, and appreciation for, science.” The AAI PSA is given “to individuals who have made outstanding contributions to the advocacy and support of basic biomedical and immunologic research.”

Harding concluded his remarks by urging AAI members who would like to get involved in public affairs activities to

contact AAI Director of Public Policy and Government Affairs Lauren Gross (lgross@aai.org).

AAI Director of Finance David Jackson, CPA, provided an overview of the finances of AAI and *The JI* on behalf of AAI Secretary-Treasurer Mitchell Kronenberg, who was attending his son's college graduation. Jackson reported that AAI is on very good financial footing. Operating revenues continued to exceed expenses in 2014, even with a substantial increase in travel grants for the 2014 annual meeting and the advent of the AAI Careers in Immunology Fellowship and Travel for Techniques Award programs. Jackson reviewed AAI 2014 revenues by category, noting that the largest sources of gross revenue were *The JI* (67 percent), followed by the annual meeting (18 percent). Largest categories for 2014 expenses by activity varied from previous years. The new AAI awards and fellowship programs have nearly tripled the association's education and awards program expenses, bringing that category to claim 21 percent of AAI-budgeted resources, second only to *The JI* (44 percent). With more than \$2.5 million budgeted for the AAI education and awards program in 2015, expenses for this category program now exceed expenses for the annual meeting, displacing it as the second highest budget allocation. Jackson outlined the AAI plan to award as much as \$110,000 to enable as many as 80 members to participate in the European Congress in Immunology this September in Vienna. He also noted expansion of the AAI Careers in Immunology Fellowship Program from 39 in 2014 to 45–50 fellows in 2015, with \$1.7 million budgeted.

Pamela J. Fink, Editor-in-Chief (EIC) of *The Journal of Immunology (The JI)* reported on operations and initiatives for the journal. Dr. Fink recognized the members of the AAI Publications Committee, thanked outgoing section editors, and acknowledged new editors, who would begin their service on July 1, 2015. Fink reported publishing data, noting that *The JI* ranked first in number of citations among 144 immunology journals. Fink noted that 3,045 manuscripts were submitted in 2014, and 3,229 reviewers were used. Average time from submission to initial decision continues to be narrowed. Fink cited new features of *The JI*, including the new ImmunoCast interviews with *Pillars of Immunology* commentary writers. Image forensics specialists now scrutinize manuscripts. Acceptance is contingent on the satisfactory assessment in image-manipulation screening. For X-ray protein structures, a Protein Data Bank validation report must be submitted for reviewers' access.

Fink urged all present to attend the Sunday, May 10, Publications Committee-sponsored session, “Publishing Scientific Articles: Advice and Admonition,” for guidance on presenting data most effectively, handling serious reviewer issues, and staying on the right side of the ethics divide.

The following awards were presented, with Hogan presiding:

Distinguished Service Award to Elizabeth J. Kovacs, Ph.D., Loyola University Chicago Stritch School of Medicine, for outstanding service to AAI and the immunology community as member and chair of the AAI Committee on Public Affairs 2007–2014

Pfizer-Showell Travel Award to Kenneth J. Oestreich, Ph.D., assistant professor, Virginia Tech Carilion Research Institute

Lustgarten-eBioscience Memorial Award to Xingxing Zang, M.Med., Ph.D., associate professor, Albert Einstein College of Medicine

Chambers-eBioscience Memorial Award to Andrew Zloza, M.D., Ph.D., assistant professor, Rutgers Robert Wood Johnson Medical School

Lefrancois-BioLegend Memorial Award to Taylor J. Feehley, graduate student, University of Chicago

AAI-Thermo Fisher Scientific Trainee Achievement Awards

- Aimee M. Beaulieu, Ph.D., postdoctoral fellow, Memorial Sloan Kettering Cancer Center
- Michael Jeffrey Cho, graduate student, University of Pennsylvania
- David J. DiLillo, Ph.D., postdoctoral fellow, Rockefeller University
- Lindsey E. Padgett, graduate student, University of Alabama at Birmingham
- Amy V. Paschall, graduate student, Georgia Regents University
- Pablo A. Penalzoza-MacMaster, Ph.D., postdoctoral fellow, Beth Israel Deaconess Medical Center, Harvard Medical School

The meeting was adjourned by Executive Director Hogan at 2:30 PM

AAI Invites Additions to List of Women Speakers

The AAI Committee on the Status of Women (CSOW) has revamped the format of the *List of Potential Speakers and Chairs*. The committee also announced a new process for individuals to have their names added to the list. The changes are intended to broaden the range of areas of expertise of AAI members and to make the list more accessible and accurate as a resource for enhancing opportunities for women as speakers or chairs at professional meetings.

Listings were originally limited to women serving as heads of immunological research labs, but the CSOW Speaker List is now open to women AAI members fulfilling leadership roles in non-research careers as well.



In addition to representing a broader range of leadership roles occupied by women, the list will be more accessible and more easily maintained. Individuals listed will be able to maintain their own entries as each now links to the individual's Web page.

Viewers can determine how well the profile matches their need for a woman immunologist in a particular leadership role.

Women currently listed must supply their URLs to remain on the list. To be added to the list, contact Mary Bradshaw, AAI staff liaison for the CSOW (mbradshaw@aai.org).

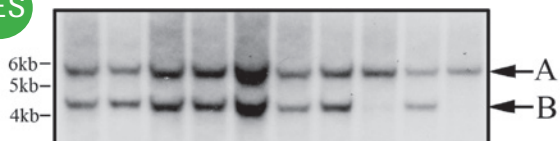
Digital Image Dos and Don'ts



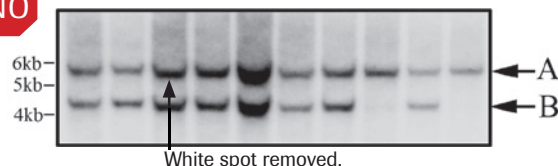
Before preparing manuscript figures, please read the Information for Authors at <http://www.jimmunol.org/site/misc/authorinstructions.xhtml#mspreparation>

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

YES

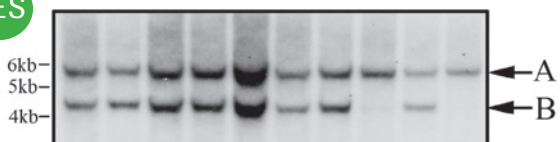


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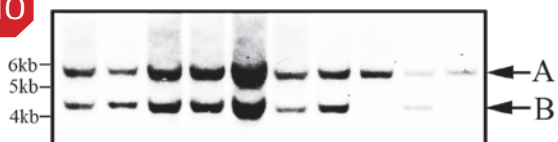


2. Do not use excessive contrast that removes background.

YES

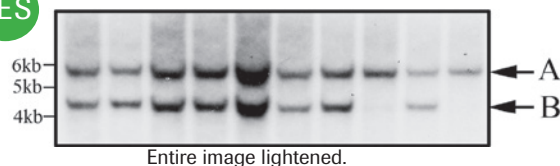


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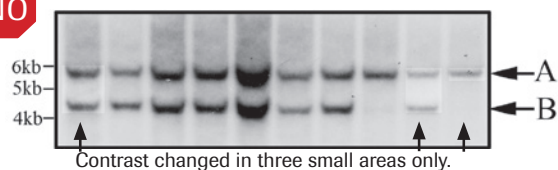


3. Make any adjustments to brightness or contrast equally across the entire image.

YES

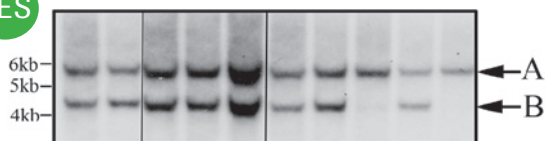


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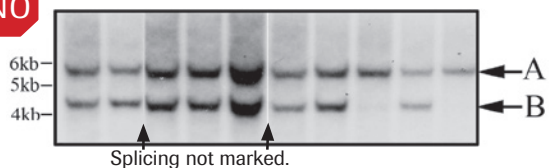


4. Indicate any splicing of data from a single experiment by contrasting (black or white) lines; state the manipulation in the legend. Images from different experiments should not be spliced to form a new single image.

YES

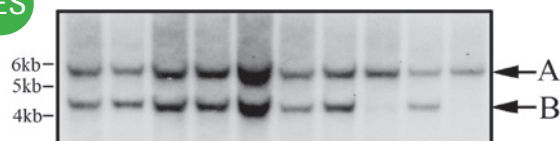


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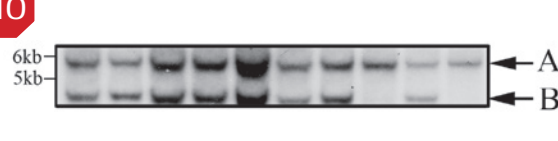


5. Crop gels and blots conservatively, retaining important bands.

YES



NO



- 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.



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 16

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.



BioArt



FASEB announces its **4th Annual *BioArt* Contest**

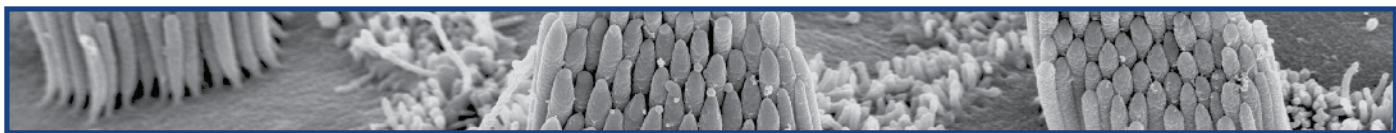
Learn More and **Submit Your Entry**

at www.faseb.org/bioart

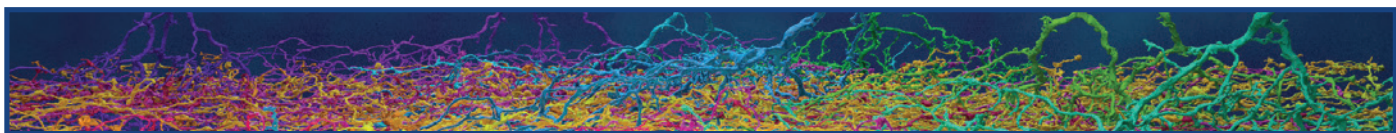
by **August 31, 2015**

***BioArt* Categories:**

- **Fluorescence or Electron Microscopy Images** (5 winners)



- **All Other Types of Images and Illustrations** (5 winners)



- **Videos** (2 winners)



*View the 2014 winners on display at the
National Institutes of Health's Visitor Center*



FASEB

Federation of American Societies
for Experimental Biology

Chronicling the AAI Legacy

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

September 1

AAAS Award for Science Diplomacy; Award for Scientific Freedom and Responsibility; Philip Hauge Abelson Award

- **Prize/Award:** As to all three awards, a prize of \$5,000, a commemorative plaque, and AAAS annual meeting registration/housing/travel to attend the prize presentation
- **Eligibility:**
 - *Award for Science Diplomacy*, in recognition of outstanding contributions to furthering science diplomacy—living individual/collaborating scientists and engineers of any nationality or citizenship who contribute valuable time away from the established career paths of research, teaching, and publishing to foster activities and develop programs that address key science questions and build important societal links
 - *Award for Scientific Freedom and Responsibility*, to honor scientists and engineers whose exemplary actions have served to foster scientific freedom and responsibility—scientists and engineers of any nationality or citizenship who have acted to protect the public's health, safety, or welfare; focused public attention on important potential impacts of science and technology on society by their responsible participation in public policy debates; or established important precedents in carrying out the social responsibilities or in defending the professional freedom of scientists and engineers
 - *Philip Hauge Abelson Award*, in recognition of outstanding contributions to advancing science in the United States—any public servant worthy of recognition for sustained, exceptional contributions to advancing science, or any scientist whose career has been distinguished by scientific achievement and other notable service to the scientific community
- **Details:** <http://www.aaas.org/page/aaas-awards>
- **Contact:** (202) 326-6400

September 2

Burroughs Wellcome Fund Career Awards at the Scientific Interface

- **Prize/Award:** To foster the early-career development of researchers transitioning from undergraduate and/or graduate work in the physical/ mathematical/ computational sciences or engineering into

postdoctoral work in the biological sciences, funding of \$500,000 over five years in support of up to two years of advanced postdoctoral training and the first three years of a faculty appointment

- **Eligibility:** U.S. and Canadian citizens or permanent residents, and U.S. temporary residents, dedicated to pursuing a career in academic research
- **Details:** www.bwfund.org/grant-programs/interfaces-science/career-awards-scientific-interface
- **Contact:** (919) 991-5116; dvought@bwfund.org

September 16

Lurie Prize in Biomedical Sciences

- **Prize/Award:** Prize of \$100,000 in recognition of outstanding, early-career achievement in biomedical research; prize may be used as the awardee chooses
- **Eligibility:** Promising young biomedical research scientists (defined as 52 years old or younger as of January 1, 2016) meriting recognition for outstanding achievement and nominated by any member of an accredited educational and/or scientific institution
- **Details:** www.fnih.org/work/lurie-prize-biomedical-sciences
- **Contact:** lurieprizeinfo@fnih.org

September 17

Robert Wood Johnson Foundation Future of Nursing Scholars Program

- **Prize/Award:** In support of up to 75 program scholars across qualifying academic institutions, funding to develop the next generation of Ph.D.-prepared nurse leaders committed to long-term careers that advance science and discovery, strengthen nursing education, and bring transformational change to nursing and health care; the \$75,000 awarded to each scholar for use over the three years of the program must be matched by \$50,000 in support (which may be in-kind) from the awardee's institution
- **Eligibility:** Academic institutions offering research-focused Ph.D. programs that are equipped to utilize award funding to increase the number of nursing students admitted to Ph.D. training
- **Details:** <http://www.rwjf.org/en/library/funding-opportunities/2015/future-of-nursing-scholars.html>
- **Contact:** Heather J. Kelley-Thompson: (215) 898-9836; hkelley@nursing.upenn.edu

GRANT AND AWARD DEADLINES *(continued)*

September 30

The Wiley Prize in Biomedical Sciences

- **Prize/Award:** In honor of breakthrough contributions in pure or applied life sciences, a prize of \$35,000 and luncheon in honor of the recipient(s)
- **Eligibility:** Exceptional individual or team scientists distinguished by excellence, originality, and impact on our understanding of biological systems and processes, who have demonstrated significant leadership in the development of research concepts or their clinical application
- **Details:** <http://www.wiley.com/legacy/wileyfoundation/>
- **Contact:** wileyfoundation@wiley.com

October 1

Cancer Research Institute Irvington Postdoctoral Fellowships

- **Prize/Award:** Fellowships of up to \$164,500 over three years to fund and train young immunologists/cancer immunologists at leading universities and research centers; funding supports the cost of stipend or salary, insurance, and other research-related expenses, such as travel to conferences and meetings
- **Eligibility:** Applicants working in areas directly related to cancer immunology, who, at the time of award activation, have a doctoral degree but less than five years of relevant postdoctoral experience (note to M.D. applicants: residency years are not included in this calculation); an eligible project must fall into the broad field of immunology and show relevance to solving the cancer problem
- **Details:** <http://www.cancerresearch.org/grants-programs/grants-fellowships/cri-irvington-postdoctoral-fellowships>
- **Contact:** (212) 688-7515; grants@cancerresearch.org

October 1

Vannevar Bush Award

- **Prize/Award:** The Vannevar Bush Award Medal, honoring exceptional lifelong, leading contributors to the nation's welfare through public service activities in science, technology, and public policy; the award is presented during a formal dinner and ceremony at the U.S. Department of State

- **Eligibility:** Candidates must be U.S. citizens who have demonstrated outstanding leadership and accomplishment in two or more qualifying areas related to public service, pioneering new frontiers, inspiring others to distinguished achievement, contributing to human welfare, and leadership and creativity in advancing science, technology, and education
- **Details:** www.nsf.gov/nsb/awards/bush.jsp
- **Contact:** (703) 292-2490; nlymn@nsf.gov

October 9

NIH Director's Pioneer Award

- **Prize/Award:** In support of scientists of exceptional creativity who propose pioneering and transforming approaches to major challenges in biomedical and behavioral research., funding awards of up to \$500,000 per year for up to five years
- **Eligibility:** Investigators at all career stages currently engaged in research who will devote at least 51% of effort to the highly innovative research proposed; preliminary data are not required
- **Details:** <https://commonfund.nih.gov/pioneer/index>
- **Contact:** (301) 435-0714; GrantsInfo@nih.gov

October 15

AAI Travel for Techniques (TfT) Awards

- **Prize/Award:** Multiple awards providing up to \$1,500 each in reimbursement of travel expenses for a visit to another laboratory specifically to learn a technique beneficial to award applicant's research
- **Eligibility:** AAI regular and associate member scientists with independent research programs; awarded travel may be that of the applicant, a trainee under the applicant's mentorship, or another lab member; award selection is based on relevance of the technique to the applicant's program and financial need
- **Details:** www.aai.org/Careers/TfT.html
- **Contact:** erwalsh@aai.org

October 16

NIH Director's New Innovator Award

- **Prize/Award:** In support of exceptionally innovative research ideas with the potential for unusually high impact on an important biomedical or behavioral research problem, funding awards of up to \$300,000 per year for up to five years
- **Eligibility:** Unusually creative new or early-stage investigators who have no R01 or equivalent NIH grant and are less than 10 years removed from medical internship/residency or receipt of doctoral degree; preliminary data are not required
- **Details:** <http://commonfund.nih.gov/newinnovator/index>
- **Contact:** (301) 435-0714; GrantsInfo@nih.gov

November 2

Warren Alpert Foundation Prize

- **Prize/Award:** Prize of \$250,000 along with award citation, plaque, and special scientific symposium in honor of the recipient(s) in recognition of scientific achievement that has led to the prevention, cure, or treatment of human diseases or disorders
- **Eligibility:** One or more scientists whose research constitutes a seminal scientific finding of great promise for ultimately changing disease understanding and/or treatability; nominees may be from any country and must be nominated by a research institution without restriction as to country
- **Details:** www.warrenalpert.org/online-nomination
- **Contact:** (617) 432-2116; edward_canton@hms.harvard.edu

November 2

2016 AAI Career Awards

- **Prize/Award:** Multiple awards recognizing early- and midcareer scientific achievement in immunology (including achievement specifically related to human immunology), distinguished service to AAI and the field, and excellence in mentoring the next generation of scientists; included are awards conferring prizes ranging from \$5,000 to \$10,000
- **Eligibility:** Any AAI member in good standing nominated by another AAI member in good standing; details for each award are at www.aai.org/Awards/Career/index.html
- **Details:** www.aai.org/Awards/Career/index.html
- **Contact:** awards@aai.org

99th AAI President's Profile (continued from p. 3)

Han-Mo Koo Memorial Seminar, Van Andel Research Institute; Sidney Leskowitz Memorial Lecture, Tufts University; Beirne B. Carter Lecture in Immunology, University of Virginia; Stephen Max Memorial Lecture, University of Maryland; Bob Smith Lecture, M.D. Anderson Cancer Center; Blumenthal Memorial Lecture, University of Minnesota; Guru, NIH Immunology Interest Group Retreat; Bio-Mega/Boehringer Ingelheim Lecture, University of Montreal; Michael Heidelberger Lecture, New York University; Jane Coffin Childs Fellowship; Diplomate, National Board of Medical Examiners; and Alexander Berg Prize in Microbiology and Immunology, Washington University.

Littman received his A.B. in biochemical sciences from Princeton University and his M.D. and Ph.D. (molecular biology) from Washington University School of Medicine. He completed his medical residency in pathology at the Columbia University College of Physicians and Surgeons and served as a Jane Coffin Childs postdoctoral fellow in the laboratory of Richard Axel at Columbia University. He joined the University of California, San Francisco, faculty as an assistant professor in 1985 and became an assistant HHMI investigator there in 1987. He was appointed full professor in 1994 and became a full HHMI investigator a year later upon joining the faculty at New York University.

Meetings and Events Calendar

Mark Your Calendar for These Important Dates!

2015

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 28–30, 2015

Immunogenomics 2015

Huntsville, Alabama
<http://hudsonalpha.org/immunogenomicsconference/>

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, Medellin, 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/>

November 5–6, 2015

IPIC 2015: International Primary Immunodeficiencies Congress

Budapest, Hungary
www.ipic2015.com

November 5–8, 2015

14th International Workshop on Langerhans Cells

Kyoto, Japan
www.lc2015.jp

November 7, 2015

1st Annual Immune Imaging Symposium

University of Rochester, Rochester, NY
<http://immuneimagingsymposium.urmc.edu>

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

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IMMUNOLOGY 2018™

May 4–8
Austin, Texas

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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.

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