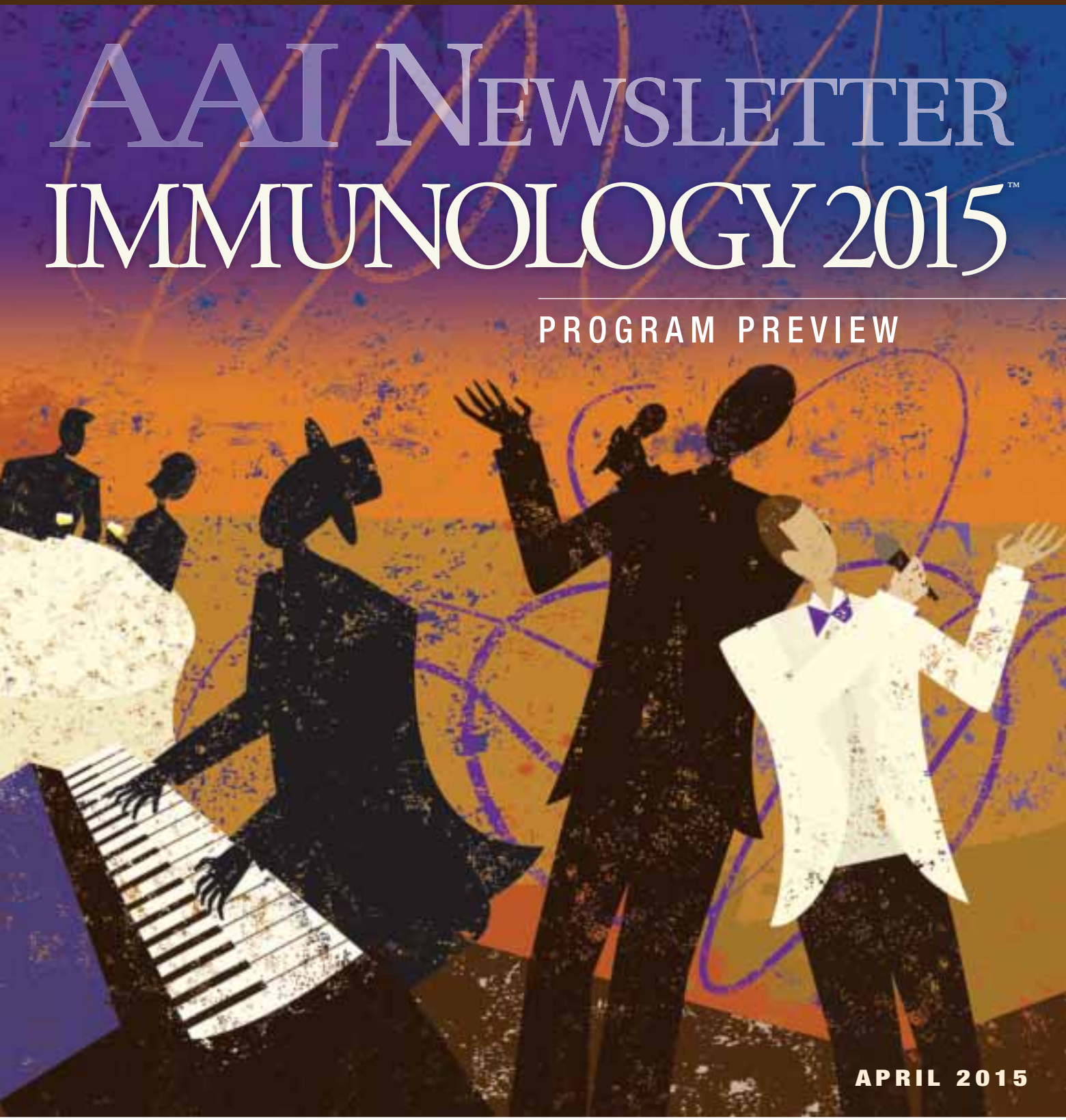
SPECIAL ISSUE

AAI Newsletter

IMMUNOLOGY 2015™

PROGRAM PREVIEW



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May 8-12, 2015
New Orleans, LA
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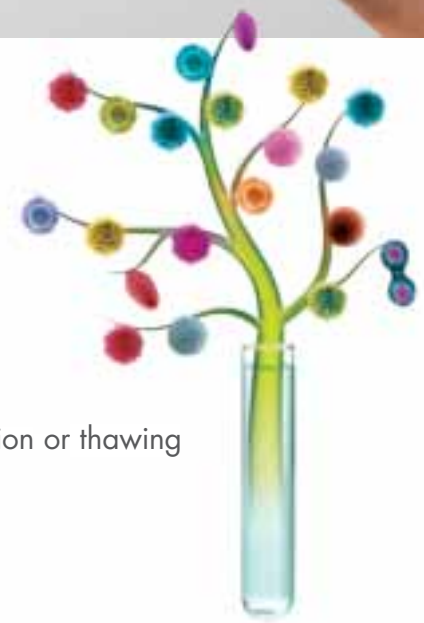

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AAI President's Invitation to IMMUNOLOGY 2015™

Linda A. Sherman
AAI President

Dear Colleagues,

I am honored to have this opportunity to invite you to attend the upcoming annual meeting of The American Association of Immunologists, IMMUNOLOGY 2015™, to be held May 8-12 in the great city of New Orleans. Perhaps like many of you, I have not been to New Orleans since Hurricane Katrina devastated this historic city. I hope you are as excited as I am to visit this much beloved venue that, for me, brings back many happy memories. Where else but "The Big Easy" can you dance in the streets to music wafting from jazz halls along Bourbon Street? The distinctive New Orleans musical and culinary traditions will be highlighted at our Opening Night Welcome Reception and our Gala, thanks to the generous corporate support of eBioscience and BioLegend, respectively. The zydeco and jazz music, Mardi Gras psychics and jesters, and the flavors of New Orleans cuisine should prepare you for our stimulating scientific program.

Our Program Committee, led by Wendy Havran, has put together an exciting meeting featuring a broad range of topical subjects. In addition to the many plenary lectures, symposia, workshops, and nearly 1,700 posters, they are also reprising the highly successful "Back to School" workshop—covering the topics and techniques we all need to learn in order to stay abreast of some of the fastest moving fields. We will also have numerous workshops designed to help you chart a successful career. These will include sessions on sources of alternative funding, successful postdoc fellowships, NIH grant applications, and job interviews. And there will be great networking opportunities at careers roundtables.

This brings me to the important issue of why attending the annual AAI meeting is such a unique opportunity for you. You will learn great science and meet people who will influence your career. The breadth of the science represented at this meeting will give you an opportunity to learn about areas a bit outside your comfort zone, areas that may, in fact, explain that experimental result you've just not been able to wrap your brain around. And you will be able to discuss your results with researchers who may interpret your findings in an entirely different light. Use these precious opportunities to broaden your horizons and meet new collaborators.

So whom do we have to thank for all of this? In addition to the Program Committee, we have generous AAI committee members hosting scientific and career development sessions, numerous Guest Societies preparing workshops and symposia, and, as importantly, the many hard working AAI staff, led by the incomparable Michele Hogan, who plan and execute the perfect meeting each year. I believe their enthusiasm for our exciting venue has led them to outdo themselves this year, and I hope you will join me as we feast with our friends and colleagues on great jazz, great food, and great science!

Laissez les bons temps rouler!

Linda A. Sherman

Linda A. Sherman
AAI President

In This Issue

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Exhibitor Workshops:

Saturday, May 9, 1:45 pm
Workshop Room 1:

MojoSort™, a versatile nanoparticle for magnetic isolation of cells with high purity, yield, and preserved functionality.

Miguel Tam, Ph.D., *Product Manager, BioLegend*

Sunday, May 10, 11:15 am
Workshop Room 2:

LEGENDplex™: A More Consistent and Economical Multiplex Solution for Biomarker Assays

Shaoquan Ji, Ph.D., *Head of ELISA and Multiplex Technologies, BioLegend*

Prize Drawings:

Nine Chances to win a $100 Amazon Gift Card.

Exhibitor Workshop (Tam 5/9): 3 winners.

Exhibitor Workshop (Ji 5/10): 3 winners.

Booth Survey: 3 winners.

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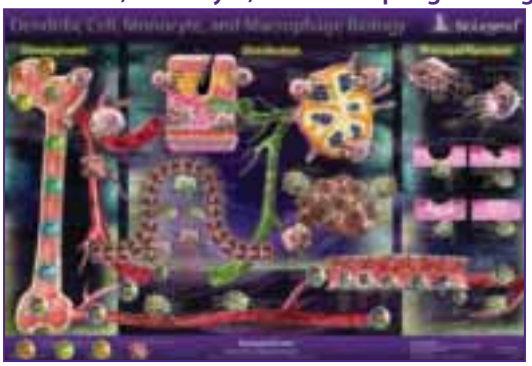
Dendritic Cell, Monocyte, and Macrophage Biology



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Focus on Public Affairs

President Obama Releases Budget for FY 2016; Recommends $1 Billion Increase for NIH

President Obama released his nearly $4 trillion budget for fiscal year (FY) 2016 on February 2. The president's budget, which alerts Congress to the president's spending and policy vision but becomes law only if approved by Congress, would increase discretionary spending by $75 billion, providing significant relief from the spending caps imposed by sequestration. The budget would also provide a $1 billion increase (3.3 percent) for the National Institutes of Health (NIH) in FY 2016, boosting the NIH budget to $31.3 billion.

The president's budget request for NIH would support 10,303 competing research project grants (RPGs), an increase of 1,227. The proposal cites four priority areas within the biomedical research portfolio:

- Unraveling Life's Mysteries through Basic Research
- Translating Discovery into Health
- Harnessing Data and Technology to Improve Health
- Preparing a Diverse and Talented Biomedical Research Workforce

Specifically, President Obama would invest $215 million in FY 2016 in a multi-agency, multi-year Precision Medicine Initiative. In the first year, NIH would receive $130 million to develop a voluntary national research cohort of at least one million volunteers to "propel our understanding of health and disease and set the foundation for a new way of doing research through engaged participants and open, responsible data sharing." In addition, the National Cancer Institute would receive $70 million "to scale up efforts to identify genomic drivers in cancer and apply that knowledge in the development of more effective approaches to cancer treatment." An additional $15 million would be allocated to the U.S. Food and Drug Administration (FDA) and Department of Health and Human Services' Office of the National Coordinator for Health Information Technology for the creation of databases and development of interoperability standards and requirements (see http://www.whitehouse.gov/the-press-office/2015/01/30/fact-sheet-president-obama-s-precision-medicine-initiative).

Other major NIH investments in the president's budget include:

- an increase of $70 million for the president's Brain Research through Advancing Innovative Neurotechnologies (BRAIN) Initiative, a program intended to revolutionize our understanding of the human brain;
- an increase of $100 million to work toward the goals outlined in the Obama administration's "National Strategy for Combating Antibiotic-Resistant Bacteria";

- an increase of $50 million for Alzheimer's disease research; and
- an increase of $23 million for training, including a two-percent increase in trainee stipend rates.

Although the president's budget is non-binding (unless approved by both the House and Senate), it is an important first step in the budget process. Next, the House and Senate will work toward developing their own budgets, with a goal of producing a joint House-Senate budget resolution by April 15.

Several Congressional Bills Introduced to Bolster NIH Funding

Accelerating Biomedical Research Act

Representative Rosa DeLauro

Representative Brian Higgins

Senator Barbara Mikulski

Representatives Rosa DeLauro (D-CT, 3rd) and Brian Higgins (D-NY, 26th) recently re-introduced the *Accelerating Biomedical Research Act*, a bill that would give congressional appropriators the authority to increase the NIH budget over the next six years, despite existing statutory caps on discretionary spending. If appropriators took full advantage of this new authority, then they could increase the NIH budget to approximately $45 billion by FY 2021, more than $15 billion higher than the current NIH budget.

This year's version of the bill, which has attracted Republican support with Representative Peter King (R-NY, 2nd) signing on as an original co-sponsor, would create a "budget cap adjustment" for the next six years for NIH. Like the previous version, the bill would give congressional appropriators the authority—but not require them—to exceed the statutory caps on discretionary spending to provide more funding for NIH. For example, in FY 2016, the bill provides $3 billion in new budget authority for NIH, enabling appropriators to increase the NIH budget by that amount, even if that increase resulted in Congress exceeding the FY 2016 cap on discretionary spending ($1.016 trillion). But, Congress could also choose not to use that increased budget authority and instead, appropriate a lower amount of funding for NIH for FY 2016. The bill allows for a 10-percent increase in NIH funding in each of the first two years and a roughly six-percent increase in the four subsequent years.

The *Accelerating Biomedical Research Act* was first introduced in the Senate last year by former Senator Tom Harkin (D-IA). This year, the Senate version of the bill was introduced by Senator Barbara Mikulski (D-MD), the ranking member of the Senate Appropriations Committee, and is co-sponsored by Senator Ben Cardin (D-MD).

AAI has endorsed the *Accelerating Biomedical Research Act*.

American Cures Act

Senator Richard Durbin

Senator Richard Durbin (D-IL) re-introduced the *American Cures Act*, a bill to authorize investment in four agencies and programs that fund biomedical research, including NIH.

Last year's version of the *American Cures Act* would have created a trust fund for biomedical research. This year, Durbin is taking a different approach, much like the one taken in the *Accelerating Biomedical Research Act* (see above), by creating a budget-cap adjustment. This adjustment would grant appropriators the authority to exceed the caps on discretionary spending for each of the next six years to provide increases for the following agencies and programs:

- NIH
- Centers for Disease Control and Prevention
- Department of Defense Health Program, and
- Veterans Medical & Prosthetics Research Program

The bill aims to provide sustained and predictable growth for these agencies and programs, which Durbin calls "the core drivers of federally funded biomedical research in the U.S." If appropriators took full advantage of this new budget authority, then the budget of each of these agencies and programs included in the bill would increase by five percent plus inflation each year through FY 2021.

The *American Cures Act* is co-sponsored by 10 Democratic senators. To date, no House version of the legislation has been introduced.

AAI has endorsed the *American Cures Act* for the second consecutive Congress.

Medical Innovation Act

Senator Elizabeth Warren

Representative Chris Van Hollen

Senator Elizabeth Warren (D-MA) and Representative Chris Van Hollen (D-MD, 8th) recently introduced a bill that aims to increase funding for NIH and FDA.

The *Medical Innovation Act* would require some pharmaceutical companies that enter into settlement agreements with the U.S. government to pay a percentage of their profits to a fund benefitting NIH and FDA. Companies would be subject to the penalty if they:

- were charged by the U.S. Justice Department with breaking the law and reached a settlement with the government;
- sold at least one "blockbuster drug" (a drug that had sales over $1 billion in the previous year) in the previous calendar year; and
- sold one or more blockbuster drug(s) that were "developed, in whole or in part, through Federal Government investments in medical research."

Companies that meet all of the aforementioned criteria would be required to pay one percent of their net income, per blockbuster drug, to the federal government over a period of five years. Companies that do not reach a settlement with the government, but instead take their case to trial, would not be subject to this penalty.

The intent of the bill is two pronged: to increase funding for NIH and FDA and reverse a trend, described by Warren as "a worrisome increase in the number of major drug companies that have been caught breaking the law." Warren has said that if this policy had been in place over the last five years, "NIH would have had nearly $6 billion more every year … almost a 20 percent increase in NIH funding" (see http://www.warren.senate.gov/?p=press_release&id=714).

Upton, DeGette Release Biomedical Research Draft Bill: *21st Century Cures Act*

Representatives Fred Upton (R-MI, 6th) and Diana DeGette (D-CO, 1st), the chair and former ranking member of the House Energy and Commerce Committee, have released a draft bill intended to "accelerate the discovery, development, and delivery of promising new cures for patients" and help the United States maintain its standing as a global leader in biomedical innovation (see www.energycommerce.house.gov). The initial discussion draft is the product of an ongoing project known as the 21st Century Cures Initiative. Legislators spent over one year gathering data through various informational sessions and hearings and solicited feedback from both the public and a wide range of stakeholders.

The discussion draft includes the following five topic areas: "(I) Putting patients first by incorporating their perspectives into the regulatory process and addressing unmet needs; (II) Building the foundation for 21st century medicine, including helping young scientists; (III) Modernizing clinical trials; (IV) Accelerating the discovery, development, and delivery cycle and continuing 21st century innovation at NIH, FDA [Food and Drug Administration], CDC [Centers for Disease Control and Prevention], and CMS [Centers for Medicare & Medicaid Services]; and (V) Modernizing medical product regulations."

The discussion draft would require NIH to:

- develop a five-year strategic plan, as currently, individual NIH institutes and centers develop strategic plans, but there is no NIH-wide strategic plan;
- create a Working Group tasked with reducing the administrative burden on scientists, specifically by taking steps to streamline the grant process; and
- implement a new program to help support more young scientists.

The discussion draft also would require the Government Accountability Office to complete three studies on NIH: one on "duplication in federal biomedical research," another on "waste, fraud, and lack of consistency with the NIH mission," and a third on the NIH Common Fund.

Whereas many of the proposals in the discussion draft are detailed and complete, others remain unfinished. There is a placeholder section for precision medicine, presumably intended to include some or all of President Obama's Precision Medicine Initiative (see "President Obama Releases Budget for FY 2016; Recommends $1 Billion Increase for NIH" on page 5). There is also a placeholder section for language regarding government-funded travel for NIH employees. And whereas the discussion draft proposes to authorize funding for programs, such as the NIH Common Fund and the president's BRAIN Initiative, it does not specify authorization levels for these programs.

AAI members are encouraged to share their thoughts on the discussion draft with the authors of this draft legislation by sending an email to cures@mail.house.gov.

Congress Holds Hearings on Vaccine-Preventable Disease

In response to the recent measles outbreak and a surge in influenza cases, both the House and Senate held hearings on the topic of vaccine-preventable diseases. At both hearings, there was bipartisan agreement on the efficacy and value of vaccines to public health, with legislators on both sides of the aisle urging the public to take advantage of the measles and influenza vaccines.

Senators Patty Murray and Lamar Alexander pictured at the February 10 Senate hearing

On February 3, 2015, the House Energy and Commerce Subcommittee on Oversight and Investigations held a hearing on "Examining the U.S. Public Health Response to Seasonal Influenza." Committee members heard testimony from Biomedical Advanced Research and Development Authority (BARDA) Director Robin Robinson, Ph.D.; National Center for Immunization and Respiratory Diseases Director Anne Schuchat, M.D.; National Institute of Allergy and Infectious Diseases (NIAID) Director Anthony Fauci, M.D.; and Center for Biologics Evaluation and Research (CDER) Director Karen Midthun, M.D. Whereas the hearing focused on the causes of the relative inefficacy of this season's influenza vaccine, members frequently asked about the measles outbreak. The witnesses repeatedly affirmed the safety of vaccines, with Fauci emphasizing that the measles vaccine is "one of the most highly effective vaccines against any virus."

On February 10, 2015, the Senate Health, Education, Labor and Pensions Committee held a hearing on "The Reemergence of Vaccine-Preventable Diseases: Exploring the Public Health Successes and Challenges." The witnesses (Dr. Schuchat; parent and pediatrician Tim Jacks, D.O.; Tennessee Department of Health Immunization Program Director Kelly Moore, M.D., M.P.H.; and University of California, San Diego, Professor of Clinical Pediatrics Mark Sawyer, M.D.) stressed the importance of vaccination and described strategies used to increase vaccination rates. During the hearing, Committee Chair Lamar Alexander (R-TN) summed up the emphatic view of the bipartisan group of members present, stating: "Sound science is this: vaccines save lives. They save the lives of the people who are vaccinated. They protect the lives of the vulnerable around them—like infants and those who are ill. Vaccines save lives."

NIH Requests Comment on the Potential Creation of an Emeritus Award for Senior Researchers

NIH recently released a Request for Information (RFI): Sustaining the Biomedical Workforce and a Potential Emeritus Award for Senior Researchers. The potential "Emeritus Award" is premised on the notion that there are senior researchers who may be ready to transition from a largely research-driven role to a role that focuses on teaching or mentorship but are not wishing to dismantle their laboratory program completely. The RFI aims to gather input on whether the community feels a new award is necessary to transition resources and research from a more senior investigator to a junior colleague. Additionally, this RFI seeks comment on what terms and timelines might be best for this type of funding.

The idea of a transition grant for senior researchers is not new. In a document released by the Federation of American Societies for Experimental Biology (FASEB), entitled "Sustaining Discovery in Biological and Medical Sciences: A Discussion Framework," it is suggested that "research sponsors should consider creating a transition award for senior investigators" (http://www.faseb.org/SustainingDiscovery/Home.aspx). The FASEB recommendation is intended, in part, to make more R01s available for young and mid-level investigators by facilitating a reduced research program for those investigators who are ready to move on to other roles. This award would provide time and funding to transfer projects and ensure that graduate students are able to complete their studies before lab closure.

Additional details about the proposed Emeritus Award were presented by NIH Deputy Director for Extramural Research Sally Rockey, Ph.D., in her Rock Talk blog. To date, the community comments on this blog post have been largely negative, reflecting widespread concerns that the creation of a new award would detract from R01 funding. In addition, many have argued that there are already mechanisms in place to transition grants to other researchers and that researchers have the option to include co-principal investigators on grants, rendering an Emeritus Award redundant.

AAI responded to the RFI on March 6; view the AAI comments at www.aai.org/Public_Affairs/Letters-Comments.html.

Investigators Embark on New Research Frontiers with the AAI Travel for Techniques Program

AAI Travel for Techniques Program awardee Pooja Jain (third from right) taking a break from learning new protocols with her host PI's lab members

In 2014, AAI successfully launched the Travel for Techniques Program, adding an additional funding opportunity to its already robust support for scientists through fellowships, career awards, and travel grants. This award is given to member principal investigators (PIs), reimbursing up to $1,500 in expenses for travel to another institution to learn a technique beneficial to the PI's research.

The 12 investigators awarded funds so far through the Travel for Techniques Program have set out on journeys crisscrossing the country to expand their repertoire of techniques and help meet the demands of new research initiatives in their labs. Some awardees have sought expertise that seemed, at first mention, to be well beyond the familiar realm of immunology research. Participants have been trained in techniques ranging from reduced representation bisulfite sequencing (RRBS), a high-throughput technique used to analyze a representative sample of genome-wide methylation profiles at the single nucleotide level, for use in studying the stages of dendritic cell differentiation, to immuno-spin trapping for the detection of DNA free radicals in murine diabetes models. Some awardees have traveled to learn more conventional immunological techniques unavailable at their own institutions, such as the culture of primary human $CD4^+$ T cells.

Technical expertise acquired through the Travel for Techniques Program has helped participants resolve myriad research problems and goals. Irving Allen (AAI '12), a 2014 summer cycle awardee from the Virginia Polytechnic Institute, traveled to the University of North Carolina, Chapel Hill, to learn how to fabricate solid core polyethylene glycol nanoparticles for use in delivery of small molecule treatments in vivo. "We'd identified gene targets that modulate inflammation and influence autoimmune disease severity and cancer pathogenesis and suspected that these genes should be amenable to siRNA-based therapeutics. However, my lab didn't have the capability to generate nanoparticles of the optimum composition to deliver siRNA in vivo," says Allen. "Because of the Travel for Techniques Program, I was able to visit another institution to observe the nanoparticle fabrication process, allowing for a deeper understanding of the methods and applications for this technique. I can now apply this technique to the fabrication of siRNA therapeutics for use in my studies."

Another program participant, Pooja Jain (AAI '09), was able to team up with investigators in her host PI's lab to generate data she hopes to translate into a manuscript. "As a result of my teamwork with Jerry Boss' (AAI '94) lab, we were able to successfully create RRBS libraries from DNA samples derived from immune cells. The data generated on this visit will help in the preparation of a manuscript and submission of a joint grant proposal."

Program participants attest to the benefits of the award beyond becoming proficient in a laboratory technique, noting that the experience offers them access to technical training from researchers proficient in the desired field of expertise, opportunities for future collaboration, and insightful perspectives from host institution investigators about the traveling PI's research.

"This program has provided me with many benefits," remarked Holly Algood (AAI '11), a 2014 fall cycle awardee who traveled from Vanderbilt University to the University of Cincinnati to gain expertise in gastric ulceration models. "In the short term, I have learned a new technique applicable to my research and obtained preliminary data for a grant I am planning to submit to NIH. I am also hopeful that this trip will lead to a long-term collaboration mutually beneficial to my lab and that of my host PI, who, as a physiologist, provides a unique viewpoint on my research."

Jyotika Sharma (AAI '05), another fall cycle awardee, indicated that the program was particularly useful for young faculty, saying, "This program provides a unique platform to initiate interactions and collaborative opportunities with scientists at other institutions in an informal and comfortable setting. This is especially beneficial for young investigators, like me, who have recently started their own research labs."

The Travel for Techniques Program considers proposals on a rolling basis with application deadlines in February, June, and October. The spring application cycle for the program will open on April 15th and close on June 15th. For more information regarding eligibility requirements, to see the list of previous recipients, or to download the application, please visit the Travel for Techniques webpage at www.aai.org/Careers/TfT.html. Inquiries about the program may be directed to tft@aai.org. Be sure to stop by the AAI booth (#901) at IMMUNOLOGY 2015™ to learn more about the AAI grants and awards programs.

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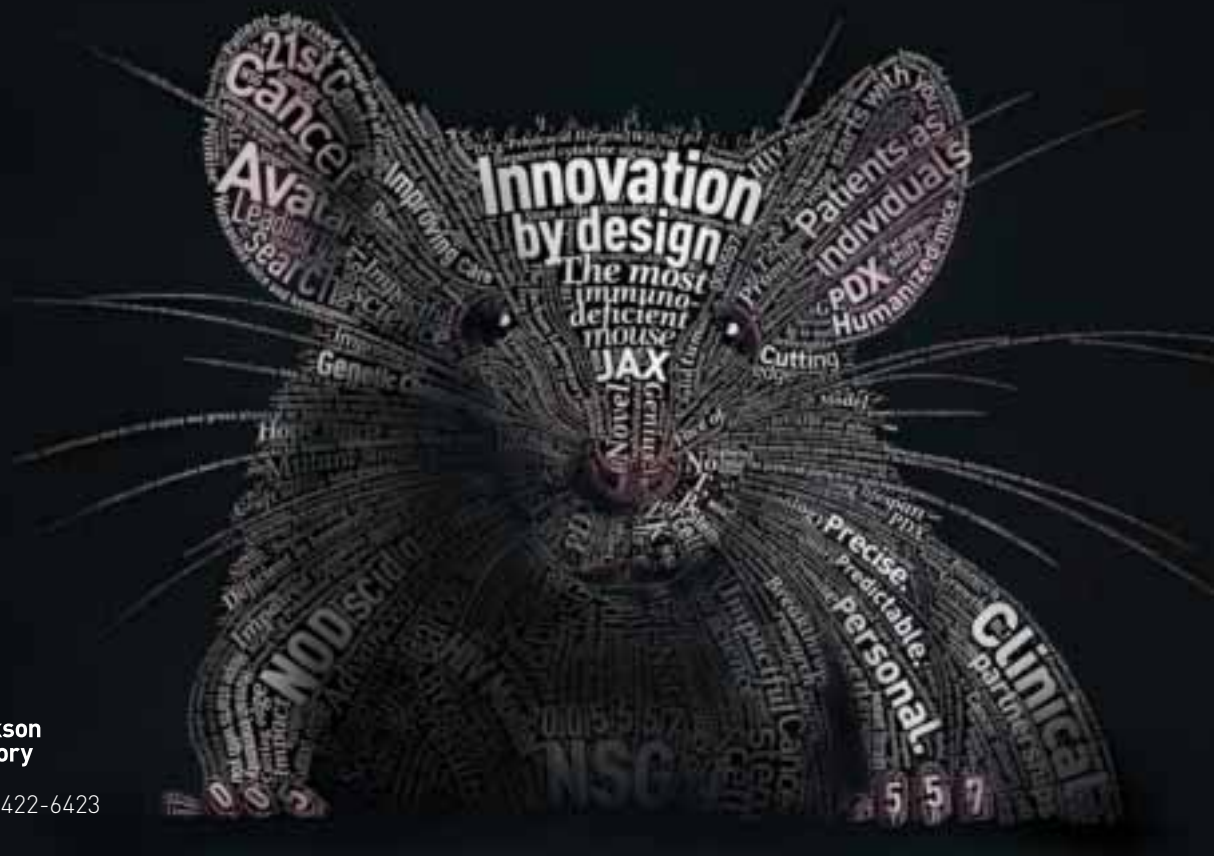

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2015 AAI Career Award Recipients

AAI proudly presents the 2015 AAI Awards for outstanding research and career achievements.

Jonathan Sprent Honored with AAI Lifetime Achievement Award

Jonathan Sprent, M.B.B.S., Ph.D., Garvan Institute of Medical Research, is the recipient of the 2015 AAI Lifetime Achievement Award in recognition of a career of extraordinary scientific achievement coupled with exceptional leadership and service to AAI. This award is the highest honor bestowed by the AAI Council upon an AAI member.

Sprent has been a career-long world leader in the area of T cell biology. Among his early, seminal findings, was his demonstration in 1971 that alloantigen-activated T cells were selectively recruited from the circulation. Other ground-breaking early experiments by Sprent showed two distinct subgroups of T helper cells in F1 hybrid mice, each able to help B cells from one parental strain, and the negative selection of T cells by filtration through an allogeneic host. These early discoveries laid the foundation for our understanding of lymphocyte homing and MHC restriction. Sprent has sustained his exploration of many cutting-edge aspects of T cell biology, including the role of T cell subsets in graft-versus-host disease, mechanisms of positive and negative selection during T cell differentiation, and factors that promote the survival of memory T cells. Recent work by his laboratory has also focused on the development of immunotherapies for treatment of autoimmunity, transplant rejection, and cancer.

An AAI member since 1980, Sprent was elected to AAI Council in 1993 and served as AAI president from 1998 to 1999. He has also served as a member of the AAI Publications Committee, as a Distinguished Lecturer and Major Symposium speaker at the AAI annual meeting, an associate editor for *The JI*, a delegate to the International Union of Immunological Societies (IUIS), and a representative to the IUIS Council.

Sprent's commitment to the scientific community is further evident from his service on scientific advisory boards for the Howard Hughes Medical Institute, Kimmel Cancer Center, and Edward Jenner Institute for Vaccine Research. He has also served on the National Institutes of Health (NIH) Immunobiology Study Section and the editorial boards of numerous scientific journals.

Sprent received his M.B.B.S. from the University of Queensland before obtaining his Ph.D. from the Walter and Eliza Hall Institute in 1972. Following research positions at the Basel Institute for Immunology in Switzerland and University College in the United Kingdom, he became a faculty member at the University of Pennsylvania School of Medicine in 1976 and rose in the ranks to a full professor by the time of his departure in 1983. He moved to The Scripps Research Institute in La Jolla, California, holding the appointment of professor at Scripps and adjunct professor at the University of California, San Diego. In 2006, he returned to Australia to the Garvan Institute of Medical Research, where he currently serves as professor and head of the Cellular Immunity Laboratory. He also holds the positions of adjunct professor at Scripps, conjoint professor at the University of New South Wales in Sydney, and professor at Pohang University of Science and Technology in South Korea.

Dr. Sprent has received many accolades for his contributions to the field. He is a fellow of the Royal Society, a fellow of the Australian Academy of Science, and an honorary member of the British Society for Immunology. He has received the Excellence Award and the Burnet Award from the Australian National Health and Medical Research Council, two Merit Awards from the NIH, and the J. Allyn Taylor International Prize in Medicine from the Robarts Research Institute. From among his hundreds of highly cited papers, his early paper on the recruitment of antigen-activated T cells has been re-published in *The Journal of Immunology* "Pillars of Immunology" section reserved for papers deemed "classics in the field." He is also a frequently invited speaker at scientific meetings and lectures in Australia and abroad, delivering the Burnet Oration at the Australasian Society for Immunology annual meeting, the Russell S. and Rae Weiser Endowed Lecture at the University of Washington, and the Director's Lecture at the Walter and Eliza Hall Institute, among others.

For his career-long, ground-breaking scientific contributions and service to the field of immunology, it is most fitting that Dr. Sprent be honored with the AAI Lifetime Achievement Award.

The AAI Lifetime Achievement Award is given annually in recognition of distinguished scientific accomplishment and extraordinary service to AAI.

AAI Excellence in Mentoring Award Bestowed upon Rafi Ahmed

Rafi Ahmed, Ph.D., Emory University School of Medicine, is the recipient of the 2015 AAI Excellence in Mentoring Award in recognition of his contributions to a future generation of scientists.

Dr. Ahmed is renowned as a researcher for his work contributing to understanding immunologic memory of T and B cells and the immunobiology of virus infection. Ahmed's contributions include the discovery that T cell memory could be long lived and persist in the absence of antigen; the demonstration of T cell exhaustion in chronic viral infection; and the identification

of the role of inhibitory receptor programmed death 1 (PD-1) in T cell exhaustion. His work has led to the development of new vaccines and the development of PD-1 blockade therapy, which is showing promise for the treatment of chronic infections and cancer. Dr. Ahmed was recently elected to the Institute of Medicine of the National Academy of Sciences in honor of his scientific achievements.

His other legacy is the remarkable number of successful scientists—more than 75—he has mentored throughout his career. Impressively, more than one-third of his former trainees hold faculty positions and have established their own laboratories at universities and research institutions in the United States and abroad, including the University of California, University of North Carolina, La Jolla Institute for Allergy and Immunology, University of Pennsylvania, Yale Medical School, University of Minnesota, National Taiwan University, and University of Melbourne. Others have achieved success at scientific corporations, U.S. government organizations, scientific foundations, clinics, and law firms. Many of Ahmed's trainees have continued to make important contributions in immunology, particularly in the areas of immunologic memory, infectious disease, and vaccine therapy.

His past trainees attribute their own success to abilities that Ahmed honed in them: skills in writing scientific manuscripts, giving clear presentations, and reviewing papers. He also directly mentors his trainees in every aspect of grant writing, from planning of the budgets and administrative sections to the writing of the specific aims section and generation of figures. Many who served in his lab have received their first R01 within the first year of starting their own labs.

Ahmed is said to exemplify many qualities essential to outstanding science and research. One former postdoctoral fellow, E. John Wherry, director of the Institute for Immunology at the University of Pennsylvania Perelman School of Medicine, explains how Ahmed instills in his trainees an expectation for precision and excellence: "For Rafi, it is always much more important to be absolutely, positively correct than to be finished with a grant, paper, or experiment. Better not to submit if it wasn't perfect. In his lab, this often led to sleepless nights before deadlines, dozens upon dozens of 'final' drafts of papers, and hundreds of reanalyzed experiments. However, the result was always the best possible grant, paper, or presentation."

Ahmed is also widely praised for his robust support of collaboration both inside and outside of his laboratory. He invariably meets with trainees whose projects he sees are starting to overlap, often turning potentially competitive projects into opportunities for collaboration. He purposely seeks the opinions of his trainees, promoting their confidence in their scientific acumen. His former trainees note how open and generous Ahmed is with his time even once they have left his lab. He is highly proactive in recommending both current and past fellows for faculty positions and speaking engagements, enthusiastically promoting their accomplishments to his peers when visiting other institutions or chatting with colleagues. His trainees know he remains available to offer career or research advice—or just to chat about what's new in the field.

His relentlessly positive attitude is regarded as a great motivator. Former postdoctoral fellow, Susan Kaech, associate professor at the Yale School of Medicine, says, "Rafi always greets you with a smile and a chuckle, and even at the bleakest of times, he helps find a solution, often with some humor to lighten the situation. His ability to remain positive is a torch that I try to carry with me, and when my students and postdocs enter my office to tell me of a failed experiment or something else that is causing grief and stress, I try to remind myself of how Rafi would handle this situation…with a smile and some reassurance."

Ahmed obtained his Ph.D. from Harvard University in 1981. Following a research fellowship at the Scripps Clinic and Research Foundation in La Jolla, California, he became a faculty member at the UCLA School of Medicine, holding the rank of full professor at his departure in 1995. He moved to Emory University, where he currently serves as Charles Howard Candler Professor of Microbiology and Immunology, director of the Emory Vaccine Center, and Georgia Research Alliance Eminent Scholar in Vaccine Research.

Dr. Ahmed is a member of the National Academy of Sciences and a fellow of the American Association for the Advancement of Science. He is a frequent invited speaker, presenting his research in a Distinguished Lecture at the AAI annual meeting, the Dan H. Campbell Memorial Lecture at the Midwinter Conference of Immunologists, the Janeway Lecture at Yale University, a National Institutes of Health Director's Lecture, and the Baruj Benacerraf Lecture in Immunology at Harvard University, among others. He has been honored by Emory University with the Dean's Distinguished Faculty Lecture and Award and the Albert E. Levy Scientific Research Award. He also has served on numerous scientific advisory and journal editorial boards.

A member of AAI since 1984, Ahmed has served on the AAI Nominating Committee and as a faculty member for the AAI Advanced Course.

The AAI Excellence in Mentoring Award is presented annually in recognition of exemplary career contributions to a future generation of scientists.

Mary Ellen Conley Presented with the AAI-Steinman Award for Human Immunology Research

Mary Ellen Conley, M.D., Rockefeller University, is the recipient of the 2015 AAI-Steinman Award for Human Immunology Research. Conley is recognized for her outstanding contributions to the understanding of primary immunodeficiencies (PIDs), particulary B cell PIDs, and her prowess as a clinical investigator and diagnostician in the field of pediatric immunology.

Conley, along with Owen Witte, was instrumental in the genetic characterization of the first known PID, X-linked agammaglobulinemia (XLA), describing several mutations in the gene encoding Bruton's tyrosine kinase (BTK). After this first foray into the study of PIDs, Conley devoted the next 20 years to investigating the genetic and immunological foundation of several autosomal recessive and dominant forms of agammaglobulinemia. Her lab revealed that mutations in the μ heavy chain gene caused a clinical disorder similar to XLA, and

also pioneered research into agammaglobulinemias caused by mutations in *BLNK, PIK3R1* , and *TCF3.*

Her work deciphering PIDs in clinical patients bridged the divide between the bedside and bench, yielding key insights into basic human B cell development and signaling pathways. Conley's examination of human B cells with mutations in BTK and the μ heavy chain gene showed that B cell differentiation stagnated at the same point in these cells, providing evidence to support the hypothesis that BTK was an important component of the B cell signaling complex. Conley's studies also revealed that B cell receptor signaling requires a protein scaffold, and some μ heavy chains are expressed on the B cell surface, which laid the groundwork for further studies by others into the process of B cell negative selection. Her work is also lauded for its juxtaposition of the human and mouse, shedding light on the differences in B cell development and differentiation between these two organisms.

Beyond her role as an investigator, Conley's colleagues recognize her as an exemplary physician-scientist who is able to balance scientific discovery with the empathy required for quality patient care. "I am most grateful personally to Mary Ellen for what she taught me about compassion and the care of the ill," says Nobel laureate Peter Doherty, Michael F. Tamer Chair of Biomedical Research at St. Jude Children's Research Hospital, and professor laureate at the University of Melbourne. Doherty thanks the "Mary Ellen Conley voice" in his head for helping him address clinical and ethical issues in public forums more empathetically. "Through Conley's example, I came to understand more fully what it means to have a very sick child with a genetically determined syndrome and how it is that people cope with such an immense emotional and practical challenge."

Conley received her M.D. from the University of California, San Diego, in 1975. Following a pediatric residency at the Children's Orthopedic Hospital in Seattle, Washington, Conley served as a postdoctoral fellow at the University of Alabama, Birmingham. In 1980, she joined the faculty of the University of Pennsylvania as an assistant professor, rising to the rank of associate professor before her departure in 1988 to take positions as the Federal Express Professor of Pediatrics at the University of Tennessee and as a member of the Department of Immunology at St. Jude Children's Research Hospital. In 2014, Conley moved to the Rockefeller University, where she currently holds the position of professor.

Dr. Conley is the recipient of a National Institutes of Health MERIT Award, the Immune Deficiency Foundation Lifetime Achievement Award, and the Thomas Waldmann Award for Excellence in Human Immunology. She has also been nominated as a Best Doctor in America (bestdoctors.com) on multiple occasions and serves as a member of the International Union of Immunological Societies' Primary Immunodeficiency Expert Committee.

Conley has been an AAI member since 1982 and has served the association as an AAI Clinical Immunology Committee member, Abstract Programming Chair, and faculty member at the AAI Introductory Course in Immunology.

The AAI-Steinman Award for Human Immunology Research is presented annually for significant, sustained achievement in immunology research pertinent to human disease pathogenesis, prevention, or therapy.

AAI-Thermo Fisher Meritorious Career Award Conferred upon Ronald N. Germain

Ronald N. Germain, M.D., Ph.D., National Institutes of Health (NIH), National Institute of Allergy and Infectious Diseases (NIAID), Laboratory of Systems Biology, is honored with the 2015 AAI-Thermo Fisher Meritorious Career Award. Germain is recognized for his outstanding research contributions to T cell antigen recognition and pioneering work in systems biology and the real-time imaging of immune responses.

In his early work, Germain made seminal contributions to understanding the complexities of antigen recognition. Germain made key findings that advanced understanding of the relationship between the structure of major histocompatibility complex (MHC) class II and its function, the molecular basis of T cell antigen recognition, and the mechanism of antigen processing. He has also provided insight into how T cell selection in the thymus deters the development of an autoreactive T cell repertoire.

Now, more than ever before, Germain's work focuses on understanding the anatomy of the immune response, using in vivo imaging, systems biology approaches, and more traditional techniques, to examine immunity to foreign pathogens at the cell, tissue, and organismal level. Germain was one of the first immunologists to investigate basic immune functions in real time, helping to develop dynamic in vivo imaging techniques to analyze cell trafficking and distribution within lymphoid organs under steady-state and antigenic challenge conditions. His work with this technique has branched off into many other avenues of immune investigation, including the identification of the underlying defect in B cell-helper T cell interactions that causes immunoglobulin deficiency in X-linked proliferative disease. Combining these techniques with systems biology approaches in the Laboratory of Systems Biology at NIH, which he helped found, Germain queries ever broader concepts that target the fundamental understanding of immunity.

Germain's colleagues testify to his lifelong passion for and leadership in the field of immunology, pointing out that, after more than 40 years in the field, Germain has entered one of the most prolific phases of his career. William Paul, chief of the Laboratory of Immunology at NIAID, says, "Indeed, the last five years, are, in my view, the most productive and exciting of Ron's entire career and I would predict that the next five years will be even more productive. Our colleagues in the immunology community throughout the world regard Ron's newest series of studies as having a virtually revolutionary impact on our understanding of how the immune system functions in real time."

In 1976, Germain received both his M.D. and Ph.D. degrees from Harvard University. He was appointed an assistant professor of pathology at the Harvard Medical School in 1977, where he subsequently rose to the rank of associate professor in 1980. From there, he moved to the NIH, where he has held several appointments, including the deputy chief of the Laboratory of Immunology and the director of the Program in Systems

Immunology and Infectious Disease Modeling. He is currently the chief of the Laboratory of Systems Biology at NIAID and the associate director for Systems Biology and Technology at the Trans-NIH Center for Human Immunology, Autoimmunity, and Inflammation.

Dr. Germain is an elected member of the Institute of Medicine of the National Academy of Sciences. He is also an American Association for the Advancement of Science fellow and an associate member of the European Molecular Biology Organization, in addition to holding several other elected and honorary memberships in scientific organizations. Germain has been honored with several NIH distinctions, including the NIH Director's Merit Award, the NIAID Merit Award, and a designation as an NIH Distinguished Investigator. He has also received the Meritorious Presidential Rank Award from the United States government and the Landsteiner Medal from the Austrian Society of Allergology and Immunology.

In addition to his other distinctions, Germain has received numerous lectureship honors from around the world. He has also served on myriad conference, symposia, and review committees, including the Howard Hughes Medical Institute (HHMI) Scientific Review Board and the HHMI-NIH Research Scholars Program Advisory Committee.

Dr. Germain has been a member of AAI since 1978. He has spoken at the AAI annual meeting on numerous occasions, lecturing as a Major Symposium speaker, Distinguished Lecturer, and as a member of the President's Symposium. He has served as an associate and deputy editor for *The Journal of Immunology*, as a member of the AAI Membership, Education, and Nomination Committees, and as a course faculty member for the AAI Introductory Course in Immunology.

The AAI-Thermo Fisher Meritorious Career Award is given annually for outstanding research contributions to the field of immunology.

Thirumala-Devi Kanneganti Receives the AAI-BD Biosciences Investigator Award

Thirumala-Devi Kanneganti, Ph.D., St. Jude Children's Research Hospital, has been chosen to receive the 2015 AAI-BD Biosciences Investigator Award. She receives the award for her fundamental contributions to our understanding of inflammasome biology and IL-1 regulation. She first broke ground as a postdoctoral fellow in the laboratory of Gabriel Núñez at the University of Michigan Medical School, where she found that bacterial DNA engaged the NLRP3 inflammasome for the production of IL-1β. Since setting up her own laboratory at St. Jude Children's Research Hospital, she has continued to make seminal discoveries. She extended her earlier findings to show that the NLRP3 inflammasome also mediated a healing response to influenza infection. Having established the critical role of NLRP3 during infection, Kanneganti then described its role in protecting epithelial integrity in experimental autoimmune colitis. She also explored the function of other inflammasome components, showing that NLRP12 attenuated colon inflammation and tumorigenesis, and that NLRP6 negatively regulated inflammation by downmodulating NFκB responses. She has further contributed toward elucidating the mechanisms of IL-1-mediated disease, with her demonstration that IL-1α produced independently of inflammasomes induced autoinflammation, and that diet-induced changes in the microbiota modulated IL-1β-dependent inflammatory bone disease in a mouse model of osteomyelitis.

Nobel laureate Peter Doherty, the Michael F. Tamer Chair of Biomedical Research at St. Jude Children's Research Hospital, and professor laureate at the University of Melbourne, credits Kanneganti's broad undergraduate training in zoology, botany, and chemistry as one of her strengths: "The consequence of this is that, while a very focused researcher, Thirumala has a very broad-spectrum view of biology and of the significance of what we do as scientists. Perhaps this depth of experience has also contributed to her incredible capacity to take an initial, intriguing finding through to a well-developed comprehensive research publication over a relatively short time."

Kanneganti earned her Ph.D. from Osmania University in India in 2001. Following postdoctoral fellowships at Ohio State University and the University of Michigan, she assumed a research investigator position at the University of Michigan. In 2007, she joined the Department of Immunology at St. Jude Children's Research Hospital and moved through the ranks rapidly to her current position of member.

Kanneganti has shown tremendous productivity, authoring over 128 publications and regularly publishing her findings in prestigious journals such as *Nature, Nature Immunology, Immunity,* and *The Journal of Immunology (The JI).* She is frequently invited to speak at international meetings, including plenary lectures at the annual meeting of the German Society for Hygiene and Microbiology and German Society for Infectiology; and Lorne Infection and Immunity Conference. She has served on numerous study sections and special emphasis panels for the National Institutes of Health, as well as international review boards, including the United Kingdom Medical Research Council, Netherlands Organization of Scientific Research, European Research Council, Israel Science Foundation, and Singapore National Medical Research Council. She has also served at St. Jude as a member of its Institutional Biosafety Committee, Institutional Animal Care and Use Committee, Signal Transduction Program, and as a session chair and on the student evaluation committee for the St. Jude Graduate National Symposium. Paul Thomas, Associate Member, St. Jude Children's Research Hospital, says, "In our own department at St. Jude, Dr. Kanneganti is a mentor and leader for the junior faculty, providing generous amounts of her time and resources to support other investigators."

An AAI member since 2006, Kanneganti currently is a section editor for *The JI.* She has also been a Major Symposium speaker at the AAI annual meeting.

The AAI-BD Biosciences Investigator Award is presented annually for outstanding, early-career research contributions to the field of immunology.

2015 AAI Distinguished Service Award Presented to Elizabeth J. Kovacs

Elizabeth J. Kovacs, Ph.D., Loyola University Chicago Stritch School of Medicine, is being honored with the 2015 AAI Distinguished Service Award. She provided invaluable service to AAI during her tenure on the AAI Committee on Public Affairs (CPA) from 2007 to 2014, serving the last two years as chair.

During her tenure, Kovacs provided vital leadership and support to two key public policy advocacy programs created by the CPA: the AAI Public Policy Fellows Program, which provides postdoctoral fellows and other junior scientists with the opportunity to learn about and participate in the public policy and legislative activities of AAI; and the AAI Research Advocacy Program, which enables policy leaders from relevant patient advocacy organizations to learn about basic immunology and about public policy issues of concern to AAI. Her involvement with both programs ran deep; she helped select and oversee the first four classes of AAI Public Policy Fellows, participated in multiple Capitol Hill visits with the Fellows to help convey our advocacy message, and otherwise helped make the program a valuable experience for our AAI-member participants. Kovacs also served for several years as a speaker for the AAI Research Advocacy Program, helping non-scientist leaders of patient advocacy organizations better understand how the immune system impacts the diseases to which their organizations are devoted and why supporting immunological research is essential to their goals.

Kovacs also helped develop and participate in educational sessions sponsored by the CPA at AAI annual meetings. She shared her expertise on peer review issues as a speaker at the 2012 CPA session: "NIH Peer Review: Understanding the New System." In 2013 and 2014, she chaired the sessions: "The Importance of Communicating Science in an Era of Doubters and Deniers" and "Rock-Talking With Sally Rockey: The Issues, the Blog, and the Woman Behind It All." In addition, at IMMUNOLOGY 2014™, she oversaw the 25th anniversary celebration of the AAI Public Affairs Program, which included a reception and show featuring the political satire group, The Capitol Steps.

As committee chair, Kovacs submitted congressional testimony on behalf of AAI to the House and Senate Appropriations Subcommittees on Labor, Health and Human Services, Education, and Related Agencies, which fund NIH. In her testimony and in numerous visits to members of Congress, Kovacs advocated for increased and predictable NIH funding, explained the importance and promise of immunological research, and espoused the economic, national, and local benefits of investing in biomedical research. She also participated in the selection of, and presentation to, three AAI Public Service Awardees: Representative Chris Van Hollen in 2012, Representative Rosa DeLauro in 2013, and Senator Richard Durbin in 2014. Kovacs also brought AAI concerns to the attention of NIH officials and other leaders in the biomedical research community, ensuring that immunologists' voices were heard in the major debates affecting our members' professional lives.

An AAI member since 1989, Kovacs previously served as a member of the AAI Minority Affairs Committee (2000-2003) and as a faculty member for the 2014 AAI Advanced Course in Immunology.

Kovacs earned her Ph.D. from the University of Vermont in 1984. Following a postdoctoral fellowship at the National Cancer Institute, she joined the faculty of Loyola University Chicago, where she now serves as professor in the Departments of Surgery and of Microbiology and Immunology, director of the Alcohol Research Program, director of Research at the Burn and Shock Trauma Research Institute, and vice chair of Research in the Department of Surgery.

The AAI Distinguished Service Award is presented for outstanding service to the AAI community and the immunology field as a whole.

The Inaugural AAI-BioLegend Herzenberg Award Is Bestowed upon Matthew D. Scharff

Matthew D. Scharff, M.D., Albert Einstein College of Medicine, is the recipient of the first AAI-BioLegend Herzenberg Award. This award is given in recognition of his pioneering work in the development of the monoclonal antibody technique and antibody synthesis, as well as his studies on the development of antibody diversity.

Scharff pioneered early studies fundamental to the understanding of the biochemistry of antibody synthesis. He engineered antibody-producing myeloma cell lines to study the production and assembly of immunoglobulin heavy and light chains, demonstrating both how immunoglobulin polypeptide chains are synthesized on polyribosomes and how the chains subsequently coalesce to form mature immunoglobulin molecules. This work laid the foundation for Scharff's later contributions to the development of methodologies for the generation of monoclonal antibodies, a technique that revolutionized the field of immunology.

Scharff has also made seminal contributions to the mechanistic elucidation of immunoglobulin class-switch recombination and somatic hypermutation. His lab demonstrated that activation-induced cytidine deaminase (AID) was the sole B cell-specific molecule required for somatic mutation by expressing this enzyme in non-B cells to induce this event. His proposal that AID functions by deaminating deoxycytidine in DNA and recruiting translesional polymerases that could potentially introduce mutations into the code was later confirmed by both his own studies and those of Michael S. Neuberger and others. Scharff, along with Betty Diamond, then a postdoctoral fellow in his lab, additionally showed that these somatic mutations arising in B cells during the course of an immune response to foreign antigen could introduce autoreactive antibodies into the B cell repertoire, revealing

paradigm-shifting evidence for how autoantibodies arise in the body. Along with these studies, Scharff has demonstrated that antibodies of differing isotypes but bearing identical variable regions can vary wildly in their immune effects, either exacerbating or protecting against disease.

In addition to his scientific contributions to B cell biology, over the span of his career, Scharff has innovated technologies and methodologies that have immensely benefited the field of immunology. His work with polyethylene glycol demonstrated that this substance was able to increase the frequency of fusion in plasma cells. He also developed monoclonal antibody generation techniques that are still used by academic and industry scientists to generate antibodies with predetermined specificities, a technique instrumental to the development of therapeutic antibodies now used in the clinic.

Colleagues laud Scharff's scientific and directorial capabilities, seeking his counsel for matters ranging from research projects to scientific policy. Arturo Casadevall, professor and chair of the Department of Microbiology and Immunology, Albert Einstein College of Medicine, says, "Dr. Scharff has a reputation that is unparalleled in the scientific community. His counsel is sought for his scientific acumen and his wisdom in developing scientific programs and policy for the scientific community. He is truly an elder statesman of the immunologic and scientific enterprise."

Scharff earned his M.D. from the New York University College of Medicine in 1959, graduating with honors in microbiology. Before attaining his first assistant professorship in the Department of Cell Biology at Albert Einstein College of Medicine in 1964, he was an intern and assistant resident at the Boston City Hospital (1959–1961) and a research associate at the National Institute of Allergy and Infectious Diseases (1961–1963). He has held various professorial, chairman, and director roles at Albert Einstein College of Medicine over the course of his 50-year tenure and has held the position of Distinguished Professor since 2006.

Dr. Scharff is a member of the National Academy of Sciences, the American Academy of Arts and Sciences, and the Phi Beta Kappa Society. Among other honors, Scharff has received Outstanding Investigator Awards from the National Cancer Institute, the New York Academy of Medicine Medal, the Lifetime Achievement Award for Outstanding Teaching from the Albert Einstein College of Medicine, and the Mayor of New York's Lifetime Achievement Award for Excellence in Science and Technology. He was also invited to give a prestigious Harvey Lecture on his groundbreaking studies in the biochemistry of antibody synthesis.

Scharff has been a member of AAI since 1964 and has served AAI as a member of the Committee on Public Affairs. In recognition of the number of successful scientists who have trained in his laboratory, Dr. Scharff was presented the AAI Excellence in Mentoring Award in 1998.

The AAI-BioLegend Herzenberg Award was established in 2014 to honor the memory of Leonard A. Herzenberg. This award is presented annually for outstanding contributions to the field of immunology in the area of B cell biology.

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Open to all IMMUNOLOGY 2015™ attendees. Meeting badge required for entry. Attendees must be at least 21 years of age.

Members in the News

John Kappler, Philippa Marrack, Jeffrey Ravetch Share 2015 Wolf Prize in Medicine Honors

AAI members **John Kappler (AAI '74), Philippa Marrack (AAI '74),** and **Jeffrey Ravetch (AAI '99)** have been named co-recipients of the 2015 Wolf Prize in Medicine for their work on the molecular basis of the immune response. Awarded by Israel's Wolf Foundation, the Wolf Prize in Medicine confers a monetary award of $100,000 which will be shared this year by the co-recipients. Since 1978, the foundation has awarded prizes in the arts and sciences that are presented annually by the Israel president. The five prizes being awarded in 2015 recognize seven scientists and two musicians, who will be honored at a May award ceremony in Tel Aviv.

John Kappler

John W. Kappler, Ph.D., AAI '74, *Investigator, Howard Hughes Medical Institute; Distinguished Professor, Integrated Department of Immunology, National Jewish Health, and Professor of Pharmacology, University of Colorado Health Sciences Center*

John Kappler, in collaboration with Philippa Marrack, with whom he shares a lab group, focuses on unraveling the intricacies of T cell development, function, and structure, with an emphasis on studying the interaction between the T cell receptor (TCR) and foreign/self-peptide bound to a major histocompatibility complex (MHC). The Kappler-Marrack lab was instrumental to determining that T cells simultaneously recognize foreign peptide together with an MHC molecule. Along with others, they identified the TCR, a finding that revolutionized the T cell biology field, proving that T cell recognition of antigen was not contingent on expression of antibody molecules and was distinct from that of a B cell. These studies laid the foundation for their future work that reached into the realms of structural biology, T cell development/function, and the interface between tolerance and autoimmunity. The Kappler-Marrack lab has elucidated the structures of molecules essential to immune cell function, including the TCR-α chain, H2M, and HLA molecules. In studies examining the prevention of self-reactivity, they showed that thymocytes tolerate self-MHC by undergoing clonal deletion in the thymus rather than via suppressive mechanisms. The lab's recent efforts in structural biology continue to identify motifs and conformations that delineate TCR binding to MHC molecules. Other joint projects investigate the intricacies of TCR interactions with peptide:MHC complexes, using high-throughput methodologies to identify peptide:MHC combinations that are recognized by self-reactive T cells in autoimmune diseases, such as diabetes, rheumatoid arthritis, and allergic reactions to the metals nickel and beryllium. The lab group's autoimmunity studies also encompass an investigation of gender bias in the development of some autoimmune diseases, recently identifying a subset of autoreactive B cells that is expanded in aged female mice and is more prevalent in female humans with autoimmune disease. Dr. Kappler's investigations, together with Dr. Marrack's, continue to interrogate the basic operations of the immune system in the hopes of using this knowledge to develop therapies and vaccines useful for combating human disease.

A past AAI Distinguished Lecturer, Kappler has served as an associate editor for *The Journal of Immunology* and was co-recipient, along with Marrack, of the 1995 AAI Behring-Heidelberger Award. Their additional shared honors include the Royal Society's Wellcome Foundation Prize, The Paul Ehrlich and Ludwig Darmstadter Prize (Paul Ehrlich Foundation); and the Louisa Gross Horwitz Prize (Columbia University).

Kappler is a member of the National Academy of Sciences and the Institute of Medicine and a fellow of the American Association for the Advancement of Science. His additional career honors include the Bonfils-Stanton Foundation Award in Science and Medicine; Cancer Research Institute's William B. Coley Award; National Jewish Medical and Research Center Lifetime Achievement Award; National Jewish Health Outstanding Scientific Achievement in Basic Research Award; Abraham J. Kauvar Presidential Award; Graduate School Dean's Mentoring Award, University of Colorado Health Sciences Center; Ernst W. Bertner Memorial Award, MD Anderson Cancer Center; Arthur B. Lorber Distinguished Service Award, National Jewish Center for Immunology and Respiratory Medicine; and Feodor Lynen Medal for Special Achievement and Distinguished Service Award.

Kappler's review panel appointments include service on behalf of NIH (e.g., Transplantation Biology and Immunology Committee), *Immunity* (associate editor), Reticuloendothelial Society (journal advisory editor),

Damon Runyon Foundation for Cancer Research (Fellowship Review Committee), and University of California T Cell Receptor Conference (organizer, 1987).

A native of Baltimore, Kappler received his B.S. in chemistry from Lehigh University and his Ph.D. in biochemistry from Brandeis University, after which he served as a postdoctoral fellow in the Richard Dutton lab at the University of California at San Diego. In 1973, he was appointed an assistant professor of oncology at the University of Rochester and became an associate professor in 1978. He joined National Jewish as a senior faculty member in 1979 and the University of Colorado Health Science Center as an associate professor the following year, rising to full professor of microbiology/immunology and of medicine in 1984. He has been an HHMI investigator since 1986 and a distinguished professor since 1993 and has held his pharmacology department appointment since 1998.

Phillippa Marrack

Philippa Marrack, Ph.D., AAI '74, *Investigator, Howard Hughes Medical Institute; Chair, Department of Biomedical Research, and Professor, Integrated Department of Immunology, National Jewish Health and University of Colorado Health Sciences Center*

Pippa Marrack studies the specificity, survival, and function of T cells. Together with John Kappler, she is known for finding that T cells must simultaneously recognize MHC and a component of the infectious organism to be activated following encounter with an infected cell. This discovery led to the pair's definitive characterization of the TCR in 1983, as well as an explanation of the mechanism of action of bacterial superantigens. Early studies also revealed that T cells bearing TCRs specific for self-antigens died in the thymus, presumably leaving only those specific for foreign antigens to mature and enter the periphery. More recent work in Dr. Marrack and Dr. Kappler's joint group continues to address the structural basis for T cell activation, identifying evolutionarily conserved amino acids of TCRs that are crucial for interaction with MHC and working to understand how T cells can distinguish between the different highly polymorphic alleles of MHC. Structural knowledge is also being applied to the study of human diseases caused by T cell recognition of antigens, including metal ions, such as beryllium and nickel. Investigation of the mechanisms of action of alum, a very commonly used yet poorly understood adjuvant, has provided information useful to many types of vaccines and has led to the design of a new type of influenza vaccine. In addition, studies of autoimmunity have led to the identification of a B cell subset present in elderly female, but not male, mice and in animals and patients with autoimmune disease that may contribute to the development of autoimmunity and the gender bias of some autoimmune diseases. The lab also studies the roles of Bcl-2 and related molecules in controlling T cell survival and works to develop new technologies, such as baculovirus-based libraries that support studies of T cell specificity. The central goal of Marrack and Kappler's diverse work is to better understand immune responses with the hope that this knowledge will eventually lead to advances applicable to human health.

Marrack served as AAI president in 2000–2001 and was a member of the AAI Council from 1995 to 2002. In 2003, she was awarded the AAI Lifetime Achievement Award and was co-recipient with John Kappler of the 1995 AAI Behring-Heidelberger Award. She is a past AAI Distinguished Lecturer and has served on multiple occasions as a major symposium chair and speaker and as an abstract programming chair in connection with the AAI annual meeting. In addition to her service on AAI Council, Marrack has served on the AAI Nominating Committee (including as chair) and the AAI Program Committee, as an associate and section editor for *The Journal of Immunology*, and as an AAI delegate to the general assembly of the International Union of Immunological Societies (IUIS). Her IUIS service included election to two terms on the IUIS Council, including as IUIS president (2001-2004).

Marrack is a member of the National Academy of Sciences, Institute of Medicine, and Colorado Women's Hall of Fame and a fellow of the American Academy of Arts and Sciences and the Royal Society. With Dr. Kappler, she has shared the Royal Society's Wellcome Foundation Prize, the Paul Ehrlich and Ludwig Darmstadter Prize (Paul Ehrlich Foundation), and the Louisa Gross Horwitz Prize (Columbia University). Her additional career honors include: L'Oreal UNESCO for Women in Science Award; Bonfils Stanton Award for Science; FASEB Excellence in Science Award; Irvington Institute Scientific Leadership Award in Immunology; William B. Coley Award for Distinguished Research in Fundamental Immunology, Cancer Research Institute; Avery-Landsteiner Prize, German Society for Immunology; Christopher Columbus Discovery Award for Biomedical

Research; Rabbi Shai Schacknai Memorial Prize; Denver Business Journal scientist award; National Jewish Medical and Research Center Lifetime Achievement Award; Pearl Meister Greengard Prize, Rockefeller University; Howard Taylor Ricketts Prize, University of Chicago; Dickson Prize in Medicine, University of Pittsburgh; and Ernst W. Bertner Memorial Award, MD Anderson Cancer Center.

Marrack has served on numerous scientific review panels on behalf of NIH (e.g., multiple study sections; Center for Scientific Review; NIH Director's New Innovator Awards; NIAID Blue Ribbon Panel on Adjuvant Research; NIAID Challenge Grants; NIAID Blue Ribbon Panel on Influenza Research; NIAID Council; and Experimental Immunology Branch, NCI) and the National Academy of Sciences (e.g., National Research Council). She has held additional review panel appointments on behalf of HHMI, Gates Foundation, National Center for Complementary and Alternative Medicine, Wellcome Trust, American Academy of Arts and Sciences, Public Library of Science, Pew Foundation, Molecular Medicine Society, American Society for Cell Biology (Council), American Cancer Society (Council), Cancer Research Institute, American Foundation for Aging Research, Sandler Program for Asthma Research, L'Oreal Awards to Women in Science, Helen Hay Whitney Fellowships, Damon Runyon Fellowships, FASEB Excellence in Science Award, Lasker Award, Sandoz Award, Paul Ehrlich and Ludwig Darmstädter Prize, New York Academy of Sciences, European Research Council, Scientific Foundation of Ireland, Oklahoma Medical and Research Foundation, Baylor University, Joslin Diabetes Center, Rockefeller University, Trudeau Institute, and Karolinska Institute. And she has served as an editorial board member or reviewer on behalf of journals including the *Annual Review of Cell and Developmental Biology, Annual Review of Immunology, Annual Review of Cell Biology, Cell, Cellular Immunology, Current Opinion in Immunology, The FASEB Journal, Genome Biology, Immunity, Journal of Autoimmunity, Journal of Biology, Journal of Experimental Medicine, Molecular Medicine, PLOS Biology, Proceedings of the National Academy of Sciences USA, Science,* and *Therapeutic Immunology.*

A native of England, Marrack is a biochemistry graduate (with first-class honors) of Cambridge University, where she earned her Ph.D. in biological sciences. She undertook postdoctoral training at Cambridge's Girton College and the Medical Research Council (UK) Laboratory for Molecular Biology, then as a Damon Runyon Society for Cancer Research fellow at the University of California, San Diego, and subsequently as a postdoctoral fellow at the University of Rochester. There, she was appointed an assistant professor in 1975, rising to associate professor in 1979. That year, she was appointed a member of the Department of Medicine at Denver's National Jewish Hospital and Research Center. In 1980, she joined the faculty of the University of Colorado Health Sciences Center as an associate professor; she was appointed a full professor in 1985 and subsequently served as head of the Division of Basic Immunology. She has been an HHMI investigator since 1986 and has held her appointment as biomedical research chair since 2014.

Jeffrey Ravetch

Jeffrey V. Ravetch, M.D., Ph.D., AAI '99, *Theresa and Eugene M. Lang Professor and Head, Leonard Wagner Laboratory of Molecular Genetics and Immunology, Rockefeller University*

Jeff Ravetch and his lab colleagues analyze the influence of variations in B cell antibody specificity and immune cell Fc receptor expression over the function and dysregulation of cellular immunity, focusing on the area of Fc receptor biology. Dr. Ravetch was the first to clone and study Fc receptors for immunoglobulin G (IgG), showing that these molecules dramatically impact the effector functions of immune cells. By knocking out activating Fc receptors, he demonstrated that these molecules were essential to initiating the immune complex inflammatory response. His lab subsequently showed that expression of inhibitory IgG Fc receptors on immune cells was critical for the maintenance of peripheral tolerance; mice lacking these receptors, including FcγRIIB, develop spontaneous and chronic autoimmune disease. His group later showed that partially restoring FcγRIIB receptor expression in autoimmune mice deficient for this molecule can restore tolerance and prevent autoimmunity induction. His early interest in Fc receptors for IgG and their involvement in cellular immunity led him to an investigation of the mechanism of action behind intravenous IgG therapy, a seemingly paradoxical treatment for people with autoimmune disorders (which often involve the overproduction of self-reactive IgG antibodies). His group made the key finding that a small portion of IgGs used in the therapy contained sialylated Fc receptors, which switched IgGs from promoting inflammatory to anti-inflammatory responses. His lab has further dissected the mechanism of

action behind intravenous IgG therapy, showing that it suppresses inflammation through a pathway involving CD209, a molecule discovered by Ravetch's lab. He also continues to explore how structural and biochemical modifications of antibodies and Fc receptors can affect their therapeutic potential, work that has incited a critical change in the strategic design of antibody therapeutics. In addition to his work on Fc receptors, Ravetch discovered the first chemokine molecule, IP-10, and his early work in malaria research contributed to the basic understanding of the genetic variability in *Plasmodium falciparum*.

An AAI Distinguished Lecturer in 2011, Ravetch was the recipient of the AAI-Huang Foundation Meritorious Career Award (now AAI-Life Technologies Meritorious Career Award) in 2005. He is a past member of the AAI Committee on Public Affairs and has been a major symposium speaker on multiple occasions at the AAI annual meeting.

Ravetch is a member of the National Academy of Sciences and Institute of Medicine (IOM) and fellow of the American Academy of Arts and Sciences and the American Association for the Advancement of Science. His additional career honors include: Sanofi-Institut Pasteur Award; Gairdner International Award; William Coley Award, Cancer Research Institute (CRI); Lee C. Howley, Sr., Prize for Arthritis Research; NIH MERIT Award; Boyer Research Award, Memorial Sloan-Kettering Cancer Center; Burroughs Wellcome Fund Award in Molecular Parasitology; Pew Scholar Award; Josephson Lecture, Downstate Medical College; Fahey/Rose Founders Lecture, Clinical Immunology Society; Heidelberger-Kabat Lecture, Columbia University; Grabar Lecture, French Society of Immunology; R. E. Dyer Lecture, NIH; Ecker Lecture, Case Western Reserve University; and Kunkel Lecture, Henry Kunkel Society.

A co-founder and co-organizer of the annual Woods Hole Molecular Parasitology Meeting, Ravetch has served on multiple study sections and review panels, including at NIH (Task Force on Immunology and Aging), IOM (Committee on Malaria Vaccines), CRI, Gairdner Foundation, Irvington Institute for Medical Research, Damon Runyon Foundation, and Sanofi-Pasteur Award. He has held editorial appointments with the *Journal of Experimental Medicine* and *International Immunology* and served as a consultant or scientific advisor for Exelexis Pharmaceuticals, Genentech, Medimmune, MabVax, Millennium Pharmaceuticals, Momenta Pharmaceutical, Morphotek, Novartis, Portola Pharmaceutical, Regeneron Pharmaceuticals, Suppremol, and Xencor. He is a founder/co-founder of companies including MacroGenics and Virdante Pharmaceuticals.

A native of New York City, Ravetch is a molecular biophysics/biochemistry and English graduate of Yale University. He earned his Ph.D. from the Rockefeller University, where he studied under Norton Zinder and Peter Model, and received his M.D. from Cornell University Medical College. He subsequently completed postdoctoral training with Philip Leder at NICHD, NIH, while serving as a member of the U.S. Public Health Service. In 1982, he was appointed an assistant professor at Cornell University Medical College and an assistant member of the Memorial Sloan-Kettering Cancer Center, later achieving associate and then full rank at both institutions. After having served as a guest investigator at Rockefeller's Laboratory of Cellular Physiology and Immunology during the 1980s, Ravetch joined Rockefeller as a professor in 1996 and has held the Lang Professor appointment there since 1997. He is a faculty member in the Tri-Institutional M.D.-Ph.D. Program jointly administered by Rockefeller, the Weill Medical College and Graduate School of Medical Sciences of Cornell University, and the Sloan-Kettering Institute at Memorial Sloan Kettering Cancer Center. Since 1993, he has also held an adjunct professor appointment at Jefferson Medical College and Jefferson Cancer Institute.

Frank W. and Shirley Fitch Honored at University of Chicago

Leading researchers in the scientific lineage of Frank W. Fitch, M.D., Ph.D. (AAI '61), Albert D. Lasker Professor Emeritus in Pathology and the Ben May Institute, joined with members of the Fitch family, University of Chicago colleagues, current and past trainees, and other guests to honor Dr. and Mrs. Fitch at the inaugural Frank W. and Shirley Fitch Lecture on October 6 at the University of Chicago.

Frank Fitch and daughter Peggy Fitch Rubenstein flanked by Fitch grandchildren Daniel and Emily Rubenstein

The inaugural lecture, "Immunology Taught by Humans," was presented by Mark M. Davis, Ph.D. (AAI '88), the Burt and Marion Avery Family Professor of Immunology at Stanford University and director of the Stanford Institute for Immunity, Transplantation, and Infection.

Frank Fitch and lecturer Mark Davis

As detailed previously in the *AAI Newsletter* (October-November 2014 issue, p. 17), the lectureship was established in 2014 through the efforts of Dr. Fitch's former trainees and colleagues at the University of Chicago and elsewhere. Among those spearheading the initiative were AAI members Jeffrey A. Bluestone, (AAI '82), UCSF, Thomas Gajeweki (AAI '96), University of Chicago, and past former AAI President Arthur Weiss (AAI '81), UCSF. They were joined at the inaugural lecture by many additional AAI member attendees, including former AAI President Katherine Knight (AAI '68), Loyola University Chicago Stritch School of Medicine, AAI Program Chair Wendy Havran (AAI '85), Scripps Research Institute, and AAI Executive Director Michele Hogan (AAI '88), Bethesda, MD. In her role as executive editor of *The Journal of Immunology (The JI)*, Hogan worked closely with Fitch during his tenures as Chair of the Publications Committee, Editor-in-Chief of *The JI,* and ex officio member of the AAI Council (1995-2003). Hogan recalled that, "Frank came into the position as Editor-in-Chief (EIC) for *The JI* 100 percent committed to his stewardship of the oldest and most important journal in the field. It was neither a part-time nor a side-job for him. He was determined to advance the standing of the journal, not only by publishing the highest quality science but also by establishing unquestionable integrity for the peer-review process. He was determined to gain the trust of the scientists who read and published in *The JI*. To that end, he did not tolerate late or deficient reviews; worked very hard on the turn-around-time from submission to publication; and he gathered Deputy and Section Editors who agreed to meet his standards…which were very, very high. Frank's insistence on scientific integrity, respect for authors, and the communication of science are values we uphold to this day."

The lecture hall in the University of Chicago Biological Sciences Learning Center held a politely waiting audience until about five minutes before the start of the event when trainees flooded in and filled the hall to standing-room only. The mood quickly flipped to noisy and joyful, and after the opening honors, Dr. Fitch was given a standing ovation amid much whistling. True to character, Dr. Fitch was humbly and quietly absorbing it all, waving everyone "down" when he felt the attention was too much. But there was no suppressing the admiration for one of science's true icons. It was also special that the tribute was proudly attended by Fitch's daughter, Peggy Fitch Rubenstein,

and grandchildren, Daniel Rubenstein and Emily Rubenstein. Due to health reasons, Mrs. (Shirley) Fitch was unable to attend, but she was present in spirit and in the hearts of many who know and admire her.

Mark Davis delivered a brilliant and humorous lecture —deeply honored to be the first speaker in this lectureship. Following the lecture was a reception for all attendees, followed by yet another reception and dinner off-campus. Here friends and family "roasted" Frank late into the night with fond (and typically very humorous) anecdotes about their interactions with him over the years and the influence he had on their lives. Collectively, they conveyed a sense of the sweep of Dr. Fitch's remarkable legacy and why he has meant so much—as a scientist, teacher, and mentor—to so many. Frank himself did not let the evening pass without comment. He summed up the event, his career, friendships— and the human condition—with a limerick and a toast.

Current plans call for future Frank W. and Shirley Fitch Lectureships to be presented annually in late September or early October, according to Geoffrey L. Greene, Ph.D., chair of the Ben May Department for Cancer Research. Lecturers will be selected by a panel comprised of Dr. Greene and several colleagues representing a blend of immunologists and cancer biologists.

"The plan," Greene says, "is to choose lecturers who represent the interface of cancer biology and immunology, to reflect the interests of the Ben May Department for Cancer Research, the Committee on Cancer Biology (CCB), and the Committee on Immunology (COI)." In addition to Greene, selection panelists include Ben May department faculty members Kay Macleod, CCB chair; Alexander Chervonsky (AAI '96), COI chair; Tom Gajewski (AAI '96); and Peter Savage (AAI '11).

It is anticipated that the annual autumn lecture will represent the opening seminar for the COI and CCB, both of which have year-long seminar series that extend through June of each year.

Prior to his election to AAI Council, tenure as AAI president, and appointment as Editor in Chief for *The JI*, Fitch provided service on numerous AAI committees, including the Membership, Publications, Awards, and Nominating Committees. He was the AAI representative to the FASEB Public Affairs Committee and the FASEB Board—serving, ultimately as the FASEB president ('93). Fitch's AAI honors include selection as a Distinguished Lecturer at the annual meeting ('87) and as the recipient of AAI Career Awards including the Lifetime Achievement Award ('96), Distinguished Service Award ('02), and Excellence in Mentoring Award ('04).

Frank Fitch and Michele Hogan

Tom Gajewski, Maria Luisa Alegre, and Frank Fitch

Art Weiss, Wendy Havran, Frank Fitch, and Jeff Bluestone

See the *AAI Newsletter* article on the creation of the Frank W. and Shirley Fitch Lectureship http://www.aai.org/About/Publications/AAI_Newsletter/PDFs/2014/AAI_NL_Sep-Oct_2014.pdf

See also: Fitch Inaugural Lecture Photo Gallery, The Ben May Department for Cancer Research (University of Chicago) website: *https://benmay.uchicago.edu/gallery/fitch-inaugural-lecture-photo-gallery*

New AAI Career Resource to Be Launched at IMMUNOLOGY 2015™

Early-career PIs, each year, find a wealth of career development resources and opportunities at the AAI annual meeting. See pages 46-49 for the many career development sessions and resources available during IMMUNOLOGY 2015™.

This year, though, you'll learn about yet another career resource for AAI members, one that is to be available year round—the AAI Career Advisory Board (CAB) being launched by the AAI Committee on the Status of Women (CSOW). The CAB is a referral service for connecting young PIs seeking guidance on specific career issues with more senior PIs outside their own institutions offering experience and insights on particular topics.

This new AAI service offers one-on-one career advice for new PIs struggling with such issues as when to submit that first grant, how to hire a technician/postdoc, and how to balance research with teaching/service obligations. "New PIs opening their first labs are facing many new issues and are often reluctant to seek guidance from their own colleagues," says Virginia S. Shapiro (AAI '04), CSOW chair. "We want to offer young faculty the opportunity to ask questions about lab development and management issues from senior colleagues outside their home institution. This service is an extension of the Careers in Science Roundtable discussions at the annual meeting. Beyond questions on career advice, we defer to the members' home institutions' mentoring programs and to other AAI programs, such as GRIP, for assistance with grant writing or review."

"We want to emphasize that, although this service is launched by the CSOW, the program is open to all (both men and women). In fact, we are soliciting men as well as women as advisors who agree to be 'on call,'" says Shapiro.

Stop by the AAI Booth (#901) during IMMUNOLOGY 2015™ to learn more about this exciting new program.

New Lecture Name, Same Outstanding Science

A lecture series that has been a feature of the AAI annual meeting for more than a decade will bear a new name – the AAI Vanguard Lecture – at IMMUNOLOGY 2015™ in New Orleans.

Known since its inception in 2003 as the AAI Minority Affairs Committee (MAC) Guest Lecture, this annual talk has highlighted the high-caliber scientific accomplishments of AAI members who are from ethnic groups historically under-represented in biomedical research. AAI has provided this annual forum with support in part from a FASEB grant from the National Institute of General Medical Sciences, NIH.

The new name for the lecture was selected to eliminate any perception that the event might be geared toward members of under-represented groups. The AAI Vanguard Lecturers are investigators at the forefront of biomedical research, and the lecture is meant to be of interest to all scientists interested in the presenter's cutting edge research. The new name also connotes researchers whose achievements in science serve as excellent models of professional development for scientists of all backgrounds.

The 2015 AAI Vanguard Lecture, **"Linking pathogen, virulence, immunity, and the microbiota,"** will be presented by **Gabriel Nuñez, M.D.** (AAI '95), the Paul de Kruif Endowed Professor in the Department of Pathology at the University of Michigan. The lecture will take place on Monday, May 11, 2015, at 11:30 AM in Room 208-209 of the Ernest N. Morial Convention Center in New Orleans.

Listed in order from 2003 to 2014, past presenters in the lecture series include:

- Richard A. Goldsby, Ph.D. (AAI '95)
- Randy R. Brutkiewicz, Ph.D. (AAI '89)
- Juan Carlos Zúñiga-Pflücker, Ph.D. (AAI '96)
- Diana M. Lopez, Ph.D. (AAI '76)
- Avery August, Ph.D. (AAI '99)
- Juan J. Lafaille, Ph.D. (AAI '05)
- Emil R. Unanue, M.D. (AAI '66)
- Albert Zlotnik, Ph.D. ('85)
- Olivia M. Martinez, Ph.D. (AAI '91)
- Charles E. Egwuagu, M.P.H., Ph.D. (AAI '02)
- Esteban Celis, M.D., Ph.D. (AAI '80)
- Arturo Casadevall, M.D., Ph.D. (AAI '98)

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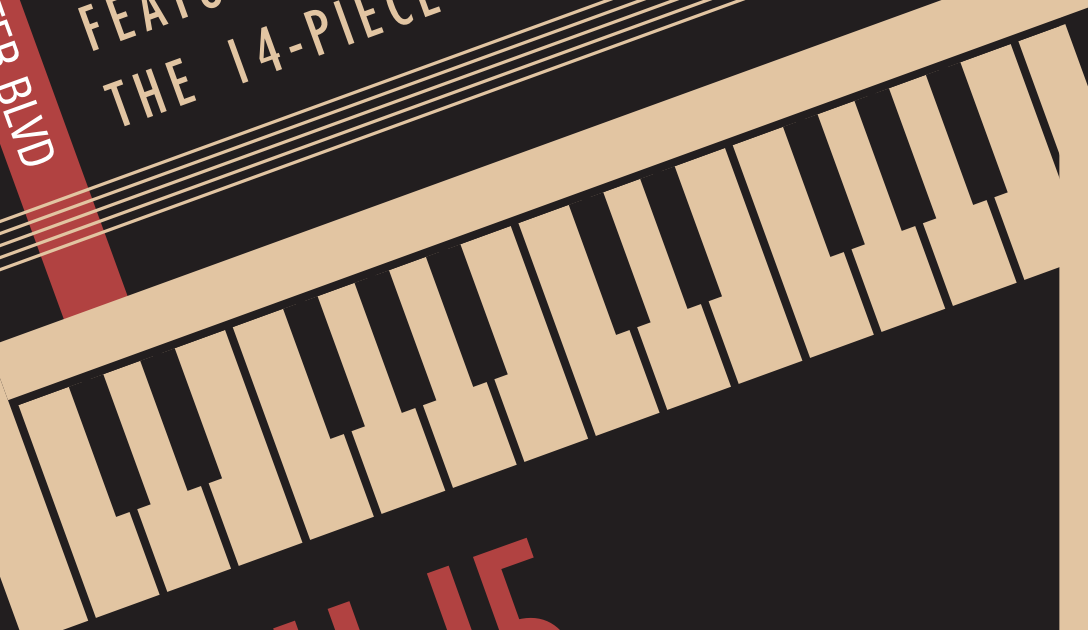

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* Lagniappe: a Creole expression pronounced [lay-nee-ap] and meaning "a little something extra"

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AAI PRESIDENT'S PROGRAM

AAI President's Address

FRIDAY, MAY 8, 5:00 PM
Ernest N. Morial Convention Center, The Great Hall

Linda A. Sherman
Scripps Research Institute, AAI President

Using Autoimmunity to Inform Tumor Immunity

Steven J. Burakoff, The Tisch Cancer Institute
Introduction

Linda A. Sherman

AAI President's Symposium: *Partners in Crime and T Cell Sleuths*

MONDAY, MAY 11, 12:30 PM – 2:30 PM
The Great Hall

Chair:
Linda A. Sherman, Scripps Research Institute, AAI President

Speakers:
Matthew F. Mescher, University of Minnesota
Programming of naive CD8 T cells to develop function and memory

William R. Heath, University of Melbourne
Tissue-resident memory in viral and parasite immunity

Linda S. Wicker, University of Cambridge
From autoimmune disease genetics to immune-based therapies

Charles D. Surh, Academy of Immunology and Microbiology, Institute for Basic Science, Pohang, Korea
Regulation of immune homeostasis to commensal bacterial and dietary antigens

Matthew F. Mescher

William R. Heath

Linda S. Wicker

Charles D. Surh

AAI President's Symposium

Partners in Crime and T Cell Sleuths

Linda A. Sherman
AAI President

When I first learned that my colleagues had honored me with the privilege of representing them on AAI Council and that one day I would become president of AAI, I thought about how lucky I was to have gone into research. Of course, luck played a part in my being accorded this honor, but a larger part was due to the patience of my mentors and the hard work and talent of the trainees I have had the privilege to mentor. And then there are the colleagues with whom I have collaborated over the years, each of whom greatly enriched the scope of my research, and, importantly, whom I treasure as dear friends.

This year's President's Symposium takes a slightly different direction from most. Rather than focusing on a single topic, I have focused on the research of several highly accomplished immunologists who also happen to have been my highly valued collaborators. If there is a scientific link in their research, it is that at some point in their careers, our research intersected. These are my close collaborators and friends—or, as I call them, my "partners in crime." I apologize for such self-indulgence, but I considered this opportunity to bring together, in one session, colleagues whom I greatly admire and respect to be one of the great privileges associated with my tenure as president of AAI!

Matthew F. Mescher. When I went to Harvard Medical School to work as a postdoctoral fellow with Steve Burakoff and Baruj Benacerraf, I selected a project that was at the very heart of T cell biology and a great mystery at that time, the molecular basis for TCR recognition. We knew the MHC was important, but there was great debate about whether other molecules contributed as well. Matthew Mescher was a newly minted assistant professor who had come from Strominger's lab and wanted to address this question by purifying MHC molecules. Together, we demonstrated that MHC molecules contained all the information required for induction of a secondary response by alloantigen-specific cytolytic T lymphocytes. Of course other information is required for naive T cell activation, such as costimulation as demonstrated by our past AAI president Marc Jenkins. Matt Mescher has been at the forefront of demonstrating the important role of yet a third signal, inflammatory cytokines, which we will hear about in this symposium.

William R. Heath. Years later at The Scripps Research Institute (TSRI), Bill Heath and I further demonstrated that allogeneic MHC molecules contained peptides that were also required for TCR recognition. Bill, who was a postdoctoral fellow at the time, then went on to a highly successful career in cellular immunology. Recently, he and his long-term collaborator Frank Carbone have turned their attention to the importance of tissue-resident T cells in defense against pathogens, a field they have helped to pioneer.

Linda S. Wicker. I first met Linda Wicker at a conference on diabetes when I talked about a new model my lab had developed for looking at the activation of islet antigen-specific CD8 T cells in draining lymph nodes of diabetes-prone NOD mice. Linda wrote the book on the genetic basis of the development of diabetes in NOD mice and wondered whether our model could be used to dissect the cellular consequences of the genetic polymorphisms that contributed to disease. This led to some of the most stimulating scientific conversations I have ever had and to a long-term collaboration. Her work on the genetics of type 1 diabetes and the immunological consequences in mice and humans has led to numerous breakthroughs in the field and, now, to an immunotherapeutic approach to the disease that we will hear about in this symposium.

Charles D. Surh. Charlie Surh started as a postdoctoral fellow at TSRI with Jon Sprent and advanced through the ranks to become professor. Their talent and ingenuity in the areas of thymic development, tolerance, and homeostasis is legendary. Recently, Charlie's research on homeostasis led him to South Korea, where he was provided an opportunity to set up his own institute to study the role of gut antigens in lymphocyte homeostasis and development of the immune system. He has the only mouse colony in the world that has not only germ-free, but also antigen-free mice. This work has provided a window into the fundamental role of antigen in the development of the immune system, a role we will hear about in this symposium.

AAI DISTINGUISHED LECTURERS

SATURDAY, MAY 9
6:00 PM, THE GREAT HALL

Dennis R. Burton
Scripps Research Institute
Broadly neutralizing antibodies evolved to counter the structure and variability of HIV and provide a basis for vaccine design

SUNDAY, MAY 10
6:00 PM, THE GREAT HALL

Christine A. Biron
Brown University
Fuzzy borders in innate and adaptive immunity: experience conditions NK and CD8 T cell responses during viral infection

MONDAY, MAY 11
6:00 PM, THE GREAT HALL

Albert S. Bendelac
University of Chicago
Innate and innate-like lymphocytes

AAI Lifetime Achievement Award Presentation

FRIDAY, MAY 8, 5:00 PM
The Great Hall

Chair:
Linda A. Sherman, Scripps Research Institute, AAI President

Award Recipient:
Jonathan Sprent, Garvan Institute of Medical Research

AAI President Linda A. Sherman will introduce the awardee and present the award prior to the start of the President's Address.

The AAI Lifetime Achievement Award is the highest honor bestowed by the AAI Council upon an AAI member. This award recognizes a deserving member for a career of scientific achievement and for contributions to AAI and fellow immunologists.

AAI Distinguished Service Award Presentation

SATURDAY, MAY 9, 1:00 PM
Room 206-207

Chair:
M. Michele Hogan, AAI Executive Director

Award Recipient:
Elizabeth J. Kovacs, Loyola University Chicago Stritch School of Medicine

AAI Executive Director M. Michele Hogan will introduce the awardee and present the award during the AAI Business Meeting & Awards Presentations session.

This Distinguished Service Award recognizes Dr. Kovacs for outstanding service to AAI and the immunology community as member and Chair of the AAI Committee on Public Affairs, 2007–2014.

AAI-BD Biosciences Investigator Award Presentation and Lecture

Generously supported by BD Biosciences

SATURDAY, MAY 9, 4:30 PM – 5:30 PM
The Great Hall

Chair:
Linda A. Sherman, Scripps Research Institute, AAI President

Award Recipient:
Thirumala-Devi Kanneganti, St. Jude Children's Research Hospital
Regulators of inflammatory responses

AAI President Linda A. Sherman and BD Biosciences Vice President of Market Development Robert Balderas will introduce the awardee and present the award immediately prior to Dr. Kanneganti's lecture.

The AAI-BD Biosciences Investigator Award recognizes an early-career investigator who has made outstanding contributions to the field of immunology.

AAI-BioLegend Herzenberg Award Presentation

Generously supported by BioLegend

SATURDAY, MAY 9, 6:00 PM
The Great Hall

Chair:
Linda A. Sherman, Scripps Research Institute, AAI President

Award Recipient:
Matthew D. Scharff, Albert Einstein College of Medicine

AAI President Linda A. Sherman and Leonore A. Herzenberg, Professor (Research) of Genetics, Stanford School of Medicine, will introduce the awardee and present the award prior to the start of Saturday's Distinguished Lecture.

The AAI-BioLegend Herzenberg Award, named in honor of Leonard Herzenberg, recognizes outstanding research contributions to the field of immunology in the area of B cell biology.

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AAI-Steinman Award for Human Immunology Research Presentation and Lecture

SUNDAY, MAY 10, 4:30 PM – 5:30 PM

The Great Hall

Chair:
Linda A. Sherman, Scripps Research Institute, AAI President

Award Recipient:
Mary Ellen Conley, Rockefeller University
Patients with defects in B cell development

AAI President Linda A. Sherman will introduce the awardee and present the award immediately prior to Dr. Conley's lecture.

The AAI-Steinman Award for Human Immunology Research, named in honor of Ralph Steinman, recognizes an individual who has made significant contributions to the understanding of immune processes underlying human disease pathogenesis, prevention, or therapy.

2015 FASEB Excellence in Science Award Presentation and Lecture

Sponsored by the Federation of American Societies for Experimental Biology (FASEB)

MONDAY, MAY 11 - 10:15 AM – 11:15 AM

Room 208-209

Chair:
Virginia Shapiro, Mayo Clinic; AAI Committee on the Status of Women Chair

Co-chair:
Margaret K. Offermann, Immediate Past President, FASEB

Award Recipient:
Diane E. Griffin, Johns Hopkins Bloomberg School of Public Health
The immune response and clearance of acute viral infections

The FASEB Excellence in Science Award is given in recognition of outstanding achievement by women in biological science. Recipients have furthered progress in a particular discipline through excellence in research.

AAI Excellence in Mentoring Award Presentation

MONDAY, MAY 11, 12:30 PM

The Great Hall

Chair:
Linda A. Sherman, Scripps Research Institute, AAI President

Award Recipient:
Rafi Ahmed, Emory University School of Medicine

AAI President Linda A. Sherman, Susan M. Kaech, Yale University, and E. John Wherry, University of Pennsylvania, will introduce the awardee and present the award prior to the start of the President's Symposium.

The AAI Excellence in Mentoring Award recognizes exemplary career contributions to a future generation of scientists.

AAI-Thermo Fisher Meritorious Career Award Presentation and Lecture

Generously supported by Thermo Fisher Scientific

MONDAY, MAY 11, 4:30 PM – 5:30 PM

The Great Hall

Chair:
Linda A. Sherman, Scripps Research Institute, AAI President

Award Recipient:
Ronald N. Germain, National Institute of Allergy and Infectious Diseases, National Institutes of Health
Developing a quantitative spatiotemporal understanding of immunity using imaging and systems biology

AAI President Linda A. Sherman and Thermo Fisher Scientific Senior Market Development Manager Jeff Croissant will introduce the awardee and present the award immediately prior to Dr. Germain's lecture.

The AAI-Thermo Fisher Meritorious Career Award recognizes a mid-career scientist for outstanding research contributions to the field of immunology.

AAI BUSINESS MEETING & AWARDS PRESENTATIONS

SATURDAY, MAY 9, 1:00 PM - 2:30 PM

Room 206-207

AAI reports on the "state of the association" to its members at every AAI annual meeting. Members will hear from the Executive Director, the Secretary-Treasurer, the Editor-in-Chief of *The Journal of Immunology* (*The JI*), and the Chair of the Committee on Public Affairs on the financial standing of AAI, the status of *The JI*, important public policy issues, and other items of interest for the membership. Special 2015 AAI awards will also be presented during this session.

AAI annually provides more than 700 AAI meeting Travel Awards and Grants to recognize the promise and bolster the professional development of investigators of all career stages, including underrepresented scientists and trainees. Travel award and grant presentations and acknowledgments will include:

Presentations

- AAI Distinguished Service Award
- AAI-Thermo Fisher Trainee Achievement Awards
- Chambers-eBioscience Memorial Award
- Lefrançois-BioLegend Memorial Award
- Lustgarten-eBioscience Memorial Award
- Pfizer-Showell Travel Award

Acknowledgments

- AAI Early Career Faculty Travel Grants*
- AAI Laboratory Travel Grants*
- AAI Underrepresented Scientist Travel Awards
  Sponsored by FASEB MARC Program under a grant from NIGMS, NIH [FASEB MARC Program: T36-GM08059-32]
- AAI Undergraduate Faculty Travel Grants
- AAI Trainee Abstract Awards*
- AAI Trainee Poster Awards

* *Supported in part by BD Biosciences*

SATURDAY, MAY 9, 8:00 AM – 11:30 AM

Major Symposium A: Realizing the Potential of Cancer Immunotherapy

Chairs:

Jedd D. Wolchok, Memorial Sloan Kettering Cancer Center

Padmanee Sharma, University of Texas MD Anderson Cancer Center

Speakers:

Jedd D. Wolchok, Memorial Sloan Kettering Cancer Center
Combined checkpoint blockade

Padmanee Sharma, University of Texas MD Anderson Cancer Center
Immune checkpoint therapies: clinical success and next steps

Holbrook Kohrt, Stanford Cancer Institute
Combination monoclonal antibody therapy: dual tumor and immune targeting

Suzanne L. Topalian, Johns Hopkins University School of Medicine
PD-1 pathway blockade in cancer therapy: new frontiers

Pramod K. Srivastava, University of Connecticut School of Medicine
What does a host-protective tumor-specific neo-antigen look like?

Steven A. Rosenberg, NCI, NIH
The curative potential of T cell transfer immunotherapy for human cancer

Major Symposium B: The Microbiota in Immunity and Inflammation

Chairs:

Wendy S. Garrett, Harvard School of Public Health

Yasmine Belkaid, NIAID, NIH

Speakers:

Yasmine Belkaid, NIAID, NIH
From mutualism to parasitism: context and consequences

Wendy S. Garrett, Harvard School of Public Health
The gut microbiome in colitis and colorectal cancer

Eric G. Pamer, Memorial Sloan Kettering Cancer Center
Microbiota-mediated defense against intestinal infections

Ami S. Bhatt, Stanford University
Exploring the composition of the human superorganism: the microbiome in an immunocompromised host

Bana Jabri, University of Chicago
Harnessing the interplay between commensals and pathogens in septic shock

Thaddeus S. Stappenbeck, Washington University School of Medicine
Commensal-host interactions in the intestine and their relationship to disease pathogenesis

SUNDAY, MAY 10, 8:00 AM – 11:30 AM

Major Symposium C: Looking Within: Mechanisms of Cytosolic Immune Surveillance

Chairs:

Russell E. Vance, HHMI, University of California, Berkeley

Zhijian 'James' Chen, HHMI, University of Texas Southwestern Medical Center

Speakers:

Russell E. Vance, HHMI, University of California, Berkeley
Mechanisms and consequences of inflammasome activation

Michaela U. Gack, Harvard Medical School
RIG-I-like receptor regulation in virus infection and immunity

Edward A. Miao, University of North Carolina at Chapel Hill
Inflammasomes in host defense

Sunny Shin, University of Pennsylvania Perelman School of Medicine
Overcoming pathogen-encoded virulence activities to initiate innate immune defense

Zhijian 'James' Chen, HHMI, University of Texas Southwestern Medical Center
Innate immune sensing and signaling of cytosolic DNA

Thomas F. Gajewski, University of Chicago
Innate immune sensing of tumors via the host STING pathway

Major Symposium D: Lymphatics and Stroma: Key Players in the Specialized Lymphoid Organ Niche

Chairs:

Gwendalyn J. Randolph, Washington University School of Medicine

Shannon J. Turley, Genentech

Speakers:

Gwendalyn J. Randolph, Washington University School of Medicine
Lymphatics in inflammatory disease

Laura Santambrogio, Albert Einstein College of Medicine
Lymph formation, circulation, and immunological role

Reinhold Förster, Hannover Medical School
Lymph node homing of immune cells via afferent lymphatics

Troy D. Randall, University of Alabama at Birmingham
Paradoxical role of the omentum in immunity to peritoneal tumors

Shannon J. Turley, Genentech
Regulation of leukocyte function and territoriality by fibroblastic reticular cells

Biju Parekkadan, Harvard Medical School
Lymph node cell therapy

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MONDAY, MAY 11, 8:00 AM – 11:30 AM

Major Symposium E: Roots and Mechanisms of Human Autoimmunity

Chairs:

Eric Meffre, Yale University

Jane Hoyt Buckner, Benaroya Research Institute at Virginia Mason

Speakers:

Eric Meffre, Yale University
Defects in early B cell tolerance checkpoints are common to autoimmune diseases

Jane Hoyt Buckner, Benaroya Research Institute at Virginia Mason
Mapping the immune pathways that drive T1D development

Megan Sykes, Columbia University
New approaches to understanding human allo- and autoimmune responses

Erik J. Peterson, University of Minnesota
PTPN22 promotes interferogenic signaling in myeloid cells

Edward K. Wakeland, University of Texas Southwestern Medical Center
A genomic analysis of systemic autoimmunity

Judith A. James, Oklahoma Medical Research Foundation, University of Oklahoma Health Sciences Center
Roles for impaired immune regulation in transition from preclinical autoimmunity to clinical lupus

Major Symposium F: Networking through Mobile Cells and Synaptic Interfaces

Chairs:

Michael L. Dustin, University of Oxford

Janis K. Burkhardt, Children's Hospital of Philadelphia and University of Pennsylvania

Speakers:

Michael L. Dustin, University of Oxford
Novel signals in the immunological synapse

Janis K. Burkhardt, Children's Hospital of Philadelphia and University of Pennsylvania
Cytoskeletal control of integrin activation at the immunological synapse

Morgan Huse, Memorial Sloan Kettering Cancer Center
Lipid-based patterning of the immunological synapse

Clotilde Théry, INSERM U932/Institut Curie
Exosomes and other extracellular vesicles in communication between tumors and the immune system

Anna Huttenlocher, University of Wisconsin
Imaging inflammation: implications to human disease

Thorsten R. Mempel, Massachusetts General Hospital/ Harvard Medical School
Immune cell communication in the tumor environment

TUESDAY, MAY 12, 8:00 AM – 11:30 AM

Major Symposium G: Regulating Immunity: Tregs and Beyond

Chairs:

Steven F. Ziegler, Benaroya Research Institute at Virginia Mason

Claudia Mauri, University College London

Speakers:

Andrea Cerutti, Mount Sinai School of Medicine
IgD: an ancestral regulator of Th2 immune responses

Claudia Mauri, University College London
Microbiota, regulatory B cells, and arthritis: insight into a new mechanism of regulation

Jennifer L. Gommerman, University of Toronto
Befuddled B cells and EAE pathogenesis

Mitchell Kronenberg, La Jolla Institute for Allergy & Immunology
Natural killer T cells: one specificity, but different functions

Liang Zhou, Northwestern University
Regulation of Tregs in the mucosal tissues

Steven F. Ziegler, Benaroya Research Institute at Virginia Mason
Development and function of regulatory T cells

Major Symposium H: Mechanisms of Host Immunity: Insights from Eukaryotic Pathogens

Chairs:

William C. Gause, New Jersey Medical School, Rutgers, The State University of New Jersey

De'Broski R. Herbert, University of California, San Francisco

Speakers:

De'Broski R. Herbert, University of California, San Francisco
The helminthic harangue on immunity and repair

Amariliz Rivera, New Jersey Medical School, Rutgers, The State University of New Jersey
Inflammatory monocytes orchestrate innate antifungal immunity in the lung

William C. Gause, New Jersey Medical School, Rutgers, The State University of New Jersey
Helminths, wound healing, and worm expulsion

Padraic Fallon, Trinity College Dublin
Helminth activation of innate and adaptive immunity to achieve chronic infections

P'ng Loke, New York University School of Medicine
Alternatively activated macrophages derived from monocytes and tissue-resident macrophages during helminth infections

Edward J. Pearce, Washington University School of Medicine
The metabolic regulation of alternative macrophage activation

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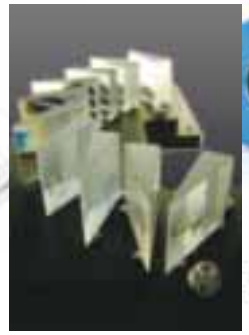

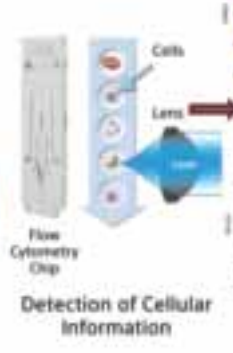

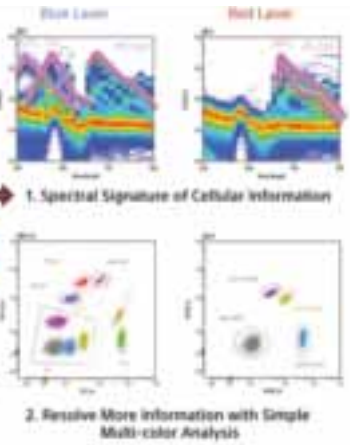

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AAI CLINICAL IMMUNOLOGY COMMITTEE

Translational Research Towards Awakening the Immune System in Human Disease

MONDAY, MAY 11, 3:45 PM – 5:45 PM

Chairs:

Robert L. Modlin, University of California, Los Angeles
AAI Clinical Immunology Committee Chair

Angela Colmone, *Science Translational Medicine*, AAAS

Speakers:

Alan Sher, NIAID, NIH
A host-directed therapy for TB infection that targets innate cytokines

Hana Golding, CBER, FDA
Novel methods for measuring antibody affinity, epitope diversity, and cross-reactivity in human vaccine trials

Drew M. Pardoll, Johns Hopkins School of Medicine
Therapeutic manipulation of the microenvironment of cancer

Jeffrey A. Bluestone, University of California, San Francisco
Rebalancing the immune system through Treg biology

Angela Colmone, *Science Translational Medicine*, AAAS
Translational immunology research: into the future

Advances in translational immunology research have led to new approaches to awaken the immune system in the battle against infection, cancer, and autoimmune disease. This session will include discussion of present approaches and future directions that will be valuable to immunologists interested in translational research.

AAI COMMITTEE ON PUBLIC AFFAIRS

Funding for Immunology Research: Non-Federal Opportunities and NIAID Program Update

SUNDAY, MAY 10, 10:15 AM – 12:15 PM

Chair:

Clifford V. Harding, Case Western Reserve University
AAI Committee on Public Affairs Chair

Speakers:

William Chambers, National Vice President, Extramural Research, American Cancer Society
The role of charitable and patient advocacy organizations in funding biomedical research

Gwen Nguyen, Cause Director, Indiegogo
How crowdfunding can support biomedical research

Session description continues in column 2

Daniel Rotrosen, Director, Division of Allergy, Immunology and Transplantation, NIAID
Recent trends in NIAID-funded, investigator-initiated immunology research

Bruce Walker, Director, Ragon Institute of MGH, MIT and Harvard; Professor, Harvard University; and Investigator, Howard Hughes Medical Institute
The role of philanthropy in supporting biomedical research

NIH has long been one of the major sources of funding for immunologists and other biomedical researchers. In recent years, funding constraints have lowered NIH paylines and reduced success rates, jeopardizing the research and careers of many productive and successful scientists. This session will explore some of the alternatives to NIH funding, including patient advocacy organizations, philanthropists, and crowdfunding. In addition, the session will include an update on immunology research supported by the National Institute of Allergy and Infectious Diseases. Attendees will have ample opportunity to ask questions.

AAI EDUCATION COMMITTEE

Careers in Biotech: Panel Discussion and Networking

SATURDAY, MAY 9, 7:00 PM – 9:00 PM

Chair:

Nandita Bose, Biothera

Panelists:

Jason Fontenot, Principal Scientist, Immunology, Biogen Idec

Brian Johnson, Director, Market Development & Product Management, Thermo Fisher Scientific

Andy I. Kokaji, Senior Scientist, STEMCELL Technologies, Inc.

Isharat Yusuf, Research Investigator II, Genomics Institute of the Novartis Research Foundation

Many opportunities exist in industry for scientists with advanced degrees. There are positions in laboratory research, program management, business development, regulatory affairs, clinical trials oversight, medical liaison, and more. This panel features scientists employed in a variety of positions in industry discussing their career paths and the skills required for success in each. Following the panel discussion, enjoy casual conversation with the speakers and other scientists from industry at a networking reception.

AAI EDUCATION COMMITTEE & AAI COMMITTEE ON THE STATUS OF WOMEN

Careers in Science Roundtable

SATURDAY, MAY 9, 11:30 AM – 1:00 PM

Chair:

Virginia Shapiro, Mayo Clinic; AAI Committee on the Status of Women Chair

At this always popular session, you'll have the opportunity to meet with scientists at your own career stage and with more experienced scientists to explore specific career issues important to men and women in science today. Learn what others are thinking and gain insights into issues you are confronting in your own situation. Recently added topics offer insights into NIH study sections and considerations for scientists in M.D.-Ph.D. careers. Choose from these and the other vital topics related to the environment you work in (academic research, biotech industry, governmental agencies, non-profits), the transitions between specific career stages, or issues in balancing career and family in any career path. Don't miss this great networking opportunity! *Registration Fee: $20 (Lunch included)*

Discussion topics and table leaders:

Research Careers in Academia

- Graduate Student to Postdoc: finding a postdoc, interviewing
  Table Leaders: **Louise M. D'Cruz**, University of Pittsburgh
  Michelle A. Parent, University of Delaware
  Gwendalyn J. Randolph, Washington University School of Medicine
- Postdoc to PI: finding a position, interviewing, negotiating, lab start-up
  Table Leaders: **Deborah M. Brown,** University of Nebraska, Lincoln; **Lisa H. Butterfield**, University of Pittsburgh
  Lauren A. Zenewicz, University of Oklahoma Health Sciences Center
- New PI: attracting students and postdocs, preparing for tenure
  Table Leaders: **Robin Stephens**, University of Texas Medical Branch; **Emma H. Wilson**, University of California, Riverside
- Undergraduate Institutions: finding the balance in teaching, doing research
  Table Leaders: **Laurie P. Shornick**, St. Louis University
- Mentoring Effectively
  Table Leaders: **Elizabeth E. Brown**, University of Alabama, Birmingham; **Federica Sallusto**, Institute for Research in Biomedicine, Bellinzona, Switzerland

How to Build a Network
Table Leaders: **Gail A. Bishop**, University of Iowa
Dawn Jelley-Gibbs, Taconic Bioscience
Madeleine W. Cunningham, University of Oklahoma Health Sciences Center

The Two Body Problem: dual career couples
Table Leaders: **Susan Kovats,** Oklahoma Medical Research Foundation; **Sunny Shin**, University of Pennsylvania School of Medicine

Balancing Parenthood and Career
Table Leaders: **Shabaana Khader**, Washington University School of Medicine; **Carolina Lopez**, University of Pennsylvania School of Veterinary Medicine

Careers in Biotech and Industry: moving from academia to industry and vice versa
Table Leaders: **Renold Capocasale**, Flowmetric, Inc
Pooja Jain, Drexel University College of Medicine

Careers at Governmental Agencies (FDA/NIH/USDA/CDC)
Table Leaders: **Yasmine Belkaid**, NIAID, NIH
Avinash Bhandoola, NCI, NIH

NIH Study Section Insights
Table Leaders: **Scheherazade Sadegh-Nasseri**, Johns Hopkins Medical Institute; **Virginia S. Shapiro**, Mayo Clinic

Negotiating an Academic Position
Table Leaders: **Sarah L. Gaffen**, University of Pittsburgh
Paula M. Lutz, University of Wyoming

The Physician Scientist: balancing clinical and research duties
Table Leaders: **David D. Chaplin**, University of Alabama, Birmingham; **Jonathan Maltzman**, University of Pennsylvania; **Penelope A. Morel**, University of Pittsburgh

Research from the M.D., Ph.D. Perspective
Table Leaders: **Robin G. Lorenz**, University of Alabama, Birmingham; **Wayne M. Yokoyama**, Washington University School of Medicine

Non-Research Careers for Scientists: careers in scientific journals, program administration, non-profits, industry
Table Leaders: **Peggy Just**, eBioscience, an Affymetrix business; **Jennifer H. Meyers**, The American Association of Immunologists and *The Journal of Immunology*
Kristen Porter, NIAID, NIH

AAI MINORITY AFFAIRS COMMITTEE

Careers Roundtable and Speed Networking Session

SATURDAY, MAY 9, 11:45 AM – 2:15 PM

Supported in part by a grant to the Federation of American Societies for Experimental Biology (FASEB) from the National Institute of General Medical Sciences (NIGMS), National Institutes of Health [FASEB MARC Program: T36-GM08059-32]

Chair:

Cherié L. Butts, Biogen Idec; AAI Minority Affairs Committee Chair

Networking skills have never been more crucial to ensure success for early/mid-career scientists, including those traditionally under-represented in biomedical research. At the roundtable, take advantage of the opportunity to meet in small-group format with accomplished, senior immunologists to hear how they have handled the career challenges you now face and learn what they believe will work for you today. Then practice networking in a relaxed environment offering a structured networking exercise and personalized feedback on communicating your scientific interests/objectives most effectively. *Registration Fee: $20 (Includes lunch; coffee/cookies during networking hour)*

Discussion topics and table leaders:

Grad Student: finding a mentor; taking aim at postdoc training
Table Leaders: **Eduardo Davila**, University of Maryland Greenebaum Cancer Center; **Santiago Partida-Sanchez**, Nationwide Children's Hospital; **Tonya Webb**, University of Maryland School of Medicine

Postdoc: finding a mentor; taking aim at a faculty position
Table Leaders: **Robert J. Binder,** University of Pittsburgh
De'Broski R. Herbert, University of California, San Francisco
Joseph Larkin, University of Florida

Junior Faculty: preparing for promotion and tenure
Table Leaders: **Avery August**, Cornell University College of Veterinary Medicine; **Arturo Casadevall**, Albert Einstein College of Medicine; **Prosper Boyaka**, Ohio State University

Academia or Industry: how to decide (or switch sides)
Table Leaders: **Jonathan A. Deane**, GNF/Novartis
Karel Otero Gutierrez, Biogen Idec

Government Agency Careers: CDC, FDA, NIH
Table Leaders: **Marta Catalfamo**, NIAID, NIH; **Charles Egwuagu**, NEI, NIH; **Alison Mawle**, Centers for Disease Control and Prevention

Non-Research Careers (e.g., entrepreneurship, law/policy)
Table Leaders: **James. W. Lillard,** Morehouse School of Medicine and JYANT Technologies, Inc. (President/CEO);
Jaconda Wagner, Wagner Law LLC (intellectual property attorney)

AAI Vanguard Lecture

MONDAY, MAY 11, 11:30 AM – 12:30 PM

Supported in part by a grant to the Federation of American Societies for Experimental Biology (FASEB) from the National Institute of General Medical Sciences (NIGMS), National Institutes of Health [FASEB MARC Program: T36-GM08059-32]

Chair:

Cherié L. Butts, Biogen Idec; AAI Minority Affairs Committee Chair

Speaker:

Gabriel Núñez, University of Michigan
Linking pathogen virulence, immunity, and the microbiota

Since 2003, the AAI meeting has featured a scientific lecture presented by an AAI member who is an underrepresented minority investigator. Selected for their achievements in the field of immunology, presenters are among the most prominent investigators in the field and models of successful career development.

AAI PROGRAM COMMITTEE

AAI Program Committee Workshop: Back to School: A Review of Four Fast-Moving Fields

FRIDAY, MAY 8, 2:30 PM – 4:30 PM

Chairs:

Wendy L. Havran, Scripps Research Institute; AAI Program Committee Chair

Maria-Luisa Alegre, University of Chicago

Speakers:

Jian Han, HudsonAlpha Institute for Biotechnology
NextGen sequencing of immune repertoire: technology, applications, and challenges

Russell G. Jones, McGill University
Metabolomics in immunity

Melody A. Swartz, University of Chicago
Immunoregulatory roles of lymphatic endothelium and their transport functions

Kevin J. Tracey, The Feinstein Institute for Medical Research
Evolutionary integration of neural and immune pathogen sensing and response

This workshop intends to bring a broad audience up-to-date on a few emerging or rapidly changing fields or areas of technological innovation. Expert lecturers will provide an overview of each trending topic with an emphasis on communicating big picture concepts.

AAI PUBLICATIONS COMMITTEE

Publishing Scientific Articles: Advice and Admonition

SUNDAY, MAY 10, 12:30 PM – 2:00 PM

Chairs:

Eugene M. Oltz, Washington University School of Medicine
AAI Publications Committee Chair

Pamela J. Fink, University of Washington School of Medicine
Editor-in-Chief, *The Journal of Immunology*

Speakers:

Eugene M. Oltz, Washington University School of Medicine
Composing a masterpiece: make your data sing

Robert L. Fairchild, Cleveland Clinic
My most excellent paper was returned with serious reviewer issues: what do I do now?

Pamela J. Fink, University of Washington School of Medicine
How to stay on the right side of the ethics divide

In this session, experienced editors will provide valuable insights in understanding the process of preparing a manuscript and responding to reviewers' comments. Panelists will address questions such as: When writing a manuscript, what steps can an author take to enhance its impact on editors, reviewers, and, if accepted for publication, on readers? What are recommended practices for responding to reviewers' comments? How can authors enhance the presentation of data in figures? In addition, the Editor-in-Chief of *The Journal of Immunology* will speak on how to avoid possible ethical missteps in scientific publishing.

AAI VETERINARY IMMUNOLOGY COMMITTEE

AAI Veterinary Immunology Committee & American Association of Veterinary Immunologists (AAVI) Joint Symposium—Vaccines for the Modern Era: Implications for Human and Animal Health II

SATURDAY, MAY 9, 12:30 PM – 2:30 PM

Chairs:

Laurel J. Gershwin, University of California, Davis; AAI Veterinary Immunology Committee Chair

Crystal Loving, National Animal Disease Center, ARS, USDA
American Association of Veterinary Immunologists President

Speakers:

W. Ray Waters, National Animal Disease Center, ARS, USDA
Vaccine approaches for bovine tuberculosis: correlates of protection and relevance to human tuberculosis

Volker Gerdts, Vaccine and Infectious Disease Organization-InterVac, University of Saskatchewan
Large animal models for human vaccine research: pertussis, RSV, and others

Barney S. Graham, Vaccine Research Center, NIAID, NIH
Structure-guided development of an RSV vaccine

Crystal Loving, National Animal Disease Center, ARS, USDA
Provocation versus protection: immune responses and differential outcomes following influenza virus vaccination and challenge in pigs

This symposium will feature topics on both human and veterinary vaccines, with emphasis on new technologies and new information for more appropriate targeting of the immune response to achieve protective immunity. Advances in understanding immune responses to veterinary and human pathogens and applications of that information to vaccine design illustrate a commonality that supports the current "one health" concept in medicine.

NIH INSTITUTE-SPONSORED SYMPOSIA

National Cancer Institute (NCI) and Radiation Research Society (RRS) Symposium: *Symbiosis of Radiation and Immunology: Basic and Translational Impact*

MONDAY, MAY 11, 8:00 AM – 10:00 AM

Chairs:

Mansoor Ahmed, NCI, NIH

Chandan Guha, Albert Einstein College of Medicine

Speakers:

Mansoor Ahmed, NCI, NIH
Opening/meeting interaction

Gayle E. Woloschak, Northwestern University
Introduction: Information on Radiation Research Society (RRS)

Ralph R. Weichselbaum, University of Chicago Medicine
Basic radiation biology: fatal attraction for immunologists

Yang-Xin Fu, University of Chicago
Immunologist's experiences of collaborating with the field of radiation biology

Chandan Guha, Albert Einstein College of Medicine
Opportunities for immunology in clinical radiotherapy

Lisa M. Coussens, Oregon Health & Science University
Tumor immune microenvironment

National Institute of Allergy and Infectious Diseases (NIAID) Symposium: *Hitting the Mother Lode: Mining the Data Fields*

SATURDAY, MAY 9, 12:30 PM – 2:30 PM

Chairs:

Alison Deckhut Augustine, NIAID, NIH

Ashley Xia, NIAID, NIH

Speakers:

Atul J. Butte, Stanford University
Translating a trillion points of data into therapies, diagnostics, and new insights into disease

Steven H. Kleinstein, Yale University
The transcriptional response to influenza infection and vaccination

Anjana Rao, La Jolla Institute for Allergy and Immunology
Genomics approaches to understanding immune function

Martin S. Zand, University of Rochester
Start making sense: visualization and modeling of high-dimensional data

National Institute of Allergy and Infectious Diseases (NIAID) Workshop: *Inflammation as an Immunological Determinant of HIV Transmission*

SUNDAY, MAY 10, 12:30 PM – 2:30 PM

Organizers:

Anjali Singh, NIAID, NIH

Alan Schultz, NIAID, NIH

Chairs:

Jonathan A. Harton, Albany Medical Center

Jim A. Turpin, NIAID, NIH

Panelists:

Michael R. Betts, University of Pennsylvania

Daniel C. Douek, NIAID, NIH

Mimi Ghosh, George Washington University

Ashley T. Haase, University of Minnesota

Eric Hunter, Emory University

David Masopust, University of Minnesota

Christopher J. Miller, University of California, Davis

Kristen A. Porter, NIAID, NIH

Barbara L. Shacklett, University of California, Davis

The objective of this panel discussion is to probe the relationship between inflammation and susceptibility to HIV infection and to identify novel avenues for HIV prevention, targeting mucosal microenvironment inflammation to limit HIV target cell availability. The panel will highlight recent findings and research gaps to address the key questions and challenges.

National Institute on Aging (NIA) Symposium: *Rejuvenating the Aged Immune System: New Directions for Targeting Interventions*

SATURDAY, MAY 9, 3:45 PM – 5:45 PM

Chairs:

Janko Nikolich-Zugich, University of Arizona College of Medicine

Rebecca A. Fuldner, NIA, NIH

Speakers:

Nancy R. Manley, University of Georgia
Too much is not enough: Foxn1 and the maintenance of the postnatal thymus

Jorg J. Goronzy, Stanford University
miRNA regulation of T cell responses in older individuals

Janko Nikolich-Zugich, University of Arizona College of Medicine
Age-related changes in metabolic programming and trafficking of T cells: lessons from parabiosis

Donna M. Murasko, Drexel University
Enhanced IgG response to influenza vaccine in aged mice with a novel adjuvant, rOv-ASP-1

National Institute of Environmental Health Sciences (NIEHS) Symposium: *Developmental Exposures and Their Effects on Immune System Function*

SUNDAY, MAY 10, 12:30 PM – 2:30 PM

Chairs:

Michael C. Humble, NIEHS, NIH

B. Paige Lawrence, University of Rochester

Speakers:

John B. Barnett, West Virginia University
Long-term changes in the immune system due to prenatal cadmium exposure

B. Paige Lawrence, University of Rochester
The environmental legacy of pollutants: linking developmental exposures to perturbations in antiviral immune responses

Kari C. Nadeau, Stanford University
Mechanistic approaches to epigenetics and toxicant exposures

Judith T. Zelikoff, New York University School of Medicine
Maternal inhalation of ambient particulate matter causes alterations in immune profiles and anti-tumor mechanisms in juvenile murine offspring

GUEST SOCIETY SYMPOSIA

American Association of Veterinary Immunologists (AAVI) & AAI Veterinary Immunology Committee Joint Symposium: *Vaccines for the Modern Era: Implications for Human and Animal Health II*

SATURDAY, MAY 9, 12:30 PM – 2:30 PM

Chairs:

Laurel J. Gershwin, University of California, Davis

Crystal Loving, National Animal Disease Center, ARS, USDA

Speakers:

W. Ray Waters, National Animal Disease Center, ARS, USDA
Vaccine approaches for bovine tuberculosis: correlates of protection and relevance to human tuberculosis

Volker Gerdts, Vaccine and Infectious Disease Organization-InterVac, University of Saskatchewan
Large animal models for human vaccine research: pertussis, RSV, and others

Barney S. Graham, Vaccine Research Center, NIAID, NIH
Structure-guided development of an RSV vaccine

Crystal Loving, National Animal Disease Center, ARS, USDA
Provocation versus protection: immune responses and differential outcomes following influenza virus vaccination and challenge in pigs

American Society for Reproductive Immunology (ASRI) Symposium: *Innate Immunity in Pregnancy*

SATURDAY, MAY 9, 10:15 AM – 12:15 PM

Chairs:

Vikki M. Abrahams, Yale School of Medicine

Mukesh K. Jaiswal, Rosalind Franklin University of Medicine and Science

Speakers:

Emmet Hirsch, NorthShore University Health System
Autophagy in preterm labor

Vikki M. Abrahams, Yale School of Medicine
Mechanisms of placental inflammation in obstetric antiphospholipid syndrome

Mukesh K. Jaiswal, Rosalind Franklin University of Medicine and Science
IL-22 prevents lipopolysaccharide-induced preterm labor in mice

Gil Mor, Yale School of Medicine
Role of placenta type I interferon on polymicrobial infection-induced preterm birth

American Society of Transplantation (AST) Symposium: *T Cell Trafficking during Alloimmunity and Tolerance*

SATURDAY, MAY 9, 12:30 PM – 2:30 PM

Chairs:

Mandy L. Ford, Emory University

Maria-Luisa Alegre, University of Chicago

Speakers:

Donna L. Farber, Columbia University Medical Center
Tissue-resident human memory T cells in transplantation and immunity

Kimberly D. Klonowski, University of Georgia
IL-15-mediated control of memory T cell glycosylation and trafficking

Daniel Kreisel, Washington University School of Medicine
Tolerogenic role of central memory T cells in lung transplantation

Bryna Burrell, Immune Tolerance Network
Laminins affect T cell trafficking and allograft fate

Canadian Society for Immunology (CSI) Symposium: *T Lymphocyte Regulation and Differentiation during Infection*

MONDAY, MAY 11, 8:00 AM – 10:00 AM

Chairs:

Irah L. King, McGill University

Jude E. Uzonna, University of Manitoba

Speakers:

Jun Wang, Dalhousie University
*Diverse immune mechanisms for shaping anti-*Chlamydia *CD4 T cell responses*

Simona Stäger, INRS-Institut Armand Frappier
The role of inflammation in regulating the development of T cell responses during leishmaniasis

Irah L. King, McGill University
The role of integrins in T follicular helper cell maintenance following helminth infection

S. M. Mansour Haeryfar, University of Western Ontario
Invariant T cell responses to bacterial superantigens

Jude E. Uzonna, University of Manitoba
*MHC class II-restricted innate-like double negative T cells display memory characteristics and contribute to optimal anti-*Leishmania *immunity*

Chinese Society of Immunology (ChSI) Symposium: *Differentiation and Regulation of Lymphocytes*

SATURDAY, MAY 9, 8:00 AM – 10:00 AM

Chairs:

Zhigang Tian, University of Science and Technology of China

Olivera J. Finn, University of Pittsburgh School of Medicine

Speakers:

Zhigang Tian, University of Science and Technology of China
Development and differentiation of liver-resident NK cells

Bing Sun, Institute Pasteur of Shanghai, Chinese Academy of Sciences
Extracellular Matrix Protein 1 plays a critical role in driving Th2 cell migration and controlling Th17 cell differentiation

Liwei Lu, University of Hong Kong
Regulatory B cells in autoimmunity

Hai Qi, Tsinghua University
Follicular T helper cells and germinal center reaction

Zhongjun Dong, Tsinghua University
Metabolic regulation of NK cell development and activation

German Society for Immunology (DGfI) Symposium: *Control of Treg/Th17 Differentiation*

MONDAY, MAY 11, 3:45 PM – 5:45 PM

Chairs:

Hans-Martin Jäck, University of Erlangen

Dieter Kabelitz, University of Kiel

Carsten Watzl, Leibniz Research Center, Dortmund

Speakers:

Jürgen Wienands, University of Göttingen
Immunology in Germany

Tim Sparwasser, University of Hannover
Metabolic influences that regulate CD4 T cell function

Vigo Heissmeyer, University of Munich
Post-transcriptional control of Th17 differentiation

Petra Hoffmann, University of Regensburg
Impact of Treg cell plasticity on adoptive cell therapies

Jochen Hühn, Helmholtz Society, Braunschweig
Epigenetic control of regulatory T cell development

Michael Lohoff, University of Marburg
The role of interferon regulatory factors for T cell subset differentiation

International Complement Society (ICS) Symposium: *Key Roles of Complement in Adaptive Immunity, Pathogen Responses, and Human Disease*

SUNDAY, MAY 10, 10:15 AM – 12:15 PM

Chairs:

Andrea J. Tenner, University of California, Irvine

Joshua M. Thurman, University of Colorado School of Medicine

Speakers:

Claudia Kemper, King's College London
Regulation of T lymphocyte programming by autocrine complement

Brian Geisbrecht, Kansas State University
Utilization of complement evasion strategies by pathogens

Susan Lea, University of Oxford
Illuminating mechanisms of complement-pathogen interactions from structural biology

V. Michael Holers, University of Colorado School of Medicine
Targeting complement and its activation mechanisms: successful interventions in human disease and new strategies going forward

International Cytokine and Interferon Society (ICIS) Symposium: *Innate and Adaptive Immune Recognition*

SATURDAY, MAY 9, 3:45 PM – 5:45 PM

Chairs:

Richard A. Flavell, HHMI, Yale School of Medicine

Sarah L. Gaffen, University of Pittsburgh

Speakers:

Luke A. J. O'Neill, Trinity College Dublin
Metabolic reprogramming in innate immunity

Federica Sallusto, Institute for Research in Biomedicine
Polarized T cell responses to pathogens and vaccines

Andrew N. McKenzie, Cambridge Immunology Network
Type-2 innate lymphoid cells at the interface with adaptive immunity

Curt M. Horvath, Northwestern University
Regulation of viral RNA recognition, innate immune signaling, and antiviral gene expression

Japanese Society for Immunology (JSI) Symposium: *Development and Function of Immune Cells: Symposium by JSI Awardees*

SATURDAY, MAY 9, 12:30 PM – 2:30 PM

Chairs:

Toshinori Nakayama, Chiba University

Ryoji Yagi, Chiba University

Speakers:

Yosuke Kurashima, University of Tokyo
Analysis of a mast cell-suppressive milieu on the body surface for the prevention and treatment of inflammatory diseases

Satoshi Nishimura, Jichi Medical University
Immune cell activation in obese adipose tissue: visualization by two photon microscopy

Yoshiki Omatsu, Kyoto University
Molecular mechanism of formation of bone marrow niche for hematopoietic stem/progenitor cells and immune cells

Takashi Satoh, Osaka University
The physiological role and differentiation mechanism of disorder-specific M2 macrophages

Ryoji Yagi, Chiba University
Role of the transcription factor GATA3 in helper T cell and innate lymphoid cell development

Toshinori Nakayama, Chiba University
Pathogenic memory Th2 cells in airway inflammation

Korean Association of Immunologists (KAI) and Association of Korean Immunologists in America (AKIA) Symposium: *Cellular and Molecular Factors that Control Immunity*

MONDAY, MAY 11, 10:15 AM – 12:15 PM

Chairs:

Booki Min, Cleveland Clinic Foundation

Chong-Kil Lee, Chungbuk National University

Speakers:

Woong-Kyung Suh, Clinical Research Institute of Montreal
Dissection of inducible costimulator (ICOS) signaling components in follicular helper T cell and Th17 responses

Eun Young Choi, Seoul National University
CD8 T cells can generate memory cells without CD4 help when antigen is cleared early enough

Sang-Moo Kang, Georgia State University
Roles of innate and adaptive immune components in inducing protective immune responses to influenza vaccination

Myoung Ho Jang, Institute for Basic Science, Pohang
Eosinophils regulate inflammation in the gut

Radiation Research Society (RRS) and National Cancer Institute (NCI) Symposium: *Symbiosis of Radiation and Immunology: Basic and Translational Impact*

MONDAY, MAY 11, 8:00 AM – 10:00 AM

Chairs:

Mansoor Ahmed, NCI, NIH

Chandan Guha, Albert Einstein College of Medicine

Speakers:

Mansoor Ahmed, NCI, NIH
Opening/meeting interaction

Gayle E. Woloschak, Northwestern University
Introduction: Information on Radiation Research Society (RRS)

Ralph R. Weichselbaum, University of Chicago Medicine
Basic radiation biology: fatal attraction for immunologists

Yang-Xin Fu, University of Chicago
Immunologist's experiences of collaborating with the field of radiation biology

Chandan Guha, Albert Einstein College of Medicine
Opportunities for immunology in clinical radiotherapy

Lisa M. Coussens, Oregon Health & Science University
Tumor immune microenvironment

Society for Glycobiology (SfG) Symposium: *Glycans and Immunity*

SUNDAY, MAY 10, 12:30 PM – 2:30 PM

Chairs:

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

James P. Paulson, Scripps Research Institute

Speakers:

Robert M. Anthony, Massachusetts General Hospital
Glycoregulation of immunoglobulins

Charles J. Dimitroff, Brigham and Women's Hospital
Galectin-1 binding glycans play a pleiotropic role in melanoma development

Eugene C. Butcher, Stanford School of Medicine
Carbohydrate addressins for lymphocyte homing

Paula A. Videira, NOVA Medical School
Immunomodulation of dendritic cells: cracking the role of sialic acid-containing sugars

Vijay K. Kuchroo, Brigham and Women's Hospital
Tim-3 and Galectin-9: regulators of effector and Treg cells

Society for Immunotherapy of Cancer (SITC) Symposium: *Immune Biomarkers in Cancer*

SUNDAY, MAY 10, 8:00 AM – 10:00 AM

Chairs:

Lisa H. Butterfield, University of Pittsburgh

Augusto C. Ochoa, Louisiana State University Health Sciences Center

Speakers:

Augusto C. Ochoa, Louisiana State University Health Sciences Center
Metabolism in the immune response to cancer

Giorgio Trinchieri, NCI, NIH
Omics platforms and systems biology in biomarker identification

Holden T. Maecker, Stanford University Medical Center
High dimensional cellular and proteomic profiling approaches

Lisa H. Butterfield, University of Pittsburgh
Immune biomarkers in clinical trials

Society for Leukocyte Biology (SLB) Symposium: *Society for Leukocyte Biology: The Next Generation*

MONDAY, MAY 11, 10:15 AM – 12:15 PM

Chairs:

Louis B. Justement, University of Alabama at Birmingham

Silvia M. Uriarte, University of Louisville

Speakers:

Joshua J. Obar, Montana State University
Leukotriene and IL-1alpha-mediated orchestration of the antifungal leukocyte response to Aspergillus fumigatus

I. Coy Allen, Virginia Polytechnic Institute and State University
Evaluating NLR modulation of canonical and non-canonical NF-κB signaling in IBD

Laura M. Sly, University of British Columbia
Harnessing macrophage phenotype for anti-inflammatory therapy

Madhavi J. Rane, University of Louisville
Baclofen, a $GABA_BR$ agonist, ameliorates immune-complex-mediated acute lung injury by modulating pro-inflammatory mediators

Ilhem Messaoudi Powers, University of California, Riverside
Dose-dependent modulation of immune response to vaccination by alcohol

Silvia M. Uriarte, University of Louisville
Neutrophils and oral pathogens: opposing forces in the dysbiosis battle

Society of Mucosal Immunology (SMI) Symposium: *Unique Lymphocyte Populations at Mucosal Surfaces*

SUNDAY, MAY 10, 10:15 AM – 12:15 PM

Chairs:

Timothy L. Denning, Georgia State University

Marielle C. Gold, Oregon Health & Science University

Speakers:

Ivaylo I. Ivanov, Columbia University
Control of mucosal Th17 cell homeostasiss

Florence Lambolez, La Jolla Institute for Allergy and Immunology
DN TCRαβ⁺ IEL: mix and match MHC reactivities

Richard S. Blumberg, Harvard Medical School
NKT cells orchestrate critical barrier protective functions in mucosal tissues

Marielle C. Gold, Oregon Health & Science University
Human pathogen-reactive MAIT cells

Society for Natural Immunity (SNI) Symposium: *Advances in NK Cell Research*

SATURDAY, MAY 9, 10:15 AM – 12:15 PM

Chairs:

Christine A. Biron, Brown University

Eric O. Long, NIAID, NIH

Speakers:

Eric O. Long, NIAID, NIH
Negative signaling by NK cell inhibitory receptors

Sungjin Kim, Michigan State University
Antibody-dependent memory-like NK cells

Joseph C. Sun, Memorial Sloan Kettering Cancer Center
Novel role for RAG in NK cells

David K. Finlay, Trinity College Dublin
Metabolic regulation of NK cell responses

Emily M. Mace, Baylor College of Medicine
The structure and function of the NK cell developmental synapse

The Obesity Society (TOS) Symposium: *Immunometabolism of Aging*

SUNDAY, MAY 10, 10:15 AM – 12:15 PM

Chairs:

Barbara S. Nikolajczyk, Boston University School of Medicine

Gerald V. Denis, Boston University School of Medicine

Speakers:

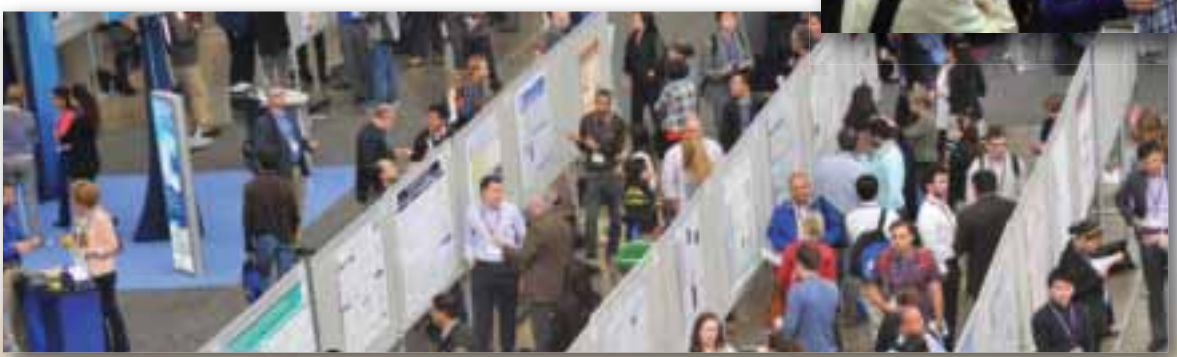
Derek M. Huffman, Albert Einstein College of Medicine
Obesity, aging, and the intestinal stem cell niche

Daniela Frasca, University of Miami
Obesity, aging, and antibody responses

Nathan K. LeBrasseur, Mayo Clinic
Cellular senescence: at the crossroads of aging, obesity, and exercise

Shai Shen-Orr, Technion-Israeli Institute of Technology
Cellular immune response to chronic inflammation

Simin N. Meydani, Tufts University
Caloric restriction and immune function in aging humans



CAREER DEVELOPMENT SESSIONS

Through workshops, roundtables, and one-on-one counseling, IMMUNOLOGY 2015™ provides critical career development programs.

Career sessions and services this year include:

- NIH Grants Workshop
- Careers in Biotech: Panel Discussion and Networking
- Careers and Networking Roundtables (2)
- How to Convert Your CV into a Resumé (followed by one-on-one consulting)
- Interviewing for a Job
- Secrets for a Successful Postdoctoral Fellowship

AAI is also offering an online and onsite Jobs Board free to meeting registrants and exhibitors.

NIH Grant Seminar Workshop: Demystifying the Application and Review Process

SATURDAY, MAY 9, 8:00 AM – 10:00 AM

Chairs:

Tina McIntyre, Scientific Review Officer, Innate Immunity and Inflammation Study Section, Immunology Integrated Review Group, Center for Scientific Review, NIH

Alison Deckhut-Augustine, Chief, Basic Immunology Branch, Division of Allergy, Immunology, and Transplantation, NIAID, NIH

Additional Speakers:

Nancy Vazquez-Maldonado, Scientific Review Officer, Immunology Review Branch, NIAID, NIH

Lakshmi Ramachandra, Scientific Review Officer, Immunology Review Branch, NIAID, NIH

This workshop will provide participants with an overview of NIH grant application, review, and management. Emphasis will be given to identification of the most appropriate funding agency, how to make an application "reviewer friendly," and other strategies that contribute to applications that succeed in obtaining research funding. The workshop will also provide information on how to understand the peer review system, which is essential to competing successfully for funding, with a focus on recent changes to the review process. NIH review, grants management, and program staff will provide a broad array of expertise and encourage questions from seminar participants. This workshop is open to anyone but is especially intended for new faculty members, young investigators, and advanced postdoctoral fellows.

Careers in Science Roundtable

Sponsored by the AAI Education Committee & AAI Committee on the Status of Women

SATURDAY, MAY 9, 11:30 AM – 1:00 PM

Chair:

Virginia Shapiro, Mayo Clinic; AAI Committee on the Status of Women Chair

At this always popular session, you'll have the opportunity to meet with scientists at your own career stage and with more experienced scientists to explore specific career issues important to men and women in science today. Learn what others are thinking and gain insights into issues you are confronting in your own situation. Recently added topics offer insights into NIH study sections and considerations for scientists in M.D.-Ph.D. careers. Choose from these and the other vital topics related to the environment you work in (academic research, biotech industry, governmental agencies, non-profits), the transitions between specific career stages, or issues in balancing career and family in any career path. Don't miss this great networking opportunity! *Registration Fee: $20 (Lunch included.)*

Discussion topics:

- **Research Careers in Academia**
  - Graduate Student to Postdoc: finding a postdoc, interviewing
  - Postdoc to PI: finding a position, interviewing, negotiating, lab start-up
  - New PI: attracting students and postdocs, preparing for tenure
  - Undergraduate Institutions: finding the balance in teaching, doing research
  - Mentoring Effectively
- **How to Build a Network**
- **The Two Body Problem: dual career couples**
- **Balancing Parenthood and Career**
- **Careers in Biotech and Industry: moving from academia to industry and vice versa**
- **Careers at Governmental Agencies (FDA/NIH/USDA/CDC)**
- **NIH Study Section Insights**
- **Negotiating an Academic Position**
- **The Physician Scientist: balancing clinical and research duties**
- **Research from the M.D., Ph.D. Perspective**
- **Non-research Careers for Scientists: careers in scientific journals, program administration, non-profits, industry**

Table Leaders: See AAI Committee-sponsored Sessions

Careers Roundtable and Speed Networking Session

Sponsored by the AAI Minority Affairs Committee

Supported in part by a grant to the Federation of American Societies for Experimental Biology (FASEB) from the National Institute of General Medical Sciences (NIGMS), National Institutes of Health [FASEB MARC Program: T36-GM08059-32]

SATURDAY, MAY 9, 11:45 AM – 2:15 PM

Chair:

Cherié L. Butts, Biogen Idec; AAI Minority Affairs Committee Chair

Networking skills have never been more crucial to ensure success for early/mid-career scientists, including those traditionally under-represented in biomedical research. At the roundtable, take advantage of the opportunity to meet in small-group format with accomplished, senior immunologists to hear how they have handled the career challenges you now face and learn what they believe will work for you today. Then practice networking in a relaxed environment offering a structured networking exercise and personalized feedback on communicating your scientific interests/objectives most effectively. *Registration Fee: $20 (Includes lunch; coffee/cookies during networking hour)*

Discussion topics:

- **Grad Student: finding a mentor; taking aim at postdoc training**
- **Postdoc: finding a mentor; taking aim at a faculty position**
- **Junior Faculty: preparing for promotion and tenure**
- **Academia or Industry: how to decide (or switch sides)**
- **Government Agency Careers: CDC, FDA, NIH**
- **Non-research Careers (e.g., entrepreneurship, law/policy)**

Table Leaders: See AAI Committee-sponsored Sessions

Careers in Biotech: Panel Discussion and Networking

Sponsored by the AAI Education Committee

SATURDAY, MAY 9, 7:00 PM – 9:00 PM

Chair:

Nandita Bose, Biothera

Panelists:

Jason Fontenot, Principal Scientist, Immunology, Biogen Idec

Brian Johnson, Director, Market Development & Product Management, Thermo Fisher Scientific

Andy I. Kokaji, Senior Scientist, STEMCELL Technologies, Inc.

Isharat Yusuf, Research Investigator II, Genomics Institute of the Novartis Research Foundation

Many opportunities exist in industry for scientists with advanced degrees. There are positions in laboratory research, program management, business development, regulatory affairs, clinical trials oversight, medical liaison, and more. This panel features scientists employed in a variety of positions in industry discussing their career paths and the skills required for success in each. Following the panel discussion, enjoy casual conversation with the speakers and other scientists from industry at a networking reception.

How to Convert Your CV into a Resumé

SUNDAY, MAY 10, 9:00 AM – 10:00 AM

Speaker:

Derek Haseltine, Director, Career Services, College of Professional Studies, George Washington University

For anyone seeking a job outside of academe, how you present yourself on paper is critical. A well prepared resumé can make all the difference in securing that interview. The focus of this session will be on the important elements of a resumé, the differences between a resumé and the standard academic curriculum vitae, and the information needed to make a good impression. In this special career development session, attendees will be instructed in how to transform their CVs into professional resumés. Small breakout sessions for individual consulting will follow from 10:30 AM to 12:30 PM. Bring your CV!

Secrets for a Successful Postdoctoral Fellowship

MONDAY, MAY 11, 11:00 AM – 12:00 PM

Speaker:

James Gould, Director, Office for Postdoctoral Fellows, Harvard Medical School

A postdoctoral fellowship is the time to develop research skills you will need to succeed as an independent scientist. It is, however, just as important to realize that you need to prepare for a career path at the same time. This session will highlight ways of getting the most out of your postdoctoral fellowship, relating successfully with your mentor, and understanding how to use the resources available to you to ensure that your training prepares you adequately for a seamless transition into the next phase of your career.

Interviewing for a Job

MONDAY, MAY 11, 1:30 PM – 2:30 PM

Speaker:

Derek Haseltine, Director, Career Services, College of Professional Studies, George Washington University

This session will be focused on tips and techniques to help you successfully navigate the interview process. Emphasis will be on how you can present yourself in the best possible light. You will also learn how to respond to unexpected questions. This session is open to anyone but is especially intended for students and postdoctoral attendees.

VISIT THE AAI BOOTH (901) TO LEARN ABOUT AN EXCITING NEW AAI CAREER DEVELOPMENT RESOURCE

THE CAREER ADVISORY BOARD (CAB)

A Referral Service for connecting Young PIs with More Senior PIs for Advice on How to Manage Your First Lab!

The CAB is Sponsored by the Committee on the Status of Women but Is Open to All Junior Faculty in AAI.

IMMUNOLOGY 2015™

Annual Meeting of The American Association of Immunologists

May 8–12, 2015 | Ernest N. Morial Convention Center | New Orleans, Louisiana

Jobs Board

A Free Recruiting Service for Registrants and Exhibitors

Post Online and Meet On-site

AAI is offering career services to both job seekers and employers through a Jobs Board free to meeting registrants and exhibitors at **www.immunology2015.org/jobs-board/index.html**.

Job Seekers! Whatever your career stage, use this career service at **IMMUNOLOGY 2015™** to enhance your professional development!

- **Job Postings.** Review the online AAI Jobs Board to identify postings you wish to pursue. (View new Advance Postings through April 29. Watch for On-site Postings, online or on paper in the Exhibit Hall!)
- **Direct Access to Recruiters.** Job postings will include recruiters' e-mail addresses so that you can contact them directly.

Employers! Advertise your position on a virtual Jobs Board located on the **IMMUNOLOGY 2015™** website. By including a contact email, you will receive inquiries directly.

- **Advance Postings.** Postings will be accepted as of February 2, 2015, and will remain online until the end of the meeting. To post job listings in advance of the meeting, contact meetings@aai.org. Advance Postings must be submitted to AAI by April 29, 2015.
- **On-site Postings.** After April 29, 2015, employers wishing to advertise a job on the **IMMUNOLOGY 2015™** website may still do so by visiting the AAI Office in the Ernest N. Morial Convention Center between 9:00 AM and 5:00 PM. You may also post a paper announcement on the bulletin board in the Exhibit Hall.

Save Thousands of Dollars in Recruiting Expenses.
Take advantage of this complimentary hiring opportunity at **IMMUNOLOGY 2015™**. To register for the meeting, visit **www.immunology2015.org/registration**.

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Phone: (301) 634-7178 | Fax: (301) 634-7887
Email: infoaai@aai.org | Web: www.aai.org

POSTER SESSIONS & BLOCK SYMPOSIA

Abstracts of unpublished, original research are presented during Poster Sessions and Block Symposia (oral presentations of poster data). This is perhaps the most dynamic aspect of the AAI annual meeting. Take part in face-to-face discussions with abstract authors and learn about their most recent, unpublished research. Poster Sessions will be held daily (unopposed by any other sessions) in the Exhibit Hall from 2:30 PM – 3:45 PM.

EXHIBITOR HALL PASSPORT PROGRAM

FILL OUT YOUR EXHIBIT HALL PASSPORT FOR A CHANCE TO WIN ONE OF THREE $250 AMERICAN EXPRESS GIFT CARDS!

Entries must be received by Monday, May 11, at 2:00 PM. The drawing will be held during the Poster Presentations on Monday, May 11 from 2:30 PM – 3:45 PM. You'll find your Passport in your meeting bag or you may pick one up at the AAI Booth.

EXHIBITOR WORKSHOPS

Be sure to take advantage of the knowledge-building opportunities presented in Exhibitor Workshops. Located on the Exhibit Floor, these workshops explore companies' latest technologies, products, and services through demonstrations and discussions.

Workshops are planned and conducted by exhibitors; the listing of those workshops does not constitute endorsement of any products or services by AAI.

Visit the AAI History Exhibit

(FLOOR 1)

A display featuring the diseases, institutions, and AAI members shaping immunology research in the greater New Orleans area.

The American Association of Immunologists

Gratefully Acknowledges the Generous Sponsorship of

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IMMUNOLOGY 2015™

Opening Night Welcome Reception

FRIDAY, MAY 8 • 6:00 PM – 8:00 PM

Chambers-eBioscience Memorial Award

Lustgarten-eBioscience Memorial Award

Meeting Bags

Program Support

2014–2015 AAI PROGRAM COMMITTEE

AAI gratefully acknowledges the efforts of the Program Committee for IMMUNOLOGY 2015™.

Wendy L. Havran, Chair
The Scripps Research Institute

Maria-Luisa Alegre
University of Chicago

Marlene Bouvier
University of Illinois at Chicago

Daniel J. Campbell
Benaroya Research Institute

Shane Crotty
La Jolla Institute for Allergy and Immunology

James E. Crowe, Jr.
Vanderbilt University Medical Center

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Daniel H. Kaplan
University of Minnesota

Paul Kubes
University of Calgary

Frances E. Lund
University of Alabama at Birmingham

David W. Pascual
University of Florida

Erika L. Pearce
Washington University School of Medicine

AAI ABSTRACT PROGRAMMING CHAIRS

AAI gratefully acknowledges the efforts of the Abstract Programming Chairs for IMMUNOLOGY 2015™.

Antigen Processing and Presentation

Malini Raghavan
University of Michigan Medical School

Scheherazade Sadegh-Nasseri
Johns Hopkins School of Medicine

Basic Autoimmunity

Laura Mandik-Nayak
Lankenau Institute for Medical Research

Chandra Mohan
University of Houston

Cellular Adhesion, Migration, and Inflammation

Margaret S. Bynoe
Cornell University College of Veterinary Medicine

Yoji Shimizu
University of Minnesota Medical School

Cytokines and Chemokines and Their Receptors

Ninan Abraham
University of British Columbia

Mandy J. McGeachy
University of Pittsburgh

Hematopoiesis and Immune System Development

Michael A. Farrar
University of Minnesota

Virginia M. Shapiro
Mayo Clinic

Immediate Hypersensitivity, Asthma, and Allergic Responses

Paul J. Bryce
Northwestern University Feinberg School of Medicine

Toshiaki Kawakami
La Jolla Institute for Allergy and Immunology

Immune Mechanisms of Human Disease

Clara Abraham
Yale University

Marcus R. Clark
University of Chicago

Immune Response Regulation: Cellular Mechanisms

Andrew L. Mellor
Georgia Regents University

Thomas C. Mitchell
University of Louisville School of Medicine

Immune Response Regulation: Molecular Mechanisms

Rachel M. Gerstein
University of Massachusetts Medical School

Mark H. Kaplan
Indiana University School of Medicine

Innate Immune Responses and Host Defense: Cellular Mechanisms

Judith Hellman
University of California, San Francisco

Paige Lacy
University of Alberta

Innate Immune Responses and Host Defense: Molecular Mechanisms

Gregory M. Barton
University of California, Berkeley

Denise M. Monack
Stanford University

Lymphocyte Differentiation and Peripheral Maintenance

Nicole Baumgarth
University of California, Davis

Ross M. Kedl
University of Colorado, Denver

Microbial, Parasitic, and Fungal Immunology

George S. Deepe
University of Cincinnati College of Medicine

Joanne Turner
Ohio State University

Mucosal and Regional Immunology

Peter B. Ernst
University of California, San Diego

Dana J. Philpott
University of Toronto

Therapeutic Approaches to Autoimmunity

Jennifer H. Anolik
University of Rochester Medical Center

Olaf Stüve
University of Texas Southwestern Medical Center

Transplantation Immunology

Donna L. Farber
Columbia University Medical Center

Pavan Reddy
University of Michigan Medical Center

Tumor Immunology

Chrystal M. Paulos
Hollings Cancer Center MUSC

Weiping Zou
University of Michigan

Vaccines and Immunotherapy

Lisa H. Butterfield
University of Pittsburgh

Kohtaro Fujihashi
University of Alabama at Birmingham

Veterinary and Comparative Immunology

Cynthia L. Baldwin
University of Massachusetts

Jeffrey A. Yoder
College of Veterinary Medicine North Carolina State University

Viral Immunology

Julia L. Hurwitz
St. Jude Children's Research Hospital

Steven M. Varga
University of Iowa

FRIDAY, MAY 8

2:30 PM – 4:30 PM
B Cells and Autoantibodies
Cancer Immunotherapy and Mechanisms
Cytotoxic Cells in Pathogen Immunity
Mast Cells and IgE
Microbial, Parasitic, and Fungal Immunology I
Molecular Regulation of Cytokine/Chemokine and Receptor Function

SATURDAY, MAY 9

8:00 AM – 10:00 AM
Activation Mechanisms in Adaptive and Innate Immunity
Antigen Processing and Presentation: Cellular Aspects
B Cell and Antibody Responses Induced by Vaccines
Turning on the T Cell

10:15 AM – 12:15 PM
Conceptual Therapeutics in Autoimmunity
Cytokine- and Chemokine-mediated Immunopathology
Effector T Cell Regulation
Molecular Decisions Controlling B Cell Activation and Outcomes
Novel Vaccines and Delivery Systems
Peripheral Lymphocyte Development, Homeostasis, and Aging

12:30 PM – 2:30 PM
Innate Immune Regulation
Signaling Pathways in Autoimmune Responses
T Cell Regulation

3:45 PM – 5:45 PM
Lymphocyte Response Regulation and Memory Formation
Novel Therapeutic Approaches in Systemic and Organ Specific Autoimmunity
T Cell Development
T Cell Tumor Trafficking and Effector Function
Technological Innovations in Immunology

SUNDAY, MAY 10

8:00 AM – 10:00 AM
Allergic Mechanisms I
Autoimmunity: Triggers and Regulation I
Mechanisms in T Helper Subset Fate Determination
Regulation at Mucosal Surfaces
Respiratory Viruses and the Immune Response I

10:15 AM – 12:15 PM
Lymphocyte Activation and Differentiation
Microbial, Parasitic, and Fungal Immunology II
Tumorigenesis, Therapy, and Metastasis
Virus Infection and $CD8^+$ T Cells

12:30 PM – 2:30 PM
Autoimmune and Inflammatory Diseases
Cellular Innate Immune Responses to Pathogens
Checkpoints and Combinations in Cancer Therapy
Immune Regulation at the Intestinal Mucosa
Thymic Microenvironment

3:45 PM – 5:45 PM
Antigen Processing and Presentation: Molecular Aspects
Innate Cells in Autoimmunity
Leukocyte Migration: To Paths Less Traveled
Regulatory Lymphocytes
Signaling by Innate Receptors
The Microbiota and Mucosal Immunity
Therapeutics in CNS Autoimmunity

MONDAY, MAY 11

8:00 AM – 10:00 AM
Allergic Mechanisms II
Novel Innate Immune Mechanisms
Respiratory Viruses and the Immune Response II
Veterinary and Comparative Immunology

10:15 AM – 12:15 PM
B Cell Development
Epigenetics, Transcription, and Systems Biology of Immune Responses
Tregs and Cancer Immune Regulation

12:30 PM – 2:30 PM
Cell Subsets, Cytokines and Inflammation
Innate Sensing and Signaling in the Cytosol
Natural Killers, T Cells, and the Immune Response to Viral Infection
New Cancer Vaccines
Regulation of Immunity at the Lung Mucosa
T Cells and Cytokines in Autoimmunity

3:45 PM – 5:45 PM
Advances in Transplantation Immunology
Inflammation: The Immune System in Action
Skin and Regional Mucosal Immunology
T Cell Activation, Expansion, and Exhaustion During Viral Infection

TUESDAY, MAY 12

8:00 AM – 10:00 AM
Hematopoiesis
Innate Immune Responses to Pathogens
Myeloid Cells and Tumor
Regulation of CD4 T Cell Subset Differentiation
T Cell-Mediated Immune Responses and Protection Following Vaccination

10:15 AM – 12:15 PM
Autoimmunity: Triggers and Regulation II
CARs, TCRs, and Adoptive Transfer for Cancer
Immunoregulatory Functions of Cytokines
Inflammation at the Intestinal Mucosa
Innate Immune Responses in Monocytes/Macrophages, Dendritic Cells, and Myeloid Cells
Interplay of Viruses and the Innate Immune System

SOCIAL EVENTS

New Member Reception (*By invitation only*)

Sponsored by the AAI Membership Committee

FRIDAY, MAY 8, 4:00 PM – 4:45 PM
(BADGE AND INVITATION REQUIRED)

AAI wishes to welcome new regular, associate, and postdoctoral members joining AAI for the first time. AAI President Linda Sherman and other AAI leaders look forward to meeting you personally. Please join us with your invitation in hand for light refreshments and casual conversation.

Opening Night Reception: Carnival Night in NOLA

Generously sponsored by eBioscience, an Affymetrix business

FRIDAY, MAY 8, 6:00 PM – 8:00 PM
GREAT HALL LOBBY –
ERNEST N. MORIAL CONVENTION CENTER
900 CONVENTION CENTER BLVD.

As you exit the President's Address, you'll be greeted by a traditional southern Louisiana band in the Great Hall Lobby for the Opening Night Welcome Reception. There you'll sample the many flavors of New Orleans cuisine, mingle with old friends and revelers "borrowed" from Mardi Gras, and enjoy trying out your Cajun two-step to the celebrated Dwayne Dopsie & Zydeco Hellraisers band.

The Journal of Immunology (*The JI*) Editorial Board Dinner and Meeting (*By invitation only*)

Generously sponsored by Dartmouth Journal Services

SATURDAY, MAY 9, 7:00 PM – 10:00 PM

This working dinner is held each year at the annual meeting to provide Editorial Board members the valuable opportunity to meet in person to discuss items of interest and concern about *The JI*.

Service Appreciation Reception (*By invitation only*)

Generously sponsored by BioLegend

SUNDAY, MAY 10, 7:30 PM – 9:30 PM

At this important event, AAI leadership honors the association's dedicated member volunteers—the committee members, editors, mentors, instructors, and others—who work on the membership's behalf throughout the year by giving generously of their time in support of the AAI mission. Open by invitation to 2014-2015 AAI volunteers.

IMMUNOLOGY 2015™ Gala: Lagniappe* on the Levee—The Tastes & Tunes of New Orleans

Generously sponsored by BioLegend

MONDAY, MAY 11, 7:00 PM – 9:30 PM
THE SUGAR MILL
1021 CONVENTION CENTER BLVD.

Pause during your week of intense science to enjoy an evening with friends and colleagues at the AAI Gala: Lagniappe on the Levee—The Tastes and Tunes of New Orleans. At this festive event to be held at the historic Sugar Mill directly across from the Convention Center, you'll enjoy sampling the ambience and cuisines of three distinctive New Orleans neighborhoods—the Vieux Carré, the Garden District, and Cajun Bayou Country. You'll also be treated to the tunes of the 14-piece Swingaroux Band performing the many different genres of Louisiana music. And when you aren't dancing, you'll find lagniappe in novelty entertainment.

**Lagniappe: a Creole expression pronounced [lay-nee-ap] and meaning "a little something extra"*

The American Association of Immunologists

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IMMUNOLOGY 2015™ GALA

MONDAY, MAY 11 • 7:00 PM – 9:30 PM

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Meeting Lanyards

IMMUNOLOGY 2015™

May 8 – 12 , 2015 • New Orleans, Louisiana • Ernest N. Morial Convention Center

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SATURDAY, MAY 9

Accelerating Immunology Research with Simplified Multi-color Flow Cytometry on the Guava easyCyte™ Systems

10:00 AM - 10:45 AM EXHIBITOR WORKSHOP ROOM 2

EMD Millipore

Presenters: **Katherine Gillis, Applications Scientist**

Complex interactions between host and pathogen targets require modern immunology labs to have easy access to instruments capable of multiplex analysis. Flow cytometers with the capacity for simultaneous measurement of sufficient targets for immunological analysis have traditionally required extensive operator expertise and been housed in select or shared labs. With improvements to the Guava easyCyte™ flow cytometers, multi-color flow cytometry has never been more powerful and accessible. The patented microcapillary fluidics used by all Guava systems uniquely enable absolute cell counts with small sample volumes in single-tube or 96-well plate format, rendering them ideally suited for precious biological samples from patients or transgenic models. The Guava InCyte™ software provides an intuitive user interface that facilitates custom analysis while including templates for analysis of routine applications. Spectral compensation performed pre- or post-acquisition manually or via automated wizard ensures confidence in precise multi-parameter data. The heat-map view of high-throughput plate results makes simultaneous visualization of multiple parameters possible, permitting assessment of multi-sample activation, synapse formation, and other immunomodulation in a single view. Data examples from the Guava easyCyte™ systems will be used to demonstrate how up to 10 fluorophores can be accurately resolved for multiplex and high-throughput experiments to advance immunological investigations.

Semi-automated, Small-scale Protein Purification and Sample Prep Using Rainin PureSpeed™ Tips

11:15 AM - 12:00 PM EXHIBITOR WORKSHOP ROOM 1

Rainin Instrument, LLC

Presenters: **Thien Dinh, Field Application Specialist**

Low concentrations of purified protein present considerable issues within drug development. Among these issues are diminishing yields due to loss of protein from vessel surface adhesion, denaturation, precipitation, and loss of activity. Additionally, tools such as structural analysis and many other assays, require high protein concentrations for accurate quantitation of reliable data. Traditional methods for concentrating protein samples such as centrifugation through a membrane filter can be time consuming and expensive and may likely result in loss of yield and activity. Here, we present an alternative way to generate high concentrations of protein with superior performance while increasing throughput and reducing processing time to decrease costs. Rainin Instrument has introduced the PureSpeed™ system for the purification of proteins and antibodies. In this system, purification resins constrained to the distal end of pipette tips are used in conjunction with the E4 XLS+ electronic pipette to generate protein samples of high purity and concentration. PureSpeed™ offers hands-free, semi-automated processing with pre-programmed and customizable protocols for different protein purification workflows. Multiple resin types are available for a variety of downstream applications—antibody purification, immunoprecipitation, ion exchange, His-tagged affinity chromatography, and even peptide desalting—with capacities ranging from the low hundreds of micrograms to tens of milligrams to accommodate small- and medium-scale purification needs. The PureSpeed™ system provides purified protein samples faster and at higher concentrations than competing technologies while offering the capability for higher throughput and increased productivity for drug discovery applications.

Using New Approaches to Investigate Human and Mouse Group 2 Innate Lymphoid Cell Responses

11:15 AM - 12:00 PM EXHIBITOR WORKSHOP ROOM 2

eBioscience, an Affymetrix business

Presenters: **Elia Tait Wojno, Ph.D., Assistant Professor, Cornell University, Baker Institute for Animal Health**

Group 2 innate lymphoid cells (ILC2s) are recently described innate immune cells that contribute to type 2 inflammation, tissue repair, and metabolic homeostasis in multiple tissues. Although ILC2s play key roles in various biological processes, these cells are rare, making analysis of their phenotype and function a technical challenge. This session will discuss cutting-edge techniques that can be used to examine this dynamic cell population in murine models and in human tissues. A project focused on assessing the role of the prostaglandin D2 receptor, chemoattractant homologous molecule expressed by Th2 cells (CRTH2), in ILC2 responses will be used to highlight selected technical approaches and assays that can be used to analyze ILC2 phenotype and function. Techniques that will be highlighted include multi-color flow cytometry, cell-sorting approaches, single-cell RNA staining, and in vitro assays for ILC2 function. In particular, the PrimeFlow™ RNA assay, which enables simultaneous assessment of protein and RNA transcript expression on a single-cell level, will be discussed. The key concepts described during the session will provide relevant information for those new to the ILC field and for investigators who are already experienced in the analysis of ILC responses.

Quantitate and Visualize Your Immune-cell Functional Assays—a Live-cell Imaging Approach

12:30 PM - 1:15 PM EXHIBITOR WORKSHOP ROOM 1

Essen BioScience

Presenters: **Dan Appledorn, Ph.D., R&D Project Manager**

Live-cell imaging is most commonly associated with adherent cell-based assays, but in this workshop, we will demonstrate how a variety of immune cell functional assays can be performed using the IncuCyte ZOOM™ in vitro imaging system and CellPlayer™ live-cell labeling reagents and the advantages such approaches offer over conventional ones. The assays exemplified include cytotoxic immune cell killing of tumor cells, antibody-dependent cell-mediated cytotoxicity (ADCC), complement-dependent cytotoxicity (CDC), T cell proliferation, and T cell clustering.

Common methods for measuring cell death and proliferation in immune cell assays include flow cytometry, chromium release, and bioluminescent reporters. These methods come with certain limitations (including the need to lift and process cells before measurements are made), may involve the use of radioactivity, provide only indirect readouts, be end-point in nature, and provide no images of the biology under study.

Use of the IncuCyte ZOOM™ system, along with live-cell labeling reagents, allows cytotoxicity and proliferation assay readouts to be made directly from the assay plates within a standard incubator, requiring no handling or processing of cells or supernatants. Measurements are made repeatedly on the same wells, over the entire assay time course, providing greater precision than time-course measurements obtained through a series of end-point assays. In addition, the ability to create time-lapse movies from the collected images allows visualization of cell–cell interactions, which can bring unique insights into the biology at hand.

Higher Throughput Tissue Staining Using a Novel Immunohistochemistry Method

12:30 PM - 1:15 PM EXHIBITOR WORKSHOP ROOM 2

EMD Millipore

Presenters: **Michele Hatler, Product Manager**

If you analyze protein expression in tissue samples using immunohistochemistry (IHC), you know that IHC can be time consuming, laborious, and subject to process variability that affects results. Attend this showcase to discover a unique, vacuum-driven protein-detection system (SNAP i.d.® 2.0) for conducting IHC faster than traditional methods but with reproducible staining. In this interactive session, you'll see how precision vacuum manipulation of IHC reagents minimizes slide handling while maintaining consistency and avoiding tissue damage or signal artifacts. You'll learn how to apply this technology to your archival fixed or fresh-frozen tissues for immunostaining or classical histological protocols, such as hematoxylin and eosin, without needing an expensive autostainer. The SNAP i.d.® 2.0 platform processes up to 24 slides and handles all blocking, washing, and incubation steps.

MojoSort™, a Versatile Nanoparticle for Magnetic Isolation of Cells with High Purity, Yield, and Preserved Functionality

1:45 PM - 2:30 PM EXHIBITOR WORKSHOP ROOM 1

BioLegend

Presenters: **Miguel Tam, Product Manager**

The isolation of a defined population from a complex mixture of cells is a technical challenge that many researchers face on a daily basis. Several strategies have been developed over the last decades, including gradient centrifugation, fluorescent-activated cell sorting, and magnetic-activated cell sorting. Magnetic labeling is the most common and widely used approach, as it constitutes a fast, reliable, and convenient method to obtain discrete populations with high purity and yield, and the cells are readily available for downstream applications. Here, we present a new type of magnetic nanoparticles that may be used with current separation methods. To illustrate the ease and utility of the system, while maintaining functionality of the isolated cells, bone marrow precursors were isolated from C57BL/6 mice using magnetic particles and characterized by flow cytometry. The cells were then differentiated toward a macrophage-like phenotype in vitro. After culture, the cells were stimulated with LPS and CpG, and the activated phenotype was compared with non-stimulated cells. Surface markers analyzed include CD80, CD86, and MHC II. The supernatant was collected and screened for the presence of inflammatory cytokines, such as IFN- , GM-CSF, IL-1 , and IL-12, among others. The isolated cells show a differential activation phenotype, as well as a defined cytokine profile, in accordance with the stimulation used when compared with non-stimulated cells. In this way, we establish the high-quality performance of BioLegend's new low-cost magnetic cell separation system.

Randox BIOCHIPS – Next Generation Microarrays

1:45 PM – 2:30 PM EXHIBITOR WORKSHOP ROOM 2

Randox Laboratories, Ltd.

Presenters: **Rajneesh Mathur, National Manager, U.S., Randox Laboratories, Ltd., MSc. Endocrinology, MBA**

BIOCHIP arrays offer innovative multiplexing of patient samples using 9x9 mm solid phase chips. Unlike most other multiplex or ELISA methods, BIOCHIPS do not require samples to be run in replicates. Off-the-shelf panels are available to cover biomarkers for cytokines, adhesion molecules, cerebral and metabolic syndrome. Extensive custom panels can be created based upon the unique research project requirements. The following cytokine arrays are available: Cytokine Array I (IL-1a, IL-1b, IL-2, IL-4, IL-6, IL-8, IL-10, EGF, IFN-g, MCP-I, TNF, VEGF)(available in high-sensitivity format, Cytokine Array II (IGF-I, RANTES, eotaxin, IL-I Ra, PDGF-BB, IP-10, IL12-p40; Cytokine Array III (IL-5, IL-15, GM-CSF, MIP-Ia, TNFb: Cytokine Array IV (MMP-9, sIL-2Ra, sIL-6R, sTNFRI, sTNFRII: Cytokine Array V (IL-3, IL-7, IL-13, IL-I2p70, IL-23.) Cerebral Arrays offered also include Cerebral Array I (BDNF, GFAP, H-FABP, IL-6) and Cerebral Array II (CRP, D-dimer, NSE, NGAL, sTNFRI,

TM.) Available metabolic arrays: Metabolic Syndrome Array II (adiponectin, CRP, Cystatin C,) and Metabolic Syndrome Array I (C-peptide, ferritin, insulin, IL-1a, IL-6, leptin, PAI-1, resistin, TNF. Cardiac arrays include Cardiac Array Creatine-Kinase Muscle Brain (CK-MB) Heart-Type Fatty Acid Binding Protein (H-FABP), Troponin I (cTnI) and Cardiac Plus Array Carbonic Anhydrase III (CA III), Creatine-Kinase Muscle Brain (CK-MB), Glycogen Phosphorylase BB, (GP-BB), Heart-Type Fatty Acid Binding Protein (H-FABP), and Troponin I (cTnI).

SUNDAY, MAY 10

Validating and Publishing with Antibodies: How to Increase Reproducibility and Avoid Reviewer Challenges

10:00 AM - 10:45 AM EXHIBITOR WORKSHOP ROOM 1

EMD Millipore

Presenters: **Chandra Mohan, Sr., Manager, Technical Writing & Documentation Development; Wayne Speckmann, R&D Manager; and Kevin Long, Manager, Technical Marketing and Content Development**

Antibodies are extremely valuable and ubiquitous tools in life science research, but in spite of their widespread use in immunoassays over the past several decades, there is still a lack of understanding of the design, validation, and appropriate use of antibodies and controls to publish convincing science. It is generally accepted that a good antibody must be specific and selective and should provide reproducible results in the context for which it is used. The large diversity of antibody users, their background and experience, and their large range of applications, coupled with hundreds of commercial sources for antibodies and immunotechnologies, make understanding antibody theory and use very relevant today. This presentation will discuss several key aspects of antibody design, validation, and best practices for publishing on various applications, from basic immunopurifications and Western blots to conformation-specific binding and high-speed imaging flow cytometry. Typical reviewer comments will be addressed and discussed in the context of antibody-binding theory and practice. Furthermore, best practices in selecting antibodies and the need for multiple validations, documentation, and commercial source partnerships will be discussed.

The Characterization of Receptor Density on Human Blood Cells

11:15 AM - 12:00 PM EXHIBITOR WORKSHOP ROOM 1

BD Biosciences

Presenters: **Robert Balderas, VP, Market Development, BD Biosciences, and Peter Kruztzik, Ph.D., CEO, Primity Bio**

The lack of data describing the characterization of cell-surface antigen density, as well as the expression profiles of cell-surface molecules on the surface of terminally differentiated blood cells, has posed a number of challenges for use in the development of multi-color flow panel design. With the expansion of new colors and the development of flow cytometers with greater than 25 parameters, information on co-expression of receptors and receptor density will provide a much-needed parameter in flow cytometry. Today, we will focus on a study to enable a detailed characterization of receptor expression on multiple subsets of T cells, B cells, and non-T/B cell populations. This presentation will describe a technique for antigen receptor characterization (QuantiBRITE™) and a study outline for the characterization of more than 400 surface antigens.

LEGENDplex™: a More Consistent and Economical Multiplex Solution for Biomarker Assays

11:15 AM - 12:00 PM EXHIBITOR WORKSHOP ROOM 2

BioLegend

Presenters: **Shaoquan Ji, Head of ELISA and Multiplex Technologies**

Multiplex assays for measuring soluble targets are often associated with three issues: (1) costly reagents and high-maintenance instruments; (2) inconsistent performance and data reproducibility; and (3) time-consuming data analysis and reporting. To address these concerns, we developed a new multiplex bead-based assay system for simultaneous quantification of soluble markers using standard, commonly available flow cytometers. We developed assay panels for popular biomarkers (e.g., Th1, Th2, Th9, Th17, Th22, Tfh, inflammatory cytokines, interferons, and chemokines), as well as novel biomarkers for immunology and other biomedical research fields. Our multiplex assay kits are a great value in all three formats: pre-defined panels, mix-and-match panels, and customized panels. For those who develop their own multiplex assays, our functional polystyrene beads are also available. To accommodate needs for different laboratory settings, flexible assay protocols are provided for use with microtiter filter plates, test tubes, or standard U- or V-shaped microtiter plates. The reagents used in our assay kits are well published and were carefully selected for analytical specificity, sensitivity, accuracy, and reproducibility. The assay panels were

validated using biologically relevant samples, which were tested under pre-defined conditions, and expected biological changes were detected, as published. Compared with similar assay products on the market, LEGENDplex™ assays provide equal or better analytical performance, reduced cost, and greater consistency and flexibility. To facilitate data analysis on different flow cytometers (FCS 2.0, 3.0, 3.1, and list mode files), a software package with an intuitive interface, accurate curve-fitting, and robust reporting was specifically developed and is offered free of charge to LEGENDplex™ kit users. Together, our multiplex assay kits and software offer a better and more economical solution for simultaneous quantification or qualitative analysis of multiple soluble biomarkers from serum, plasma, cell-culture supernatant, and other sample types.

The Well-Versed Immunologist: How to Integrate the Immunological Genome Project in Your Research

12:30 PM - 1:15 PM EXHIBITOR WORKSHOP ROOM 1

eBioscience, an Affymetrix business

Presenters: **Gwendalyn J. Randolph, Ph.D., Professor, Pathology and Immunology, Washington University in St. Louis**

This workshop will introduce the attendee to the Immunological Genome Project and provide an overview of its goals, highlights of data outcomes, and current endeavors. Examples will include the impact of the project on macrophage biology. Finally, the workshop will illustrate how to use the online resources of the Immunological Genome Project to avail your ongoing research.

Tools for the Study of ILC2 Regulation During Lung Inflammation

12:30 PM - 1:15 PM EXHIBITOR WORKSHOP ROOM 2

STEMCELL Technologies

Presenters: **Grace F.T. Poon, Ph.D, and Itziar Martinez-Gonzalez, Ph.D, Postdoctoral Fellows, Department of Pathology and Laboratory Medicine, University of British Columbia**

Group 2 innate lymphoid cells (ILC2s) are a relatively new subset of cells that have been implicated in allergic lung inflammation. STEMCELL Technologies provides cell isolation products, specialized cell culture media, and supporting reagents for ILC2 research. Workshop highlights include breakthrough results from two ILC2 studies, featuring optimized methods for the study of ILC2s using products by STEMCELL Technologies. These studies describe the LPS mediated negative regulation of ILC2s and the ability of allergen-experienced ILC2s to display memory-like functions.

Comparison of High-Performance and Budget-Friendly Flow Cytometers Using Esoteric Cell Analysis

1:45 PM - 2:30 PM EXHIBITOR WORKSHOP ROOM 1

ACEA Biosciences, Inc.

Presenters: **Ryan Duggan, Technical Director Flow Cytometer Core Facility, University of Chicago, and Garret Guenther, Ph.D., Application Scientist**

Traditional methods, using the side-population analysis to identify stem cells, involve the use of a flow cytometer with an ultraviolet laser-excited dye. These methods present some cost challenges for researchers. Even though other violet dyes, such as DyeCycle Violet (DCV), which uses the more economical violet laser, are now available, the cost of a flow cytometer to provide this type of analysis is still an obstacle. More recently, new benchtop flow cytometers have become available that can provide the quality of a high-end flow cytometer at a much more affordable cost. In this analysis, we sought to identify stem cells and progenitors using the side-population technique in murine bone marrow. We used ACEA Biosciences' NovoCyte flow cytometer, which maximizes optical design through its use of shared PMTs. To conduct the side-population analysis, we stained bone marrow samples with DCV-conjugated antibodies for lineage markers, Sca-1, and c-kit. Using a gating sequence to define lineage-Sca-1$^+$c-kit$^+$ cells combined with back-gating strategies, we were able to confirm the correct identification of stem cells. The use of this budget-friendly cytometer allows researchers with limited resources to conduct complex analyses and generate quality data.

Advances in Immune Repertoire Profiling Using the immunoSEQ™ Assay

1:45 PM - 2:30 PM EXHIBITOR WORKSHOP ROOM 2

Adaptive Biotechnologies Corp.

Presenters: **Catherine M. Sanders, Director, Scientific Liaison**

Adaptive Biotechnologies' commercial products combine the capabilities of bias-controlled multiplex PCR, high-throughput sequencing, and a bioinformatics pipeline to profile T and B cell receptors (TCRs and BCRs). This cutting-edge capability is complemented by powerful software tools that facilitate analysis, visualization, and comparison of TCR or BCR sequence data. Adaptive Biotechnologies' immunoSEQ™ assay is applicable in various fields, including autoimmunity, infectious disease, vaccine development, allergy, oncology, drug development, and transplantation. The power of the immunoSEQ™ assay is now available as a service and a research use-only kit. Come and learn how the immunoSEQ™ assay can be applied to your research.

MONDAY, MAY 11

Variables in FBS Impact Cell Performance, Reproducibility and Relevant Experimental Results

10:00 AM – 10:45 AM EXHIBITOR WORKSHOP ROOM 1

Essential Pharmaceuticals, LLC

Presenters: **Adam Elhofy, Ph.D., CSO, Essential Pharmaceuticals, LLC**

Fetal bovine serum (FBS) has been used in cell culture for decades. Even though it introduces the greatest variability into cell culture, surprisingly FBS is not intensely scrutinized as a reagent. The use of FBS in cell culture applications will be examined, as its use may go against the basic principles of scientific experimentation in that the variables are not controlled for, it contains unknowns, and results from experiments using FBS in cell culture potentially cannot be replicated.

Cytokine Assay Tips from the Experts: Why Just Multiplex When You Can MILLIPLEX®

10:00 AM - 10:45 AM EXHIBITOR WORKSHOP ROOM 2

EMD Millipore

Presenters: **Mike Vaughn, Multiplex and Cytometry Specialist, and Debra MacIvor, Product Manager**

Low levels of chronic inflammation, marked by subtle changes in many cytokines, are involved in many clinical and sub-clinical disease states, such as autoimmune disease, cardiovascular disease, diabetes, neurological disorders, and cancer. Measuring picogram levels of cytokines in multiplex, therefore, is critical for understanding the pathogenesis of these diseases. At this workshop, you can participate in an interactive "dry run" demonstration of how to use the MILLIPLEX® multi-analyte panel (MAP) human high-sensitivity T cell panel to detect low levels of as many as 21 cytokines and chemokines simultaneously, using a Luminex® MAGPIX® instrument. If you are unfamiliar with the technology, you will walk away with an idea of how the Luminex® technology and MILLIPLEX® MAP multiplex panels enable you to investigate the modulation and expression of dozens of analytes simultaneously with speed and sensitivity, dramatically improving productivity. If you are proficient with the technology, our specialist will be providing valuable tips, ranging from sample collection and preparation of reagents to the immunoassay procedure, advice for reducing variability, and best practices around data acquisition and analysis. These tips and more can be found in our new technical guide, entitled "The Power of Biomarker Analysis," a copy of which will be given to each of our workshop attendees.

Recent Work & Current Methods in Immunology MicroRNA Research

11:15 AM - 12:00 PM EXHIBITOR WORKSHOP ROOM 1

LC Sciences/Norgen Biotek

Presenters: **Christoph Eicken, Ph.D., Head of Technical Services, LC Sciences, and Moemen Abdalla, Ph.D., Senior Scientist, Norgen Biotek**

MicroRNAs have proven to be an extremely important part of the gene expression regulation mechanism. While the role of microRNAs in cancer was recognized early on, expression profiling and functional studies have now shown that microRNAs participate in the regulation of many biological systems. There is now strong evidence suggesting that microRNA signaling plays a significant role in both innate and adaptive immune , and their dysregulation contributes to pathogenesis. This workshop, presented by LC Sciences and Norgen Biotek, will focus on the recent developments of microRNA research in the field of immunology and current methods for microRNA isolation and profiling: a brief review of microRNA basics, including history, biogenesis, and function, as well as case studies and application examples.

Beyond Coincidence: Analyzing Individual Exosomes with Flow Cytometry

11:15 AM - 12:00 PM EXHIBITOR WORKSHOP ROOM 2

Bio-Techne (formerly R&D Systems)

Presenter: **Tom Maslanik, Ph.D., Product Manager, Immunology and Flow Cytometry**

Current methods for interrogating small particles, such as exosomes, measure either averages from mixed populations of particles or are non-quantitative. Unfortunately, these approaches potentially mask differences in mixed populations of vesicles or produce non-representative data. With the use of a modified flow cytometer adapted for small-particle analysis by John Nolan at the Scintillon Institute, we were able to label and separately detect over 10 analytes on individual exosomes. These analytes included general exosomal markers, such as CD9 and CD63, markers of tissue or cell of origin, and several immunological signaling molecules. The data generated demonstrate the feasibility of this approach to support future characterization of heterogenous groups of exosomes or other small vesicles. This research should provide a deeper understanding of the diverse population of vesicles that are emerging as key factors in a number of widely studied physiological and pathological processes.

Integrated Protein Analysis Techniques

12:30 PM - 1:15 PM EXHIBITOR WORKSHOP ROOM 1

Thermo Fisher Scientific

Presenters: **David Bourdon, Ph.D., Staff Scientist**

Greater understanding of immunological processes necessitates knowledge of both the presence and level of proteins in cells, tissues, and fluids in the models we study. Join us for a presentation on various techniques for detection and quantitation of specific target proteins in biological samples. We will discuss the relative merits of microscopy, Western blot, flow cytometry, ELISA, Luminex® multiplex assays, and more, as well as when it may be appropriate to choose one technique over another.

Imaging Flow Cytometry: the Benefits of Combining Microscopy and Flow Cytometry in One Platform

12:30 PM - 1:15 PM EXHIBITOR WORKSHOP ROOM 2

EMD Millipore

Presenters: **Sherree Friend, Ph.D., Applications Scientist**

Imaging flow cytometry combines the speed, sensitivity, phenotyping capabilities, and statistical power of flow cytometry with the detailed imagery and functional insights of microscopy. The features and benefits of the Amnis® brand ImageStream®X and FlowSight® imaging flow cytometers will be explored. Quantitative image analysis and greater fluorescence sensitivity amplify research potential beyond the traditional flow cytometer or microscope alone. New publications and applications in immunology will be discussed.

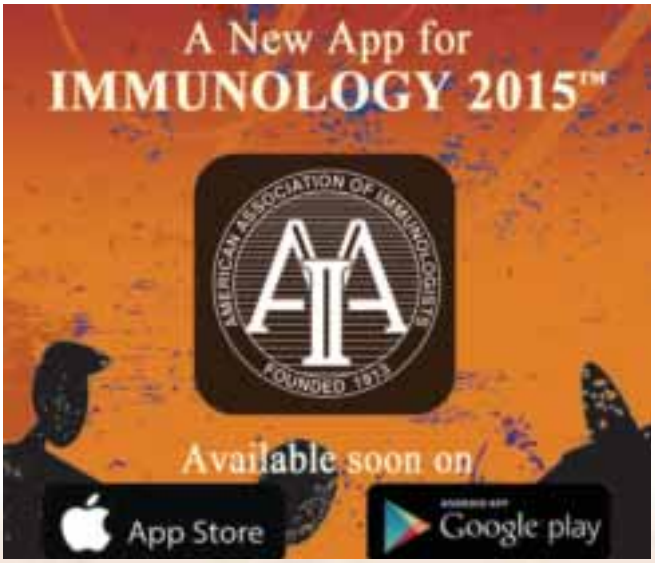
Toward the Ultimate Diagnostics: Next-Generation Sequencing (NGS) of the Immune Repertoire for Biomarker Discovery

1:45 PM - 2:30 PM EXHIBITOR WORKSHOP ROOM 1

iRepertoire, Inc.

Presenters: **Jian Han, CEO**

In this seminar, learn how to perform immune repertoire amplification using a proprietary multiplex PCR method. Our streamlined process is inclusive, semi-quantitative, and easy to use. You can use a regular PCR machine or use the iCubate platform for automated library prep. From a typical peripheral blood sample, you will obtain 100,000–300,000 unique CDR3 sequences. Amplified libraries are pooled and submitted for NGS using either the Illumina or Roche 454 platform. Up to 60 samples can be pooled for one sequencing run to reduce cost. We have established an online data analysis pipeline that applies stringent filters to remove errors and provides many different types of analyses free of charge. As part of the seminar, we will also discuss the non-profit initiative, Repertoire 10K (R10K), which aims to study the immune repertoire of 100 different diseases. We have developed two key indexes to describe the immune repertoire, i.e., the diversity index (or D50) and sharing index. These indexes allow us to identify disease-specific signatures for diagnosis, prognosis, and treatment guidance. Please join us to learn more!



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Innate Immunity: Introduction to the Cells

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Complement

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

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

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Antigen Processing and Presentation

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Faculty

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

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

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

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

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

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

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

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

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

Avinash Bhandoola, *NCI, NIH*
T Cell Development

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

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

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

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

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

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

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

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

David Hafler, *Yale School of Medicine*
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Tumor Immunology

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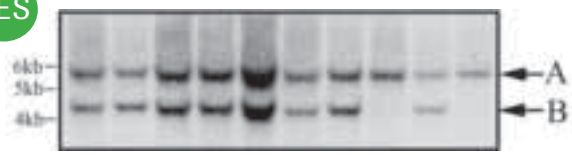

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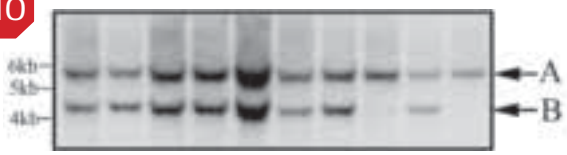

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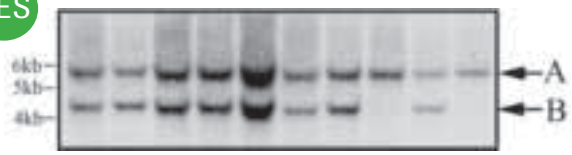

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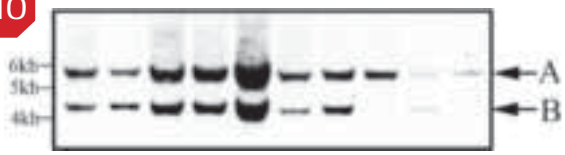

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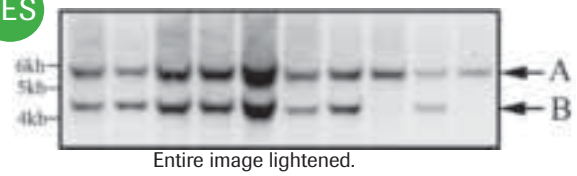

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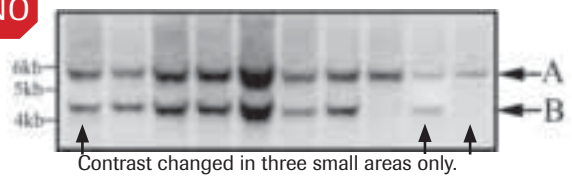

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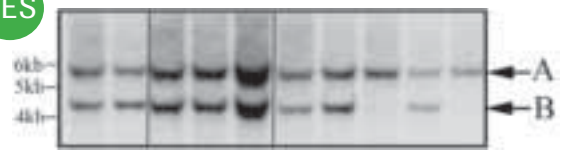

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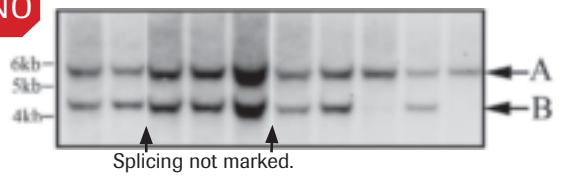

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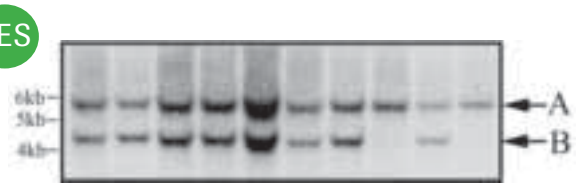

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THE SCIENTISTS BEHIND THE SCIENCE

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)
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Important Dates for Two AAI Awards Programs

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

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KEY DATES	APPLICATIONS OPEN	APPLICATIONS CLOSE
	JANUARY 15	**MARCH 15**

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

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

Direct inquiries to fellowships@aai.org.

AAI Travel for Techniques Award Program

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

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

Direct inquiries to tft@aai.org.

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

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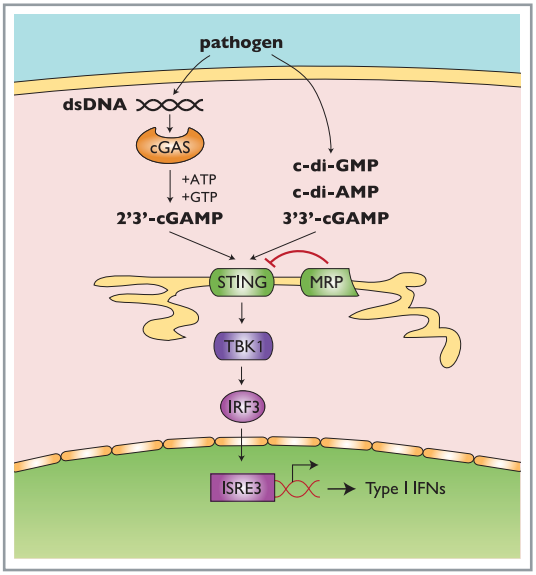

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