2016 ISV Annual Congress update

You may still submit late-breaker abstracts for the ISV Congress (www.ISVCongress.org). We have reserved a few slots for oral presentations, even though the ISV Congress Secretariat, headed by ISV Treasurer Shan Lu, has been working in overdrive notifying scientists of the results of the Scientific Committee’s review of abstracts for both oral and poster presentations. The schedule of the presentations if being designed now based upon the Scientific Committee’s decisions, as each session is a mixture of invited and selected speakers. And as described in the last newsletter, post presenter will have the opportunity during on-site registration to sign up for “elevator speeches”, i.e., 1 minute/1 slide presentations of the gist of their poster at the beginning of each poster session. These will enable scientists to hone their presentation skills and attract interested parties to your poster.

Also new this year, the Congress is offering awards to facilitate attendance: ISV Presidential Travel awards for trainees, and ISV LMIC awards to enable scientists from Lower and Middle Income Countries to present their research. The Vaccine Renaissance (VaxRen) meeting partner is providing NIH-funded awards for women and minority scientists. All of these awards demonstrate the commitment that ISV has to supporting participation in the Congress from a diverse global group of scientists. The ISV Presidential Awardees were selected from the abstracts submitted by the June 24 abstract deadline. Scientists from LMIC and women and minority scientists were selected for awards based upon the submission of their abstracts through August. These recipients will be honored at the ISV Awards session on Tuesday, October 4.

And yet another novel addition to this year’s Congress, will be opportunities for vaccine scientists to explore career opportunities. The career panel has been expanded from its initial goal of providing advice for graduate students and post-docs about seeking positions and mentors. The panel now will also aim to help early and mid-career scientists by including Dr. Laina King, the new Senior Program Officer in the Office of the Director of the US NIH, whose focus is on developing mentoring and positioning programs for early and mid-career scientists.

Humoral and intestinal immunity induced by new schedules of bivalent oral poliovirus vaccine and one or two doses of inactivated poliovirus vaccine in Latin American infants: an open-label randomised controlled trial.


The Global Polio Eradication Initiative (GPEI) was launched following the forty-first World Health Assembly resolution in 1988 that called for the global eradication of polio. Currently, polioviruses remain endemic in Afghanistan and Pakistan with transmission of serotype 1 and serotype 3 strains of wild poliovirus. A major milestone of the GPEI was removal of the serotype 2 component from the oral poliovirus vaccine (OPV) in April, 2016. Removal of serotype 2 from OPV represents a safeguarding measure to prevent vaccine-associated paralytic poliomyelitis caused by this serotype in OPV recipients or their close contacts, and prevent the sporadic emergence of transmissible vaccine-derived serotype 2 polioviruses. The Lancet article by Edwin J. Asturias and his colleagues reports that a mixed immunization regimen of bivalent oral poliovirus vaccine (bOPV) and trivalent inactivated poliovirus vaccine (IPV) induced robust humoral and intestinal immunity against serotype 1 and serotype 3, and seroconversion of a substantial proportion of immunized infants to serotype 2.
Dear ISV members and friends,

The International Society for Vaccines has been known for the excellent quality of science that is presented each year at the Annual Congress and for the opportunities to network and interact with scientists along the full spectrum of vaccine research and development. The leadership of ISV has expanded the Society’s impact for members in a variety of ways such as via the Newsletter, which highlights developments and issues in vaccinology, discussion groups on LinkedIn, curated by our Secretary, Ted Ross, and the career development panel at the Congress. You will notice that our revamped Newsletter, edited by Randy Albrecht now has a thematic organization, with this issue devoted to the extremely timely topic of vaccines against vector-borne diseases.

The inaugural Career Development panel at last year’s ISV Congress in Seoul was enthusiastically received, and provided attendees not simply the opportunity to obtain advice from leading senior vaccinologists, but to maintain contact with them for future advice. This year, ISV would like to expand the effort, by establishing a more formal mentoring program and by expanding the reach of the program to early career scientists, rather than simply graduate students and trainees. Please see the article about the ISV Congress for more details. In addition, ISV is finding new ways, including at the Congress, to enable members to connect more easily with scientists and companies seeking to hire vaccinologists, and for scientists to explore specific job openings.

As ISV expands the benefits for its members, we’d like to highlight that networking and personal visibility via ISV involvement are perhaps two of the main opportunities for scientists to themselves actively benefit their careers via ISV. Volunteering for membership on committees or to help with activities, such as the newsletter, will increase your interactions with senior vaccinologists and your visibility in the vaccine community. For example, this enthusiasm is what led to Randy Albrecht’s selection as Editor of the ISV Newsletter. Your opportunity for scientific collaborations and career options can only increase by your involvement. Please feel free to personally contact me with your interests— and ideas for new areas for ISV’s involvements— at liu@ProTherImmune.com

See you in Boston, October 2–4, 2016.
Visit us at www.ISVCongress.org for more details.
Margaret Liu

Frédéric Tangy
Dr. Tangy is Director of Research at the French National Centre for Scientific Research, Section de Biologie de la cellule, relation hôte-pathogène et immunologie. He is the head of the Viral Genomics and Vaccination lab at Institut Pasteur, CNRS UMR 3569, Paris, France. Dr. Tangy is a conference co-chair for the 2016 ISV Congress that will be held in Boston, MA, and will also serve as the co-chair for the 2017 ISV Congress. He is one of the ten ISV fellows that were selected in 2015. Dr. Tangy received his PhD in Pharmacology and Dr. Sc. in Microbiology from the Pierre and Marie Curie University (University of Paris VI). He is an internationally renowned scientist, professor, inventor, entrepreneur, and writer and director of TV film documentaries. He has coauthored over 130 publications on vaccines, including measles virus-vector vaccines, molecular biology and pathogenesis of viruses, innate immunity, and virus host interactions. As an inventor, he holds over 20 patents with the US and the EU Patent and Trademark Office. As an entrepreneur, he is co-founder of Epixis SA, Paris, France, a biotechnology company that develops vaccines based on virus-like particles designed to confer protection against hepatitis C. He also cofounded OncoVita, a start-up company that develops the use of modified measles virus as oncolytic agents. Dr. Tangy will attend the 2016 ISV Annual Congress, and looks forward to discussing his research with Congress attendees.

Margaret A. Liu

Question of the month

Insect control is critical to reduce spread of vector–borne human disease. Traditional mosquito control measures include source reduction (habitat modification) and insecticide application. However, the increased prevalence of insecticide resistant mosquitoes is reducing the effectiveness of local and federal vector control programs. Which of the following approaches will likely be the most successful for mosquito control?

- Biological control (i.e. “biocontrol” by mosquitofish, cyprinids, and killifish)
- Sterile insect technique (SIT)
- Wollbacteria bacteria-inoculated male mosquitoes
- “Gene drive” mosquito control
- Reformulation of existing or development of new insecticides

Accepted 2016 ISV Congress Speakers and Session Chairs

- Rip Ballou, GSK
- Jasmine Belkaid, NIH
- Clare Cutland, NIHLS, South Africa
- Victor Dzau, President, Institute of Medicine, National Academy of Sciences
- TongMing Fu, Merck
- Michael Good, Griffith Univ.
- Cyril Gray, USDA
- Tom Heineman, GSK
- Adrian Hill, Director Jenner Inst. Prof. Univ. Oxford
- Michael Houghton, U. Alberta
- Luis Jodar, Pfizer
- Marie-Paule Kiery, Assistant Director General, WHO
- Philip Krause, Deputy Director, CBER, FDA
- Myron Levine, CVD, Univ. Maryland
- Bonnie Maldonado, Stanford Univ.
- Kees Melief- Leiden Univ., Isa Pharmaceuticals
- Tom Monath, New Link Genetics Corp
- Flor Munoz, Baylor
- Albert Osterhaus, Hannover Univ.
- Tom Ottenhoff, Leiden Univ.
- Stan Plotkin, UPenn, Sanofi
- Ed Rybicki, U. Cape Town
- John Shiver, Sanofi
- Thomas Wisniewsk, NYU

Click here to vote
2016 Hwasun International Vaccine Forum
The 2016 Hwasun International Vaccine Forum, organized by Dr. Joon Haeng Rhee and supported by the Korean Vaccine Society, was hosted at the Hwasun Vaccine Industrial Complex, Hwasun, Jeonnam Province, South Korea from June 10–11, 2016. The Complex is the vaccine industry special district designated by the Korean government. With than 900 delegates in attendance, the Forum brought together experts from vaccine research institutions, companies, governments and international organizations around the world. The Forum was hosted under the theme “Eradication of Diseases through Vaccination” with presentations by distinguished authorities from the vaccine field. The plenary lecture was provided by Nobel laureate Dr. Rolf M. Zinkernagel of University Zurich. The Forum identified and discussed current challenges in vaccine development, innovative vaccines in the product development pipeline, the international ethics of developing vaccines against emerging infectious diseases, and national vaccine policies of South Korea, thereby providing perspectives from vaccine research to international coordination to governmental policies.

Job Bank at ISV Congress
The ISV Congress will provide a job bank of listings since the Congress is an ideal place to search for and interview candidates for openings. If you have a position to fill, take advantage of this opportunity by posting the position at http://www.isv-online.org/component/kunena/opening-positions
Visit the Congress website (www.ISVCongress.org) to see more details regarding the Job Bank.

Proteomics for Antigen Selection
The previous ISV poll of the month question asked readers if searching of public databases that are designed to share research and clinical data advance their hypothesis-driven research. The results from this poll, archived online (www.ISVCongress.org), revealed that forty percent of the respondents felt mining of public databases moderately advanced their research, whereas thirty percent did not access public databases.

The methods review by Wudan Yan entitled “Enhancing Vaccine Development: Using proteomics methods to inform antigen selection” published in the June 2016 edition of The Scientist, provides an informative overview of how proteomics approaches can be applied to optimize antigen selection for vaccine development. Proteomics can be applied to study T cell responses, and specifically the antigens encoded by pathogens that are processed and presented by on the surface of T cells.

Vaccine Acceptance and Digital Epidemiology
The Strategic Advisory Group of Experts (SAGE) on Immunization, established by the World Health Organization (WHO) in 1999, defines vaccine hesitancy as a “delay in acceptance or refusal of vaccines despite availability of vaccination services. Vaccine hesitancy is complex and context specific varying across time, place and vaccines. It includes factors such as complacency, convenience and confidence.” Vaccine complacency refers to a belief that vaccines offer little benefit, or that the risk of the disease that the vaccine protects against does not merit vaccination. The 2015 report, State of Vaccine Confidence, published by the Vaccine Confidence Project, London School of Hygiene & Tropical Medicine, provides the reader perspectives on the issues undermining vaccine confidence and contributing to vaccine hesitancy. Probably since Edward Jenner’s successful 1796 use of cowpox material to create immunity to smallpox, there have probably been a small percentage of people hesitant of vaccines. Search trends reported on Google Trends, an Internet query database, indicate an increased interest in dengue vaccines in the past twelve months whereas interest in influenza vaccines has routinely peaked in October during the past five years. According to Google Trends over the past year, public interest in a Zika vaccine initially peaked at the end of January of 2016 and then has steadily increased. Such search trends hopefully signal increasing public awareness and acceptance of vaccines. Disease surveillance is the epidemiological practice of tracking disease spread and establishing patterns of disease progression. Database platforms that track Internet queries, represent a new era of digital epidemiology. Kevin M Bakker and colleagues report in their PNAS publication their findings regarding the predictive value of internet query data to assess the impact of varicella zoster virus (VZV) vaccination on outbreaks of chicken pox disease.

Donald A. Henderson
(September 7, 1928 – August 19, 2016)

Dr. Henderson described himself as a “disease detective,” but he was also an ardent believer of vaccination, physician, epidemiologist, educator, Dean, author, and statesman. Dr. Henderson served as chief of viral disease surveillance at the Epidemic Intelligence Service (EIS) of the Communicable Disease Center (now Centers for Disease Control and Prevention), directed the World Health Organization’s (WHO) decade-long global campaign to eradicate smallpox, and initiated the WHO’s poliomyelitis eradication program. Following his globe-trekking efforts to eradicate smallpox, Dr. Henderson served as Dean of the Johns Hopkins’ Bloomberg School of Public Health (formerly School of Hygiene and Public Health) and professor of epidemiology and international health. Having received the smallpox vaccine, ACAM2000™ (Acambis, Inc., Cambridge, Massachusetts), I can reflect on my developing telltale scare and admire the efforts of Dr. Henderson. His efforts to eradicate smallpox were not in vain, and hopefully will not be forgotten.

From the Editor

D. A. Henderson
Johns Hopkins
University
Mosquitoes: The Annoying Pests of the Century

For those who live in the parts of the US with seasons, the warm seasons of the year are always bitter sweet. We relish the gradual transition from brutal winter to sweet summer but with the increase in temperature, comes the increase in mosquito activity. We spend millions every year on determining methods to better repel mosquitoes—such as sprays, coils, even application—mainly because of the itchy welts that are left behind by females after feedings. Rather recently, mass pandemonium has come about because of the emergence of the Zika virus in Brazil and the effects that the virus has had on newborns. This mass pandemonium has prompted significant efforts in protection from mosquitoes because of the way in which these insects are able to transmit certain diseases that lie in the blood of their meals.

During this month, we honor Dr. Donald Ross for his contributions towards this discovery.

Over 100 years ago, Dr. Donald Ross was awarded the Nobel Prize in Physiology or Medicine for his work on the transmission of malaria. He was noted for discovering the malarial parasite in the digestive tract of the mosquito, which not only proved malaria was transmitted by mosquitoes but also helped create a basis for neutralization efforts for the disease. In honor for this integral discovery, August 20th is designated as World Mosquito Day on which The London School of Hygiene and Tropical Medicine annually holds extravagant celebrations.

Over in North America around this time, unfortunately emotions are not high in the same regard. People are worried about being infected with the Zika virus but the question is, should we actually be worried about the spread of the Zika virus via mosquitoes in North America? The answer to this question has to do with distribution: The Zika pandemic originated in Brazil, which holds an environment for the particular mosquito species that carries the virus. Those mosquitoes carrying Zika in South America are not common in particular regions of North America because certain areas have a different climate than that of Brazil as a result of its geographical position. Consequently, the likelihood of being infected with Zika from a mosquito is quite small. What we as North Americans should be mulling over, is how we can help those currently living in Brazil from further contracting the virus. In doing so, we would be focusing our priorities primarily on the safety of others. This, instead of consistently centering our efforts on keeping ourselves from harm’s way even when we are rather safe: What we as Americans are historically known for doing.

Contributed by Mr. Blake Martin, Packer Collegiate Institute, NY.

Point of View

The world is attempting to cope with an epidemic of Zika virus, first identified in 1947 but moving from Africa to Asia to Polynesia to the Americas through the medium of its vector, Aedes mosquitoes. However, Zika is not the only epidemic vector–borne disease. In attempting to prepare for future emerging diseases through pre–epidemic vaccine development, I helped review the current pathogens for which we do not have licensed vaccines. We came up with a list of about a dozen agents, congruent to those identified by WHO and other organizations. Interestingly, many were transmitted by insect vectors. Specifically, besides Zika, the list included Chikungunya, Congo–Crimean Hemorrhagic Fever, Rift Valley Fever, Severe Fever and Thrombocytopenia virus and West Nile Virus. To those, we could have added Lyme borreliosis, Rocky Mountain Spotted Fever, and several other tick–borne diseases.

In addition, there are the well–known flaviviruses transmitted by insects: yellow fever, Japanese encephalitis, tick–borne encephalitis and dengue. Fortunately, we have vaccines for all of them, although the vaccine against dengue needs improvement and the yellow fever vaccine is in short supply owing to old production methods that require improvement.

While many insects are beneficial to humans through activities such as cross–pollination and digestion of carrion, it is hard to identify a positive role for mosquitoes and ticks. Fortunately, when vaccine development has been attempted it has been possible to develop good vaccines against viruses transmitted by insects because serum antibody often correlates well with protection. This has been particularly true for the flaviviruses, as originally demonstrated by Max Theiler and his colleagues more than 80 years ago. However, it is time that vaccine development should be directed against the insect vectors themselves. Some success has been reported with tick antigens and these efforts should be extended to those of mosquitoes. Meanwhile, we should extend the search for antigens cross–reacting between similar viruses in order to broaden protection to multiple pathogens. This could mean adding antigens other than viral envelopes. I realize these ideas are speculative, but insect–borne pathogens are ubiquitous, dangerous, and we do not have vaccines for all of them. Even if we did, cost and deployment will be difficult. Other strategies, such as the use of sterilized male mosquitoes and Wolbachia infection of insects must also be pursued.

Meanwhile, many of us are participating in the creation of an organization called Coalition for Epidemic Preparedness and Innovation (CEPI) that will seek funds to manufacture candidate vaccines against emerging pathogens, including many transmitted by insects. If our plans are successful, CEPI should be in business by 2017.

Stanley A Plotkin

International Society for Vaccines

We would like your ideas for future newsletter articles. Is there an article you’d like to submit to the newsletter?

What are the most pressing issues in vaccine research? Please send us your thoughts.

Contact us:
Society website: http://isv–online.org/
LinkedIn: https://www.linkedin.com/groups/8359482/profile
2016 ISV Congress: http://isvcongress.org/