Happy 2018! As we welcome in the New Year, we recognize that this is a dynamic and important time for ISV presenting a slew of novel challenges and opportunities for the vaccine field. Old paradigms are rapidly being reworked with virtually no area of vaccine research, vaccine development, clinical trials, vaccine deployment or policy left untouched. In just the last 6 years the EID outbreaks of MERS, Ebola, Zika, CHIKV as examples have underscored the importance of rapid vaccine development and deployment capabilities to meet EID challenges, as well as growing appreciation for creativity and flexibility in clinical trial design. Novel and important new partners have emerged in this space. The creation of CEPI (The Coalition for Epidemic Preparedness Innovations) and the announcement of the new Gates Medical Research Institute underscore that new approaches for both old and new ID foies will be tackled with a focus on creativity and innovation that will challenge and influence the vaccine field in diverse ways. The footprint of vaccine research has increased. Concepts of how to apply vaccines as part of cancer treatment or as prevention of recurrence, are moving vaccines from being considered a secondary player in cancer clinical management to vaccine approaches gravitating towards becoming a central plank in the newest area of cancer therapy research. In 2018, the very definition of what is a vaccine and how vaccines are deployed in therapy and prevention continues to be refined.

It is important to consider as we face these opportunities that ISV has never been stronger and more capable of lending a hand. All members of ISV should be proud that the energy and accomplishments of our members and our leadership over the past few years have increased our voice, solidified our society and put us in a strong financial position. We are very much in debt to all of you who have brought us to where we are today. We are building from the excitement and accomplishment of the highly successful ISV 2017 meeting held in Paris last October. This meeting was organized in partnership with the Institute Pasteur, which provided the Institute itself as the historic backdrop for the many ISV sessions. ISV prides itself on serving as a society that lifts all boats in the vaccine space and the 2017 meeting displayed the vitality, and innovation and diversity of topics and exciting panel discussions, illustrative of the central tenets of ISV. We are excited to now move back across the ocean to Atlanta, which will be the site of the 2018 annual meeting. Once again local partners will play a major role the 2018 meeting. More information will be forthcoming on the ISV website and in the ISV newsletter so please stay tuned.

As we move into 2018, a new slate of elected ISV officers is firmly established. In addition to myself joining as President (I was lucky to have served in my training period as President-Elect under the incomparable Margaret Liu), Margaret now assumes the position of Past President. We are fortunate that our constitution provides for ISV past presidents to continue to provide leadership and guidance to ISV in their position as an officer of the Board. We are excited that the incredibly energetic Ted Ross is now serving as President-Elect. He will be performing double duty as he will also be busy serving as Co-chair of this year’s ISV meeting in Atlanta. A mainstay and central pillar of the ISV, Shan Lu will be serving this year as our treasurer, continuing to provide leadership and his steady guidance as well as keeping his close eye on our finances. We are excited to complete our officer team with Denise Doolan serving as secretary. Denise was an outstanding dynamic leader and co-chair of the Paris meeting and now we are thrilled as she will also be performing double duty, serving with Ted as this Co-chair for the Atlanta meeting. The remaining of our new Executive Board leadership is groomed from 6 different countries representing four continents. These exceptional members will bring a new vitality and personal perspective to the ISV Executive Board are Maria Isaguilants, Ken Ishii, Linda Klavinskis, Odile LeRoy, Joon Haeng Rhee, and Anna-Lise Williamson.

As I begin my service as President, I believe it is important to keep in mind that it is the goal of the ISV as we step forward to address new opportunities and challenges that our overarching goals and focus remains the same. It is the goal of ISV to serve all of our members and to continue to build the society and continue to lift all boats in the vaccine oceans, lakes and ponds around the globe. In this regard we extend our hand encouraging all of our members to be energized to take an active role in this society, your society. Members

Continued page 3
Message from Past President, Dr. Margaret A. Liu

It has been a privilege to serve you, the members of the Society, during these past two years. This is my last letter to you as President of ISV, as our new Officers and Executive Board members will take their positions at the turn of the year. It has been an exciting time for the Society as we were able to increase our activities globally through interactions with country and regional societies, as the Executive Board has increasingly reflected the international nature of our members, and as we took over all of the logistics and administrative facets of the Annual Congress. The latter could only have been accomplished thanks to the tireless efforts of ISV Treasurer, and Head of the Congress Secretariat, Shan Lu. The results showed in the highly successful 2016 and 2017 ISV Congresses in Boston and Paris, where in addition to the usual excellent and ground-breaking science presented, attendees indicated that they had formed new collaborations and advanced their own knowledge and research.

A particular focus of mine has been for the Society to help younger scientists. This has included having a career development session at each of the past three Congresses, where trainees can hear from, meet, and ask questions of senior vaccinologists from a variety of career pathways. As a way of paying back by paying forward the individuals whose generosity enable me to attend conferences (and college and medical school!), I inaugurated the Presidential Travel Awards to provide funds to help trainees whose abstracts were judged worthy by the Scientific Committee of presenting either orally or as posters, attend the Congress. This year, the award winners also were my guests on the incredible dinner cruise on the Seine seeing the sights of Paris under a full moon. We instituted a mentoring program last year, for which ISV fellows, and other senior scientists have volunteered to advise trainees about issues related to their careers, and to help contact colleagues for potential positions.

Given the truly international nature of the membership, ISV has also tried to ensure that from both the scientific perspective of presentations, and for the attendees, adequate attention is paid towards addressing issues of developing countries, whether technologies to make vaccines accessible globally, or by enabling scientists from lower and middle income countries (LMIC) to attend the ISV Congress. We have been fortunate that the Bill & Melinda Gates Foundation has once again been a partner with ISV for the past couple of years. ISV has been able to provide funding to a number of scientists to facilitate their attendance. As importantly, ISV partnered with Human Vaccines & Immunotherapy to publish a special issue for the 2016 Congress, and HV&I enabled open access for the publication at no extra charge. ISV and HV&I enthusiastically renewed the partnership to produce another special issue for the 2017 Congress, which is currently in the works.

As we move into the new year, ISV is seeking new ways to serve our membership and society at large as well as to provide opportunities for our members to contribute to our mission. We have increased opportunities for ISV to be partners for regional or topical vaccine meetings (such as will occur on January 23, 2018 in Osaka, as the 2nd ISV Asia Vaccine and Immunotherapeutic Symposium for the Japanese Vaccine Society/Japanese Vaccine Adjuvant Research Consortium led by ISV Board member Ken Ishii,). And ISV would like to focus on issues such as vaccine advocacy for the public and funding agencies. We increasingly will turn to ISV members to serve on Society committees dedicated to these efforts, which in turn can benefit members by increasing their international profile and networking.

In closing, I’d particularly like to thank my fellow officers, Shan Lu – Treasurer, and Ted Ross – Secretary, who do so much heavy lifting for ISV. Thanks are also important for the current board members, Annie DeGroot, Denise Doolan, Adolfo Garcia-Sastre, Nik Petrovsky, Joon Haeng Rhee, Ray Spier, Jeffrey Ulmer, and Dave Weiner. Ted Gibson, who has played such a crucial role in running the ISV Congress Secretariat, as Shan’s right-hand man, is due all our appreciation. We also are grateful the efforts of Cindi Callaghan, who, until ISV hired a specific part-time administrator, provided much-needed administrative support. You all are becoming increasingly familiar with Pam Joyce, who is now ISV’s administrative assistant, bringing experience working with other societies as part of Lutine Management. And we all appreciate Randy Albrecht, the Editor of the ISV newsletter, whose efforts are crucial for the very informative newsletter which requires much more work cajoling ISV members to write articles than he probably realized when he graciously agreed to take on the position. He and Secretary Ted Ross curate our social media presence and discussion groups via LinkedIn and Facebook as well. We welcome the incoming new officers: Dave Weiner-President, Ted Ross-President-elect, Denise Doolan-Secretary, and Shan Lu-Treasurer. Likewise, we anticipate great things from the new board: Maria Isaguilants, Ken Ishii, Linda Klavinsks, Odile Leroy, Joon Haeng Rhee, and Anna-Lise Williamson.

Wishing all of you productivity for your important work as well as peace in this holiday season.

Margaret
President's Letter continued from page 1

having an interest in playing a role in society projects or having a suggestion for improvements or ideas or projects are encouraged to reach out to me or our secretary, Denise Doolan for further discussion. We look forward to welcoming you as volunteers on ISV committees, or joining in ISV activities or working on creative new concepts for ISV. A list of ISV committees will be available on the ISV web site and in the future edition of ISV newsletters so please keep an eye out for these opportunities. The ISV looks forward with great expectation to working together to face the challenges of 2018.

With best New Year’s Wishes, David B. Weiner, President ISV

ISV Fellow of the Month, Dr. Jeffrey B. Ulmer

Dr. Jeffrey B. Ulmer received his B.Sc. with honors from the Department of Chemistry at the University of Regina in 1978 and was a recipient of the Chemical Institute of Canada Student Merit Award. Under the mentorship of Dr. Peter E. Braun, he focused his doctoral thesis on the study of myelin basic proteins for which he received his Ph.D. in biochemistry from McGill University in 1985. From 1985 to 1990, his postdoctoral training centered on studies on the synthesis and processing of glycoporin encoded by erythroleukemia cells in the Department of Cell Biology at Yale University School of Medicine within the laboratory of Dr. George Palade, a 1974 recipient of the Nobel Prize in Physiology and Medicine. Jeffrey has published over 190 peer-reviewed articles, serves on the editorial boards of Expert Opinion on Biological Therapy, Expert Review of Vaccines, and Human Vaccines, and serves on several scientific advisory boards. While at Merck Research Laboratories and Chiron Corporation, he directed studies on DNA-based vaccines, novel vaccine adjuvants, and vaccine delivery systems. While at Novartis Vaccines & Diagnostics, he served as the Global Head of External Research and was responsible for identifying and assessing new collaborative research opportunities. Since the GlaxoSmithKline Pharmaceuticals acquisition of Novartis Vaccines in 2015, he has served as the Head of Preclinical R&D US, with a major focus on developing RNA vaccines. Jeffrey has been a member of ISV since 2015, and has contributed to the society as a member of the Executive Board from 2016–2018, chair of the Audit Committee, and member of the scientific organizing committee of the 2017 annual meeting of the ISV in Paris.

2018 ISV Congress Scientific Committee

Rafi Ahmed, ISV local co-Chair
Julie Hilliard, ISV local co-Chair
Mark R. Prausnitz, ISV local co-Chair

Randy A. Albrecht, Icahn School of Medicine at Mount Sinai, USA
Davinder Gill, Hilleman Laboratories, India
Ali Harandi, University of Goeteborg, Sweden
Linda Klavinskis, King’s College London, UK
Janet McNicholl, Centers for Disease Control and Prevention, USA
Sean Tucker, Vaxart, USA
Jeffrey Ulmer, GlaxoSmithKline, USA
Anna-Lise Williamson, University of Cape Town, South Africa

Check the ISV 2018 Congress website for updates.

Research Highlights

“Towards personalized, tumour-specific, therapeutic vaccines for cancer.”
Zhuting Hu, Patrick A. Ott, and Catherine J. Wu
An informative review of recent developments and future directions for the emerging field of personalized cancer vaccines.

ISV Job Bank

If you have a position to fill, take advantage of this opportunity by posting the position at the Job Openings portal on the ISV website.
Perspectives for personalized vaccinology

Michel Klein
CSO, BravoVax Co., Ltd.

Vaccines have been one of the great successes of medicine in the past and are one of the greatest hopes of medicine in the future. However, the development of vaccines has been largely empirical and has not taken into account the heterogeneity of immune responses at both the individual and population levels. In particular, in spite of the use of novel adjuvants and new administration routes, there has been no systematic efforts to overcome immunosenescence, immunosuppression and neonatal immaturity, to minimize genetically-related unresponsiveness or to avoid the potential risk of rare adverse reactions. Furthermore, the lack of correlates of protection for numerous vaccines and against many diseases prevents a rationale approach for their improvement and design.

In the recent past, vaccination with autologous dendritic cells (DCs) loaded with tumor–associated antigens has paved the way to personalized active cancer therapy. Therapeutic DC-based vaccines can induce tumor-specific responses, but so far the clinical results have been disappointing. The only commercial cancer vaccine,sipuleucel-T (Provenge), has only a modest effect on the survival of hormone-refractory advanced cancer patients. Progress is being made to optimize these vaccines by in vitro targeting DCs with subsets-specific antibodies conjugated with appropriate tumor immunogens along with the co-administration of selected cytokines or by using pluripotent cell–derived dendritic cells engineered to express autologous tumor neoantigens. Although DCs differentiated from pluripotent stem cells could be expanded on a large scale in bioreactors, the identification of mutation–derived neoantigens and the cGMP multi-step manufacturing of DC-based vaccines will remain a labor-intensive and very costly process. Ideally, dendritic cells should be loaded with several tumor-associated antigens and/or neoantigens to induce polyclonal responses against multiple epitopes to overcome the heterogeneity of malignant cells within a solid tumor and minimize the risk of escape variants. Immunization with neoantigens using RNA vectors and perhaps tumor–derived exosomes might in the future revolutionize the field of personalized therapeutic cancer vaccines. For maximal efficacy, these vaccines will have to be administered using a “Hit–hard–and–early” schedule. Regardless, cancer vaccination will still require to be associated with other immunotherapeutic modalities such as immune check point inhibitors, chimeric antigen receptor T cells (CARs) or cytokines to overcome adaptive immune escape, tumor–related immunosuppression and the loss of tumor HLA-class I expression in order to fully exploit its potential.

The production of individualized prophylactic vaccines is industrially and economically not viable. However, system vaccinology and advances in vaccinomics now offer an opportunity to better understand mechanisms of vaccine protection, establish correlates of efficacy, and rationally design the next generations of vaccines to overcome variations in immune responses depending on age, gender, weight and immunosuppression. Coupled with immunogenetic/immunogenomic profiling, such approaches can be harnessed to identify both efficacy and safety signatures, to predict individuals at risk of serious adverse events and to tailor vaccine composition and formulations to specific populations. Vaccines have different modes of action. Live–attenuated vaccines are the most immunogenic and remain the best indicator to induce both humoral and polyclonal CD4+ and CD8+ T-cell responses in healthy adults. Dose and schedule could be tuned to address the fact that females are usually better responders than males but more prone to adverse events. In contrast, inactivated pathogens or subunit vaccines should be used in immunocompromised individuals. Needle–free and oral vaccines are the best choice for infant and young children immunization. The selection of appropriate adjuvants or combination thereof still needs further investigation and optimization to enhance vaccines immunogenicity and efficacy in the elderly and the neonates. However, the production of different vaccines tailored to different populations would represent a major industrial challenge for vaccine manufacturers. Live synthetic viral vectors devoid of toxicity and optimized RNA vaccines may be the ideal vaccines for all populations in the future.

Very large databases and machine learning approaches will be necessary to fully understand the mechanisms of vaccine protection at the individual and populations levels and how the genetic polymorphism of immune response genes control immune responsiveness. Transcriptomics and flow cytometry have been so far useful at identifying signal pathways genes and lymphocyte subsets correlating with vaccine efficacy but against a few diseases only. These correlates will certainly be useful for vaccine licensure in the future, for the identification of individuals at risk of undesirable side effects and to decide whether results from a Phase II clinical trial support the launch of an efficacy trial. However, preliminary results revealed that the mechanisms of protection against a disease seem to depend on the vaccine type used. Significantly big data information on immunogens, vectors, formulations and immunogenetics will be required before biomarkers of protection can realistically be used to design safe vaccines capable of inducing excellent immunogenicity and long–lasting protective immunity.
New publication by Dr. Frédéric Tangy, 2015 ISV Fellow and 2017 Congress Local co-Chair

Les Éditions First et l’Institut Pasteur sont heureux de vous convier à une séance dédicace du livre Les Vaccins pour les Nuls par les auteurs Frédéric Tangy et Jean-Nicolas Tournier.

Jeudi 14 décembre de 17h à 20h
à l’Institut Pasteur
— Salle des Actes —
25 rue du Docteur Roux
75015 Paris

En raison de Vigipirate, une inscription préalable est obligatoire au plus tard le lundi 11 décembre, à l’adresse :
Caroline Destais-Brochain – cdestais@efirst.com

Merci de vous munir d’une pièce d’identité lors de votre arrivée à l’Institut Pasteur.

Highlights of vaccine hesitancy in the news

“Addressing Vaccine Hesitancy”
World Health Organization, updated: 6 February 2018

“Association of moral values with vaccine hesitancy”
Avnika B. Amin, Robert A. Bednarczyk, Cara E. Ray, Kala J. Melchiori, Jesse Graham, Jeffrey R. Huntsinger, and Saad B. Omer

International Society for Vaccines
ISV now has 100 Facebook members and over 435 LinkedIn members. Join us online to take part in discussions or to find out what is happening in the society.

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/

International Society for Vaccines newsletter