Program

Vaccine Technology V

June 8 - 13, 2014

Paradisus Playa del Carmen, Mexico

Program Co-Chairs

Laura A. Palomares
UNAM, Mexico

John G. Auniņš
Janis Biologics, Inc., USA

Manon Cox
Protein Sciences Corporation, USA

Engineering Conferences International
32 Broadway, Suite 314
New York, NY 10004, USA
Phone: 1 - 212 - 514 - 6760, Fax: 1 - 212 - 514 - 6030
www.engconfintl.org – info@engconfintl.org

Paradisus Playa del Carmen La Esmeralda
5ª Av. Esq Calle 112, Col. Luis Donaldo Colosio
Playa del Carmen 77719
Mexico
Tel: + (52) 984 8773900
Fax: + (52) 984 8773939
paradisus.playadelcarmen@melia.com

Engineering Conferences International (ECI) is a not-for-profit global engineering conferences program, originally established in 1962, that provides opportunities for the exploration of problems and issues of concern to engineers and scientists from many disciplines.

Organizing Committee Members

Paula Alves, IBET, Portugal

Rick Bright, HHS/BARDA, USA

Leda Castilho, Federal Univ. of Rio de Janeiro, Brazil

Anne DeGroot, EpiVax, USA

Mark Feinberg, Merck, USA

Bruce Green, Pfizer, USA

Kathrin Jansen, Ph.D, Pfizer, USA

Amine Kamen, National Research Council, Canada

David Kaslow, PATH, USA

Charles Lutsch, Shantha Biotechnics Ltd (A Sanofi Company)

Christian Mandl, Novartis Vaccines & Diagnostics, USA

Robert Nordgren, Merial

Alain Pralong, GSK, Belgium

Udo Reichl, Max Planck Institute for Dynamics of Complex Technical Systems, Germany

Guus Rimmelzwaan, Erasmus Medical Ctr, NL

Rebecca Sheets, NIH, NIAID, USA

George Siber, Genocea, USA

Ian Tarpey, MSD Animal Health

Michael Washabaugh, Medimmune, USA

David Weiner, University of Pennsylvania, USA

The conference chairs would like to acknowledge the following people for the logistical support they provided in planning the conference:

Ana Ruth Pastor

Karin Levy

Larisa Campos

Instituto de Biotecnología- UNAM

Conference Sponsors

AERAS

Astrazeneca

BIA Separations

Bill & Melinda Gates Foundation

Biologics Consulting Group, Inc

EMD Millipore

Elsevier

EpiVax

Genocea Biosciences, Inc.

Inovio

Life Technologies

Laboratorios Liomont S.A. de C.V.

Merck

NanoImaging Services, Inc.

Novartis

Pall Life Sciences

PBS Biotech

Pfizer

Protein Sciences Corporation

Takeda

Sunday, June 8, 2014

16:00 – 19:00	Conference check-in (Conference Center Foyer)
18:00 – 18:30	Welcome Conference Chairs: John Aunins, Manon Cox, and Laura A. Palomares ECI Technical Liaison: John Aunins
18:30 – 19:30	**KEYNOTE I** Albertus Osterhaus, Erasmus University, Netherlands Vaccination: The silent victory
19:30 – 21:00	Welcome Reception and Dinner (Poolside)

Notes

- Technical and Poster Sessions will be held in the Cypress Ballroom.
- Lunch on Monday will be in The Grill and lunch on Wednesday will be in The Market.
- Breakfasts will be in the Naos Restaurant.
- Sign-up sheets will be available for the Dine-Around dinners at the hotel on Monday, Tuesday, and Wednesday.
- Audiotaping, videotaping and photography of presentations are prohibited.
- Speakers – Please leave at least 5 minutes for questions and discussion.
- Please do not smoke at any conference functions.
- Turn your cellular telephones to vibrate or off during technical sessions.
- Be sure to check your contact information on the Participant List in this program and make any corrections to your name/contact information online. A corrected copy will be sent to all participants after the conference.

Monday, June 9, 2014

07:00 – 08:30	Breakfast buffet
08:30 – 10:30	**Session 1: Break through developments in vaccinology** Session Chairs: Clotilde Thiriart, Sanofi, USA Ulrich von Andrian, Harvard University, USA
08:30 – 08:54	Behazine Combadière (INSERM, France) Cutaneous routes of vaccination
08:54 – 09:18	Bill Warren (Vaxdesign, USA) It is all about you… the biomimetic human
09:18 – 09:42	Kei Kishimoto (Selecta Biosciences, USA) Synthetic nanoparticle vaccines for the induction of antigen-specific immunological tolerance
09:42 – 10:06	Matteo Iannacone (San Raffaele Scientific Institute, Milan, Italy): Bisphosphonates target B cells to enhance humoral immune responses
10:06 – 10:30	Ulrich von Andrian (Harvard, USA) Mucosal immunization with conjugates of inactivated *Chlamydia Trachomatis* and adjuvanted nanoparticles generates two discrete waves of memory T cells conferring long-lived immunity
10:30 – 11:00	Coffee break (*sponsored by AERAS*)
11:00 – 13:00	**Session 2: Issues and case studies in process development** Session Chairs: Udo Reichl, Max Planck Institute, Germany Charles Lutsch, Shantha Biologics, India
11:00 – 11:24	Reiner Luttmann (Hamburg University of Applied Sciences, Germany) Quasi-continuous production of potential malaria vaccines with optimal QbD compliant conditions
11:24 – 11:48	Barry Buckland (Protein Sciences, USA) Development and scale-up of an insect cell culture based process for making Flublok, the first FDA licensed recombinant influenza vaccine
11:48 – 12:12	Anne Marie de Villiers (University College London, UK) Impact of high cell density processes on virus purification
12:12 – 12:36	Francesc Gòdia (Universitat Autonoma de Barcelona, Spain) Gag VLP production by HEK 293 cells is improved by extended gene expression
12:36 – 13:00	Aaron Noyes (Pfizer R&D Global Biologics/ University College London, UK) Laboratory scale platforms to accelerate the development of particle conditioning steps for prokaryotically expressed polysaccharide vaccines
13:00 – 14:30	Lunch (The Grill)
14:30 – 16:00	*Ad hoc* sessions, relaxation, recreation

Monday, June 9, 2014 (continued)

14:30 – 15:30	*Optional workshop* **Immunoinformatics Workshop: Vaccine Design and Evaluation Using the iVAX Toolkit** Coordinated by EpiVax and the Institute for Immunology and Informatics at URI
16:00 – 18:00	**Session 3: Formulating and delivering vaccines** Session Chairs: Mark Kendall, University of Queensland, Australia Nathalie Garçon, GSK, USA
16:00 – 16:24	David Muller (AIBN, University of Queensland, Australia) Targeted delivery of candidate dengue virus subunit vaccine to the skin using the Nanopatch
16:24 – 16:48	Ryan M. Kramer (Infectious Disease Research Institute, USA) Development of a lyophilized nanoemulsion adjuvanted vaccine against tuberculosis
16:48 – 17:12	Bobby Singh (Corium Technology, USA) MICROCOR®: An integrated solution to address unmet needs in vaccine delivery
17:12 – 17:36	William J. Smith (Merck, USA) Controlling routine manufacturing and shipping stress-induced physical instability of a complex vaccine drug product
17:36 – 18:00	Amardeep S. Bhalla (Pfizer, USA) Challenges in formulation and process development of multicomponent vaccines
18:00 – 20:00	Dine around at the hotel restaurants
20:00 – 22:00	**POSTER SESSION and Social Hour** (*sponsored by Pall Life Sciences)* (Authors of even-numbered posters are asked to stay by their presentations) Poster Chairs: Cuitláhuac Chávez-Peña, Protein Sciences Corporation, USA Héla Kallel, Pasteur Institute, Tunisia Ruth Pastor, UNAM, Mexico

Tuesday, June 10, 2014

07:00 – 08:30	Breakfast buffet
08:30 – 10:30	**Session 4: Therapeutic Vaccines** Session Chairs: Margaret Liu, Karolinska Institute, Sweden John Aunins, Janis Biologics, USA
08:30 – 08:54	John Hennessey (NovaDigm Therapeutics, USA) Preclinical and clinical development of a recombinant glycoprotein vaccine (NDV-3) for treatment of candidal infections in healthy adults
08:54 – 09:18	Matti Salberg, (Karolinska Institute, Sweden) HCV, HBV, and HDV vaccines: Which ones do we need?
09:18 – 09:42	Matthias von Hereth, (La Jolla Institute for Allergy and Immunology, USA) Vaccination to induce regulatory cells and tolerance - a clinical possibility?
10:09 – 10:30	Adolfo Castillo-Vitlloch (Center of Molecular Immunology, Cuba) Early stage development of cancer vaccine based on HER-1 extracellular domain
10:30 – 11:00	Coffee break (*sponsored by EMD Millipore*)
11:00 – 12:00	**KEYNOTE II** Robin Robinson, BARDA, USA, BARDA approaches to vaccine development, manufacturing and stockpiling
12:30 – 18:00	Excursion to Tulum Boxed lunches to be provided
18:30 – 20:30	Dine around at the hotel restaurants
20:30 – 22:00	**POSTER SESSION and Social Hour** (Authors of odd-numbered posters are asked to stay by their presentations) Poster Chairs: Cuitláhuac Chávez-Peña, Protein Sciences Corporation, USA Héla Kallel, Pasteur Institute, Tunisia Ruth Pastor, UNAM, Mexico

Wednesday, June 11, 2014

07:00 – 08:30	Breakfast buffet
08:30 – 10:30	**Session 5: Veterinary Vaccines** Session Chairs: Guus Rimmelzwaan, Erasmus University, Netherlands Robert Nordgren, Merial, USA
08:30 – 08:54	Bibiana Law (University of Arizona, USA) Making food safer: Campylobacter prevention and control measures
08:54 – 09:18	Bryan Bird (CDC, USA) Breaking the chain: one-health approaches to preventing rift valley fever epidemics
09:10 – 09:42	Andres H. Gutierrez (University of Rhode Island, USA) One health genome-derived epitope-driven vaccine development for public health and global food security
09:42 – 10:06	Colin Russell (University of Cambridge, UK) Improving pandemic influenza risk assessment
10:06 – 10:30	David Suarez (USDA, USA) Control of avian influenza viruses: Role of recombinant viral vectored vaccines
10:30 – 11:00	Coffee break (*sponsored by Merck)*
11:00 – 13:00	**Session 6: New challenges, new technologies in vaccine development** Session Chairs: Fred Cassels, NIH, USA Christian Mandl, Novartis, USA
11:00 – 11:25	Ted Ross, (VGTIFL, USA) Computationally optimized broadly reactive antigens (COBRA): Developing broadly reactive vaccines against emerging and seasonal influenza.
11:25 – 11:50	Brandon DeKosky, (University of Texas, USA) High-throughput Single B-cell sequencing for molecular analysis of adaptive immunity and vaccine responses
11:50 – 12:15	Natalie Connors (AIBN, University of Queensland, Australia) Computational design for large antigen display on a virus-like particle
12:15 – 12:40	Jean-Luc Bodmer, (Genocea Biosciences, USA) Does ATLAS have broad shoulders? Identifying and developing tractable vaccine antigens for seemingly intractable diseases
12:40 – 13:00	Suh-Chin Wu (Institute of Biotechnology, National Tsing Hua University, Taiwan) Glycan masking of hemagglutinin elicits broadly neutralizing antibodies against H5N1 Avian influenza viruses
13:00 – 14:00	Lunch (The Market)
14:00 – 16:00	*Ad hoc* sessions, relaxation, recreation

Wednesday, June 11, 2014 (continued)

16:00 – 17:00	**Session 6: New challenges, new technologies in vaccine development** (continued) Session Chairs: Fred Cassels, NIH, USA Christian Mandl, Novartis, USA
16:00 – 16:20	Lidija Urbas (BIA Separations, Slovenia) Purification, in-process and final control of adenoviruses using monolithic columns
16:20 – 16:40	Tarik Khan (ETH Zürich, Switzerland) Novel experimental and bioinformatic methods for accurate characterization of humoral response landscapes based on next-generation sequencing
16:40 – 17:00	Bolyn Hubby (Synthetic Genomics Vaccines, USA) Synthetic genomics to address emerging threats
17:00 - 18:00	**KEYNOTE III** Myron Levine (University of Maryland, USA) Environmental enteropathy impacting oral vaccine performance in developing countries
18:00 – 20:00	Dine around at the hotel restaurants
20:00 – 22:00	**POSTER SESSION and Social Hour** (*sponsored by Takeda)* (Authors of even-numbered posters are asked to stay by their presentations) Poster Chairs: Cuitláhuac Chávez-Peña, Protein Sciences Corporation, USA Héla Kallel, Pasteur Institute, Tunisia Ruth Pastor, UNAM, Mexico

Thursday, June 12, 2014

07:00 – 08:30	Breakfast buffet
08:30 - 10:30	**Session 7: Vaccine characterization** Session Chairs: Qinjian Zhao, Xiamen University, China John Hennessey, NovaDigm Therapeutics, USA
08:30 – 08:54	David Volkin (University of Kansas, USA) Characterizing vaccines as well-defined pharmaceutical dosage forms: Challenges and opportunities.
08:54 – 09:18	Bridget Carragher (Nanoimaging Services, USA) Structural characterization of vaccines using TEM
09:10 – 09:42	Richard Schwartz (NIH, USA) Characterization and lot release of a Phase I/II trivalent enveloped virus-like particle vaccine
09:42 – 10:06	Neil Ravenscroft (University of Cape Town, South Africa) Using physicochemical methods to facilitate the development and licensure of glycoconjugate vaccines
10:06 – 10:30	Linda Lua (The University of Queensland, Australia) Characterization of molecularly-designed modular vaccines
10:30 – 11:00	Coffee break (*sponsored by Novartis*)
11:00 - 13:00	**Session 8: Going to the market: Getting Approval and Beyond** Session Chairs: Rebecca Sheets, USA Manon Cox, Protein Sciences Corporation, USA
11:00 – 11:24	Mireli Fino (Protein Sciences, USA) Flublok - Moving forward after approval
11:24 – 11:48	Parag Nagarkar (Shantha Biotechnics, India) Post-approval process changes and challenges for vaccines
11:48 – 12:12	Michael Washabaugh (MedImmune, USA) Applying quality by design to vaccines and viral biopharmaceuticals: Highlights, lessons learned and observations involving a seasonal vaccine
12:12 – 12:36	Katherine Owen (Bill & Melinda Gates Foundation, USA) Process, analytical, and formulation development and manufacturing challenges in vaccines for global health
12:36 – 13:00	Ruth Velázquez-Fernández (Birmex, Mexico) Technology transference for partial influenza vaccine production
13:00 – 15:00	**POSTER SESSION –** *With Grazing Lunch* (Authors of odd-numbered posters are asked to stay by their presentations) Poster Chairs: Cuitláhuac Chávez-Peña, Protein Sciences Corporation, USA Héla Kallel, Pasteur Institute, Tunisia Ruth Pastor, UNAM, Mexico *(Please remove your posters after this poster session)*

Thursday, June 12, 2014 (continued)

16:30 – 18:30	**Session 9: Unsolved challenges in key regions** Session Chairs: Amine Kamen, McGill University, Canada Mauricio Rodriguez, BIRMEX, Mexico
16:30 – 17:00	Li Xiuling (National Vaccine & Serum Institute, China) The development of enterovirus 71 vaccine
17:00 – 17:30	Miriam Tendler (Oswaldo Cruz Institute, Brazil) Development of a vaccine against schistosomiasis based on the recombinant fatty acid binding protein sm14: controlling transmission of a disease of poverty
17:30 – 18:00	Fred Cassels (NIAID, NIH, USA) Development and testing of enteric and hepatic vaccines for global health
18:00 – 18:30	Amine Kamen (McGill University, Canada) Large-scale production of monoclonal antibodies for post-exposure treatment of Ebola virus infection
18:30 – 19:30	**CLOSING KEYNOTE** Penny Heaton, (Bill & Melinda Gates Foundation, USA) Reducing childhood mortality through vaccination: Progress, challenges, and the future
20:00 – 22:00	Conference Banquet (Gabi Club) Announcement of Liomont Best Poster Awards
22:00 – 23:00	Social hour

Friday, June 13, 2014

07:00 – 10:00 Breakfast followed by departures

Vaccine Technology V
Poster Presentations

1. **Improved rotavirus-like particle production in Saccharomyces cerevisiae by improving the feeding strategy in fed-batch cultures**
   Martha Alicia Contreras, Instituto de Biotecnología UNAM, Mexico

2. **Development of immunogenic virus-like particles as a rabies vaccine candidate**
   Diego Fontana, Universidad Nacional del Litoral, Argentina

3. **Characterization and neutralization studies of a monoclonal antibody against rabies virus glycoprotein**
   Claudio Prieto, Universidad Nacional del Litoral, Argentina

4. **Parameters for MDBK cell growth on microcarriers**
   Ronaldo Mendonça, Instituto Butantan, Brazil

5. **Universal H1n1 influenza vaccine development: identification of consensus class ii hemagglutinin and neuraminidase epitopes derived from strains circulating between 1980 and 2011**
   Frances Terry, EpiVax, Inc., USA

6. **Synthetic DNA immunoadjuvant IL-33 or CCR10 Chemokine adjuvants drive invivo CD8 T cell and antibody responses that are protective in vivo**
   David Weiner, University of Pennsylvania, USA

7. **Formulation development for a new virosome-based flu vaccine: paving the way towards a temperature resistant liquid product.**
   Francesco Doro, Crucell Hollan BV, Netherlands

8. **Lessons learned for formulation development for live virus vaccines**
   Lynne A. Isopi, Merck & Co, USA

9. **Formulation development and stabilization of a trivalent equine encephalitis virus virus-like particle vaccine candidate**
   Lisa A. Kueltzo, Vaccine Production Program Laboratory, VRC/NIAID/NIH, USA

10. **Nanopatches: For the eradication of poliovirus**
    David Muller, AIBN, University of Queensland, Australia

11. **Development of chemically-defined MDCK and vero culture media for cell-based vaccine development and manufacturing**
    Jenny Bang, Irvine Scientific, USA

12. **Preserving the structural integrity of virus like particles**
    Cuitláhuac Chavez-Peña, Protein Sciences Corporation, USA

13. **Disposable hollow fiber bioreactors for high cell density virus production in continuous mode**
    Yvonne Genzel, Max Planck Institute for Dynamic of Complex Technical Systems, Germany

14. **Case study of influenza H7N9 manufacturing process development in Taiwan**
    Alan Yung-Chih Hu, National Health Research Institutes, Taiwan

15. **Manufacturing challenges of adding a preservative containing presentation to a commercial vaccine**
    Li Li, Pfizer, USA

16. **High yield expression of leptospirosis vaccine candidate LigA in bioreactor using experimental design**
    Marco Medeiros, Oswaldo Cruz Foundation/Bio-Manguinhos, Brazil

17. **Tweaking insect cell platforms for the production of multivalent VLPs: Metabolic profiling, pathway analysis and bioprocess optimization**
    Francisca Monteiro, iBET/ITQB-UNL, Portugal

18. **Preparation of pure, high titer, pseudoinfectious flavivirus particles by hollow fiber tangential flow filtration and anion exchange chromatography**
    Sophia T. Mundle, Sanofi Pasteur, USA

19. **Evaluation of chromatographic stationary phase for capture of a HIV-1-derived lentiviral vector**
    Sara M. Nilsson, University College London, United Kingdom

20. **A tiered methodology to selecting a microcarrier substrate for bioprocess development**
    Roberto I. Ortiz, Merck & Co, USA

21. **Enveloped VLPs process development**
    Hugo Soares, IBET, Portugal

22. **Development of a phase I/II transient gene expression platform process for production of an enveloped virus-like particle vaccine**
    Richard M. Schwartz, Vaccine Production Program Laboratory, VRC/NIAID/NIH, USA

23. **Development of a robust, defined, animal-free virus production medium optimized for microcarrier culture**
    Steve Pettit, InVitria, USA

24. **A flow cytometry-based assay for quantification of infectious influenza and vaccinia virions**
    Felipe Tapia, Max Planck Institute for Dynamic of Complex Technical Systems, Germany

25. **The comparison of downstream purification process of cell derived influenza vaccine production**
    Yu-Fen Tseng, National Health Research Institutes, Taiwan

26. **Assessment of cultivation strategies for the production of Modified Vaccinia Ankara (MVA) at high cell-densities**
    Daniel Vázquez, Max Planck Institute for Dynamic of Complex Technical Systems, Germany

27. **In silico prediction of leishmania braziliensis T cell epitope candidates: Towards the development of epitope-based vaccines with protective immunity against cutaneous leishmaniasis**
    Vanessa Adaui, Universidad Peruana Cayetano Heredia, Peru

28. **Targeting of rotavirus antigen to skin dendritic cells induces protection against the infection in mice**
Oscar Badillo-Godínez, Universidad Autonoma Del Estado De Morelos, Mexico

29. **Influenza reverse genetics system for use in production platforms of all species**
Bahareh Ramezanpour, Erasmus MC, Netherlands

30. **Manufacture and needle-free intradermal delivery of antibiotic-free NTC RNA-OUT LAMP plasmids**
Aaron E. Carnes, Nature Technology Corporation, USA

31. **Rapid assay for expression and conformational screening of engineered Influenza hemagglutinins for a universal vaccine**
Guadalupe Cortes-Garcia, Sanofi Pasteur, USA

32. **Biological and immunological characterizations of the receptor binding domain of C. difficile toxin A**
Pele Chong, National Health Research Institutes, Taiwan

33. **Improvement of yellow fever virus production in stirred-tank bioreactors using serum-free medium**
Diogo A. Mattos, Bio-Manguinhos/Fiocruz, Brazil

34. **Expression, purification and immunogenicity evaluation of hepatitis A virus recombinant proteins**
Haroldo Cid da Silva Junior, Fundação Oswaldo Cruz / Bio-Manguinhos, Brazil

35. **Continuous influenza vaccine production**
Yvonne Genzel, Max Planck Institute for Dynamic of Complex Technical Systems, Germany

36. **New technologies for detection of viral adventitious agents: challenges and opportunities in vaccine development**
Lucy Gisonni-Lex, Sanofi Pasteur, Canada

37. **Effect of synonymous codon usage bias and co-expression of folding assistant factors on the production of rabies virus glycoprotein in the methylotrophic yeast Pichia pastoris**
Hela Kallel, Institut Pasteur de Tunis, Tunisia

38. **Development of a novel hepatitis E virus vaccine using adeno associated virus : process development and preliminary immunogenicity studies in mice**
Hela Kallel, Institut Pasteur de Tunis, Tunisia

39. **A dose-sparing strategy for pandemic influenza A H7N9 preparedness: One-shot insect cell-derived low-dose H7 virus-like particle preparation protects mice against lethal challenge**
Miriam Klausberger, Vienna Institute of BioTechnology, Austria

40. **Impact of MDCK cell line adaptation to suspension growth on proteome level and virus replication dynamics**
Sabine Kluge, Otto-von-Guericke university, Germany

41. **MVA-based influenza vaccines: bringing these viral vectors from bench to bedside**
Joost Kreijtz, Virosciencelab, Netherlands

42. **Rapid response vaccine technology for the influenza A/H7N9 virus with pandemic potential**
Joost Kreijtz, Virosciencelab, Netherlands

43. **Virus production with the integrity® ICELLIS® single-use bioreactor**
Matthew Kremer, Pall Life Sciences, USA

44. **Vero/CHOK1, a novel mixture of cell lines that is optimal for the rescue of influenza a vaccine seeds**
Isabelle Legastelois, Sanofi Pasteur, France

45. **Characterization and immunogenicity in mice of recombinant influenza haemagglutinins produced in leishmania tarentolae**
Isabelle Legastelois, Sanofi Pasteur, France

46. **Novel ETEC vaccine by intranasal immunization**
Yolanda López Vidal, Universidad Nacional Autónoma De México, Mexico

47. **Microbially-produced capsomere: Extending the potential of broadly cross-protecting influenza antigen**
Linda Lua, The University of Queensland, Australia

48. **Monolithic columns for the downstream processing of gene theraphy vectors and vaccines**
Daniela Marc, BIA Separations, Slovenia

49. **Insect cell derived vaccines: Addressing the issue of glycosylation**
Dieter Palmberger, Vienna Institute of BioTechnology, Austria

50. **A viral vector for RNA immunization against rabies. Synthesis, titration and protection studies.**
Carlos Pereira, Instituto Butantan, Brazil

51. **Analysis of the humoral immune response in mice of an inactivated yellow fever 17DD vaccine cultivated in microcarrier-based vero cell cultures**
Diogo Mattos, Bio-Manguinhos/Fiocruz, Brazil

52. **Development of a candidate vaccine for hepatitis C virus**
Hugo Soares, IBET, Portugal

53. **Virus purification via a pseudo-affinity membrane adsorber**
Udo Reichl, Max Planck Institute for Dynamic of Complex Technical Systems, Germany

54. **Vaccine design and evaluation using the iVAX toolkit**
Frances Terry, Brown University School of Public Health, USA

55. **CIMac analytical columns for in-process control of adenoviruses**
Lidija Urbas, BIA Separations, Slovenia

56. **Different immunity elicited by recombinant H5N1 hemagglutinin glycoproteins containing pauci-mannose, high-mannose, or complex type N-glycans**
Suh-Chin Wu, National Tsing Hua University, Taiwan

57. **The two-faced T cell epitope: Judicious antigen selection for optimal vaccine efficacy**
Anne S. De Groot, EpiVax, Inc., USA

58. **One health genome-derived epitope-driven vaccine development for public health and global food security**
Andres H. Gutierrez, University of Rhode Island, USA

59. **Catching a moving target: Universal influenza virus vaccine constructs based on the conserved hemagglutinin stalk domain**
Florian Krammer, Icahn School of Medicine at Mount Sinai, USA

60. **Assessment of the impact of manufacturing changes during the product development on DEC-Her1 physical-chemical and biological characteristics**
Adolfo Castillo Vitlloch, Center of Molecular Immunology, Cuba

61. **CIMAvax-EGF®: Scientific and technological challenges for cancer vaccine manufacturing**
Gryssell Rodriguez, Centro de Inmunologia Molecular, Cuba

62. **Characterization of the Anti-Idiotipic vaccine formulation Racotumumab: Interaction forces with aluminium hydroxide adjuvant and immunogenicity in chikens modifying adsorption and the mAb/adjuvant ratio**
Julio Felipe Santo Tomás, Center of Molecular Immunology, Cuba

63. **Anti-idiotypic monoclonal antibody racotumomab: Impact of glycosylation in biological activity of vaxira vaccine**
Julio F. Santo Tomás, Center of Molecular Immunology, Cuba

64. **Safety and immunogenicity of inactivated poliovirus vaccine based on Sabin-strains with and without aluminium hydroxide adjuvant: clinical trials in adults and infants**
Wilfried A.M. Bakker, Intravacc, Netherlands

65. **Immune history shapes specificity of pandemic h1n1 influenza antibody responses**
Donald M. Carter, Vaccine and Gene Therapy Institute of Florida, USA

66. **Adjuvant manufacturing technology transfer to developing countries**
Christopher B. Fox, IDRI, USA

67. **Pharmaceuticals and security: The role of cross-sectoral collaborations in strengthening global health security**
Anne Roemer-Mahler, University of Sussex, United Kingdom

68. **Sequential seasonal H1N1 influenza virus infections protect ferrets against novel 2009 H1N1 influenza. implications for vaccine design**
Donald M. Carter, Vaccine and Gene Therapy Institute of Florida, USA

69. **Effect of metal catalyzed oxidation in recombinant viral protein assemblies**
Ricardo M. Castro-Acosta, IBT-UNAM, Mexico

70. **Brazilian meningococcal C conjugate vaccine: Scaling up studies**
Renata Chagas Bastos, Bio-Manguinhos/Fiocruz, Brazil

71. **An H7N1 influenza virus vaccine induces broadly reactive antibody responses against H7N9 in humans**
Florian Krammer, Icahn School of Medicine at Mount Sinai, USA

72. **Characterization and quantitative analysis of enterovirus-like particle**
Linda Lua, The University of Queensland, Australia

73. **Development of a universal antibody against multiple strains of influenza virus**
Aziza Manceur, National Research Council, Canada

74. **TEM for characterization of vaccines: Proteins to adjuvants**
Clint Potter, NanoImaging Services, Inc., USA

75. **Conservation of HIV-1 T cell epitopes across time and clades: Validation of immunogenic HLA-A2 and -A3 epitopes selected for the GAIA HIV vaccine**
Oumar Kone, University of Sciences, Technique of Technologies of Bamako, Mali