

Preliminary Program
(February 6, 2024)

Vaccine Technology IX

May 19-24, 2024
Los Cabos, Mexico

Conference Chairs:

Linda Lua
The University of Queensland, Australia

Charles Lutsch
Sanofi-Vaccines, France

Francesc Gòdia
Universitat Autònoma de Barcelona
(UAB), Spain

Tara Tagmyer
PATH, USA



Engineering Conferences International

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Sunday, May 19, 2024

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|---------------|--|
| 15:00 – 17:30 | Conference check-in |
| 17:30 – 18:00 | Opening remarks |
| 18:00 – 19:00 | <u>KEYNOTE</u>
The need for manufacturability speed
Michael Anyadiegwu, CEPI, UK |
| 19:00 – 21:30 | Reception and Dinner |

Monday, May 20, 2024

07:00 – 08:30 Breakfast Buffet

Session 1: Novel Expression Systems and Innovative Platforms

Chairs: Florian Krammer, Icahn School of Medicine at Mount Sinai, USA
Tania Chilima, Pereira Chilima Biotech, Switzerland

08:30 – 08:55

Lead Speaker

A next generation of COVID-19 vaccine based on the Newcastle disease virus (NDV) vector

Weina Sun, Department of Microbiology at the Icahn School of Medicine, USA

08:55 – 09:15

A Comprehensive Post-COVID-19 Look at Different Vaccine Platforms: Characteristics, Performance, and Economic Considerations

Florian Krammer, Icahn School of Medicine at Mount Sinai, USA
Tania Chilima, Pereira Chilima Biotech, Switzerland

09:15 – 09:30

C1 gene expression platform: Rapid, High Yield and Lower Cost Way to Develop & Manufacture Biologics

Mark Emalfarb, CEO of Dyadic International, Inc.

09:30 – 09:45

Development of a Nanoparticle-Based Nasal Vaccine against SARS-CoV-2

Jorge Kalil, Incor, HCFM -Universidade de São PauloSP, Brasil

09:45 – 10:00

Rapid screening and scaled manufacture of immunogenic virus-like particles in a tobacco BY-2 cell-free protein synthesis system

Jorge Armero Gimenez, LenioBio, Germany

10:00 – 11:00

Coffee Break

11:00 – 12:00

KEYNOTE

Past, present, and future of vaccine technologies

David Kaslow, US FDA Office of Vaccines Research and Review

12:00 – 13:30

Lunch

13:30 – 15:00

Workshop: A blueprint for accelerating vaccine development and deployment

Chairs: Laura Palomares, UNAM, Mexico

Michael L. King, Scientific Advisory Committee of CEPI, USA

You are developing a new vaccine. Preclinical data looks promising, and a decision is needed to invest your limited resources best. Should you proceed to clinical trials as soon as possible? What are the requirements to proceed to the first-in-human trial? What are the minimum CMC, quality, and analytical requirements to proceed to the different phases of clinical evaluation? Which are the different scenarios determining the vaccine development blueprint? Is your vaccine for emergency/seasonal/routine application? What economic, regulatory, and public health aspects determine vaccine development and deployment? These and other topics related to creating a vaccine development and deployment blueprint will be discussed.

15:00 – 15:30

Coffee Break

Monday, May 20, 2024 (continued)

Session 2 – Vaccine Manufacturing

Chairs: Stefanie Frank, University College London, Department of Biochemical Engineering, UK
Jason He, WuXi Biologics, USA

- 15:30 – 16:00 **Lead Speaker**
Applying intensification and process integration to accelerate development and scale-up of vaccine production
Mathias Garny, Univercells Technology, Belgium
- 16:00 – 16:15 **Continuous production of Influenza VLPs using IC-BEVS: a multi-stage bioreactor approach**
Ricardo Correia, iBET, Portugal
- 16:15 – 16:30 **Intensification of Adenovirus manufacturing by developing a high cell density perfusion process**
Alena Roßkamp, Sartorius Stedim Biotech GmbH, Germany
- 16:30 – 16:45 **Accelerating recombinant protein vaccine development and manufacturing preparation of Disease X**
Tshering Sherpa, WuXi Biologics, USA
- 16:45 – 17:00 **Optimization and scale up of suspension Vero cell culture technology towards industrial applications in cost-effective production of viral vaccines and therapeutic viruses**
Chun Fang Shen, National Research Council of Canada, Canada
- 17:00 – 18:30 Break / Networking
- 18:30 – 20:00 Dinner
- 20:00 – 22:00 **Poster session 1 (Odd numbers)**
Chairs:
Laura Cervera Gracia, Universitat Autònoma de Barcelona, Spain
António Roldão, iBET, Portugal
Diego Fontana, Laboratorio de Desarrollo Biotecnológico, Facultad de Bioquímica y Ciencias Biológicas, Argentina

Tuesday, May 21, 2024

07:00 – 08:30 Breakfast Buffet

Session 3: Nucleic Acid-based Vaccines

Chairs: Shobha Vasudevan, Harvard University, USA
Sudha Chivukula, Sanofi, USA

08:30 – 09:00 **Lead Speaker**
Empowering Vaccine Efficacy and Distribution: Harnessing Machine Learning for Structural Optimization and Advanced Formulations to Enhance Accessibility
Jason Zhang, Zipcode Bio, USA

09:00 – 09:20 **Tackling mRNA Vaccine Manufacturing Optimization From Vaccine Production to Its Purification**
Sara Sousa Rosa, Department of Biochemical Engineering, University College London, UK

09:20 – 09:40 **Genetic engineering of influenza A virus defective interfering particles towards improved antiviral efficacy and potential use as a live vaccine**
Tanya Dogra, Max Planck Institute for Dynamics of Complex Technical Systems, Germany

09:40 – 10:00 **Integrated platform for the rapid development of Thermostable VLP and CircRNA VLP vaccines**
Prabuddha Kundu, Premas Biotech, India

10:00 – 10:30 Coffee Break

10:30 – 12:00 **Workshop: Advanced training of vaccine manufacturing workforce for sustainable pandemic preparedness**
Chair: Amine Kamen, McGill University, Canada

For better pandemic preparedness, governmental authorities and international organizations are heavily investing in building local capacities for vaccine and biomedicines manufacturing. Training of work force remains a key success factor for the sustainable operations of these capacities and their effectiveness for rapid response to emerging or re-emerging infectious diseases.

Highly qualified personnel in biomanufacturing are needed globally, therefore concerted efforts should be deployed to address these needs.

This workshop invites for discussions of recent training initiatives deployed by different organizations in US, Canada, and Europe through academic and not-for profit organizations, as well as WHO initiatives. Importantly, recent initiatives in Africa, exemplified by the human capital development strategy at “Institut Pasteur de Dakar” will be presented.

The goal of the workshop, beyond sharing good practices and supporting material, is to promote collaborative efforts in creating value for the effective training of a new generation of vaccine manufacturing workforce building on integration of all training models and platforms.

- Introduction: Amine Kamen

Tuesday, May 21, 2024 (continued)

- African Initiative: Senegal example of building capacity and developing human capital to meet the needs of African countries, Amadou Alpha Sall, General, Institut Pasteur of Dakar, SenegalUS perspective with the National Institute for Innovation in Manufacturing Biopharmaceuticals (NIIMBL), Kelvin Lee, NIIMBL, USA
- WHO academy and the NVI initiative in Asia, Alice (Eunju) Lee, IVI International, Korea
- Vaccine work force training in Mexico, Laura Palomares, UNAM, Mexico

Short presentations from each organization (10 min) followed by questions and an open floor for discussion (30 minutes)

12:00 – 13:30

Lunch

Session 4: One Health

Chairs: Diego Fontana, Laboratorio de Desarrollo Biotecnológico, Facultad de Bioquímica y Ciencias Biológicas, Universidad Nacional del Litoral; CONICET, Argentina
Abby Patterson, Boehringer-Ingelheim, USA

13:30 – 14:00

Lead Speaker

The Role of Vaccines in Controlling Emerging Diseases

Abby Patterson, Boehringer-Ingelheim, USA

14:00 – 14:15

Enhancing purification of Adenovirus-like particles (Addomer) for snakebite therapy

Raquel Arinto-Garcia, iBET, ITQB NOVA, Portugal

14:15 – 14:30

Process optimization for recombinant Marburg Virus Glycoprotein production using Drosophila S2 Cells

Sven Göbel, Max-Planck Institute; John A. Burns School of Medicine, University of Hawaii at Manoa, USA

14:30 – 14:45

T-cell immunogenicity of an MVA-based vaccine candidate against Middle East Respiratory Syndrome in humans

Leonie Mayer, University Medical Center Hamburg Eppendorf, Germany

14:45 – 15:00

Development of a vaccine candidate against dengue and Zika viruses by presenting a mimotope on the capsid of adeno-associated virus serotype 8

Arturo Liñan, Instituto de Biotecnología, UNAM, Mexico

15:00 – 22:00

Activities

Dinner at a hotel restaurant of your choice

Wednesday, May 22, 2024

07:00 – 08:30 Breakfast

Session 5: Analytical Technology and Vaccine analytics

Chairs: Isabelle Knott, GlaxoSmithKline, Belgium

Laura Cervera Gracia, Universitat Autònoma de Barcelona, Spain

08:30 – 09:00

Lead Speaker

Analytical Characterization in an Era of Precision Vaccinology

Julia O'Neill, Direxa Consulting LLC, USA

09:00 – 09:15

Cytokine secretion as fast in-process control for live virus potency

Johanna Bacher, acib, University of Natural Resources and Life Sciences, Austria

09:15 – 09:30

More adenovirus, more quickly & better quality

Shawkat Hussain, Jenner Institute, UK

09:30 – 09:45

A rationale design of a pneumococcal multi-epitope vaccine: from immunobioinformatics to bench-scale

Victor Alves, University of Sao Paulo, Butantan Institute, Brasil

09:45 – 10:00

Strengthening product viral safety while streamlining the testing package: Sanofi vaccine development and implementation of high-throughput sequencing for adventitious virus detection

Carine Logvinoff, Sanofi, France

10:00 – 11:00

Coffee Break

11:00 – 12:00

KEYNOTE

Animal, Human and Environmental Health, they are all connected

Albert Osterhaus, University of Veterinary Medicine Hannover, Germany

12:00 – 13:30

Lunch

13:30 – 15:00

Workshop

Bringing Vaccines to the Market – this is how we do it.

Chair: Manon Cox, NextWaveBio, USA

Taking a vaccine candidate from idea through to commercialization is quite a journey. This interactive workshop features five innovators involved in various stage of vaccine and related analytical tool development who will present their product development plans (and challenges) in approximately 5-7 minutes. Each presentation is followed by a Q&A session of 8-10 minutes, where our panel members each with unique experience in vaccine development will challenge and provide valuable feedback to the presented scenarios from vaccine development to supporting business model. We encourage participants to provide feedback and/or ask questions as well!

Our innovators presenting in this session are:

Axel Lehrer – Professor Hawaii University with a dream to develop a vaccine. The vaccine candidate is at the preclinical stage.

- Peter Leonardi – CEO OmniCyte, a start-up with a technology platform also at the preclinical stage.
- Garry Morefield – President Vaxform, a start-up with an oral delivery platform and one human clinical study under its belt.

- Sandra Depelsenaire – Preclinical Team Lead will speak about Vaxxas' journey.
- Erica Dawson – Chief R&D Officer on the path to success of InDevR, a Life Science tools company offering multiplexed, microarray-based analytical solutions.

Our expert panel is composed of:

- Daniel Adams (former venture capitalist and founder of multiple successful companies)
- Barry Buckland (former Merck executive with extensive product development expertise)
- Laura Palomares (Director UNAM, former advisor to Cofepris, Flublok process development)
- Ab Osterhaus (Academic with successful track record in founding multiple companies).

15:00 – 15:30

Coffee Break

Session 6: Formulation and Stability

Chairs: Jeffrey Blue, MSD, USA

António Roldão, iBET, Portugal

15:30 – 16:00

Lead Speaker

Improving vaccine efficacy through rational formulation design

Dennis Christensen, CRODA Pharma, Denmark

Wednesday, May 22, 2024 (continued)

- 16:00 – 16:15 **Tee mixing as an alternative method to form stable emulsion based adjuvants**
Marissa Bradley, MSD, USA
- 16:15 – 16:30 **Formulation optimization focused on safety and thermostability of a single-vial bivalent Sudan Ebola virus and Marburgh Virus Vaccine**
Axel Lehrer, University of Hawaii, USA
- 16:30 – 16:45 **Multivalent MVA-vectored vaccine elicits EBV neutralizing antibodies in rhesus macaques that reduce EBV infection in humanized mice**
Ivana Reidel, Beckman Research Institute of City of Hope, USA
- 16:45 – 17:00 **Development of a broadly protective neuraminidase-based Influenza Virus vaccine**
Irene Hoxie, Icahn School of Medicine at Mount Sinai, USA
- 17:00 – 18:30 Break / Networking
- 18:30 – 20:00 Dinner
- 20:00 – 22:00 **Poster session 2 (Even numbers)**
Chairs:
Laura Cervera Gracia, Universitat Autònoma de Barcelonna, Spain
António Roldão, iBET, Portugal
Diego Fontana, Laboratorio de Desarrollo Biotecnológico, Facultad de Bioquímica y Ciencias Biológicas, Argentina

Thursday, May 23, 2024

07:00 – 08:30 Breakfast

Session 7: Regional development and manufacturing of vaccines

Chairs: Leda Castilho, Federal University of Rio de Janeiro (UFRJ), Brasil
Raman Rao, Hilleman Labs, Singapore

08:30 – 09:00

Lead Speaker

Accelerating Access to Sustainable Vaccine Adjuvant Technology

Chris Fox, Access to Advanced Health Institute, USA

09:00 – 09:15

The regional manufacturing of and open access to poly ICLC (Hiltonol®) for human and veterinary vaccines

Andrew Simpson, Orygen Biotecnologia, Brazil

09:15 – 09:30

A new academia-industry partnership enabling sustainable and responsive vaccine manufacture

Martina Micheletti, University College of London, UK

09:30 – 09:45

Avian Influenza H5n1 and H7n3 vaccine candidates, from Design to Evaluation

Leandro Alberto Nuñez Muñoz, CINVESTAV, Mexico

09:45 – 10:00

Anti Covid-19 Soberana vaccines: two immunogens, one process

Tammy Boggiano, Center of Molecular Immunology, Cuba

10:00 – 10:30

Coffee Break

10:30 – 12:00

Workshop: Global Health Strategies – engaging through meaningful partnerships

Chairs: Rajeshwari Adhisheshan, Bill & Melinda Gates Foundation, India
Tarit Mukhopadhyay, MSD, USA

Vaccination is considered the most successful healthcare initiative in disease prevention, but achieving universal coverage is still beyond reach. Partly due to the disruptive nature of the Covid-19 pandemic, latest trends indicate a backsliding on childhood vaccinations. According to UNICEF 23 million children missed out on basic childhood vaccines through routine health services in 2020.

This workshop will provide a valuable forum for stakeholders in the vaccine technology field to share their experiences, learn from one another, and identify ways to work together more effectively.

This interactive workshop will cover four broad themes.

1. The importance of partnerships in global health: discussion on the role of partnerships in promoting health equity and improving health outcomes, particularly in low- and middle-income countries.
2. Successful partnership models: The workshop will showcase successful partnership models from past vaccine development and delivery initiatives. Participants to examine the factors that contributed to the success of these partnerships and identify ways to replicate them in future projects.

Thursday, May 23, 2024 (continued)

3. Challenges and opportunities in partnerships: Participants explore the challenges that arise in partnerships, such as conflicting priorities, and resource constraints and how best to address these challenges and capitalize on the opportunities that partnerships provide.
4. Best practices for engaging in meaningful partnerships: The workshop could provide participants with practical tips for engaging in partnerships and outline some of the funding opportunities and priorities for partnerships in global health.

12:00 – 13:30

Lunch

Session 8: Devices and Delivery

Chairs: Megan Polidano, Vaxxas, Australia

Martina Micheletti, University College London, UK

13:30 – 14:00

Lead Speaker

Advances in alternative routes of vaccine administration, and continued challenges

Tanima Sinha, Biomedical Advanced Research and Development Authority (BARDA), USA

14:00 – 14:20

Injectable core-shell particles deliver prime-boost immunization in a single shot

Romain Guyon, University of Oxford, UK

14:20 – 14:40

Understanding the enhanced immune responses to High-Density Microarray Patch vaccination through spatial transcriptomics and antibody repertoire analysis

David Muller, School of Chemistry and Molecular Biosciences, University of Queensland, Australia

14:40 – 15:00

Microarray patch delivery of unadjuvanted recombinant spike protein vaccine induces potent and broad-spectrum immune responses in a phase I clinical study

Alexandra Depelsenaire, Vaxxas, Australia

15:00 – 16:00

Coffee Break and networking

16:00 – 17:30

Poster short talks

3 minutes presentations by 15 selected poster presenters

17:30 – 18:30

KEYNOTE

Enabling vaccine technologies to save more lives

Katey Owen, Bill & Melinda Gates Foundation, USA

18:30 – 19:00

Closing
Conference Chairs

19:00 – 22:00

Banquet

Friday, May 24, 2024

07:00 – 10:00

Breakfast, Checkout and Departures