

# Artificial Intelligence / Human Intelligence & Immunoinformatics Workshop

June 13 & 14, 2024 | Providence, RI

## Day 1: Artificial Intelligence / Human Intelligence and Infectious Diseases: Evolution, Vaccine Design, and Vaccine Efficacy Evaluation

### • Opening Remarks and Introduction

Organizing Committee

### • It's All About Data: The Promises and Limitations of Recent Developments in AI

Stephen Bach, PhD, Brown University

### • "The Medium is the Message" Introduction to/Applications of Computational Immunology (Faster vaccines, predicting vaccine efficacy, understanding the diversity and individuality of immune response)

Annie De Groot MD, EpiVax

### • The Problems We Face: Continuous Evolution of Viral Pathogens. Impact of live attenuated vaccines and pork farming on PRRSV sequence evolution in American swine

Kimberly Vanderwaal, PhD, University of Minnesota

### • Predicting the Next Pathogen: Influenza A and social geography in the United States

Justin Bahl, PhD, University of Georgia

### • Swine Influenza A Viruses and the Tangled Relationship with Humans

Tavis Anderson, PhD, Agricultural Research Service, USDA

### • The iVAX Platform for Vaccine Design and ISPRI-HCP, a Platform for Host Cell Protein Immunogenicity Risk Assessment

Annie De Groot, MD & Kirk Haltaufderhyde, PhD, EpiVax Inc.

### • It's EpiCC: T cell Epitope Content Comparison for Predicting Vaccine Efficacy. Application to PRRSV, Influenza, and PCV2

Andres Gutierrez, PhD & Riley Nolan, EpiVax Inc.

### • How Do We React? Information, immunology, and creativity; Math and sepsis patient data

Tom Sgouros, Brown University

### • Bench-to-Bedside Translational Research: Challenges and suggestions for improvement

Attila A. Seyhan, PhD, Brown University

### • A Universal Pipeline for ML/AI Prediction of Prognostic and Diagnostic Data

Joanna Fueyo, PhD & Professor Mark Kon, PhD, Boston University

### • Combining the Power of AI and Genetics to Develop Effective Personalized Cancer Treatments

Guilhem Richard PhD, EpiVax Therapeutics

### Panel discussion and Q&A session

Dinner reception at The Rooftop at the Providence G to follow

## Day 2: Artificial Intelligence / Human Intelligence and Biologic Therapeutics

### • Introduction

Julian Chandler, Alexion Pharmaceuticals & Brian Roberts, PhD, EpiVax Inc.

### • Why Do Biologics Fail and Could Failures Have Been Predicted?

Amy Rosenberg, MD, EpiVax Inc. (Formerly FDA)

### • Experimental Engines for Immune Systems Analysis: High-Throughput Immune Receptor Functional Screening to Empower AI/ML Algorithms

Brandon DeKosky, PhD, MIT & The Ragon Institute of MGH, MIT, and Harvard

### • Generative Modeling, AI, and Machine Learning Techniques for the Discovery and Optimization of Biologics

Christopher Langmead, PhD, Amgen

### • The ISPRI Platform for Biologics Risk Assessment and Design

Matt Ardito, Aimee Mattei, MS, William Martin, Riley Nolan & Jacob Tivin, EpiVax Inc.

### • Deimmunization Antibody Engineering: affinity-tuned deimmunized bispecific antibodies successfully translated to clinical trials in humans (application of ISPRI and MOE)

Jeonghoon Sun, PhD, Multiverse Pharma

### • Mining Data from Clinical Trials to Develop Clinically Relevant AI Algorithms

Vibha Jawa, PhD, FAAPS, Bristol Myers Squibb

### • AI or HI? Predicting Antibody Immunogenicity from Existing Data

Andres Gutierrez, PhD, EpiVax Inc.

### • Assessing Immunogenicity Risk of Host Cell Proteins Using In Silico and In Vitro Methods

Kirk Haltaufderhyde, PhD, EpiVax Inc.

### • Ozempic and Friends: Should we be concerned about the immunogenicity risk of generic peptides?

Aimee Mattei, MS, & Brian Roberts, PhD, EpiVax Inc.

### • Integrating Human and Machine Intelligence: Managing the Good, the Bad and the Ugly

Joan Peckham, PhD, University of Rhode Island

### Summary of conference

Dinner reception at Bayberry Garden to follow

