SUNDAY, JANUARY 30
Arrival and Registration

MONDAY, JANUARY 31
Welcome and Keynote Address (J8)
David Baker, University of Washington, USA
De novo Design of Function

Welcome and Keynote Address (J7)
Erica Ollmann Saphire, La Jolla Institute for Immunology, USA
Differential Features of SARS-CoV-2 Therapeutic Antibodies

Computational de novo Design of Biomolecules (J8)
Jane S. Richardson, Duke University, USA
A Brief History of Protein Design
Stephen L. Mayo, Caltech, USA
Computational Design of Novel Antibody Small Molecule Conjugates
Tanja Kortemme, University of California, San Francisco, USA
Computational Design of New Molecular Geometries and Ligand-Controlled Functions

Short Talk(s) Chosen from Abstracts

Therapeutic Antibodies from Patients (J7)
Adrian C. Hayday, King’s College London School of Medicine, UK
Anti-Cytokine Abs from Autoimmune Patients
Stephen Quake, Stanford University, USA
Isolation of Rare Human Plasma Cells: Showcasing Anti-Peanut IgE Antibodies
Natálie Freund, Tel Aviv University, Israel
Human-Isolated Antibodies Targeting Mycobacterium Tuberculosis

Short Talks Chosen from Abstracts

Workshop (J7)
Short Talks Chosen from Abstracts

Repurposing Proteins for Binding and Catalysis (J8)
William F. DeGrado, University of California, San Francisco, USA
de novo Design of Binding Proteins and Catalysts
Birte Höcker, University of Bayreuth, Germany
Evolution and Design of Proteins
Dek Woolfson, University of Bristol, UK
Exploring the Dark Space of Protein Structure and Function through Rational and Computational Design
Neil P. King, University of Washington, USA
Computational Design of Self-Assembling Protein Nanomaterials for Medical Applications

Short Talk(s) Chosen from Abstracts

Antibodies from Within: Vaccination and Delivery Technologies (J7)
Patrick C. Wilson, University of Chicago, USA
Understanding Vaccination: The Influenza Model
Peter D. Kwong, NIAID, National Institutes of Health, USA
Anti-Pathogen Antibodies
Andrea Carfi, BioNTech / Moderna, USA
Antibody-Inducing mRNA-Based Vaccine for COVID-19: 1 Year Experience in Humans
Ronald C. Desrosiers, University of Miami Miller School of Medicine, USA
AAV Delivery of Antibodies for Long-Term Protection
Tineke Cantaert, Institut Pasteur Cambodia, Cambodia
Human Anti-Dengue Antibody Responses

Short Talks Chosen from Abstracts

Poster Session 1

TUESDAY, FEBRUARY 1
Energy Landscape Search for Affinity and Specificity (J8)
Amy E. Keating, Massachusetts Institute of Technology, USA
Mapping Peptide Binding Specificity Space
Roberto A. Chica, University of Ottawa, Canada
Computational Design of Protein Energy Landscapes
Bruce Donald, Duke University, USA
Algorithms for Ensemble-Based Computational Protein Design
Sophie Barbe, Université de Toulouse, France
Search Algorithms in Protein Design

Short Talk(s) Chosen from Abstracts

New Targets and Tools (J7)
David P. Humphreys, UCB Pharma, UK
IgG FcRn Blockade Therapeutics
Esther Breij, Genmab, Netherlands
Enhanced IgG Hexamerization for Increased Therapeutic Antibody Potency
Amita Datta-Mannan, Eli Lilly & Company, USA
FcRn Binding Ab Mutants, Peptide Fusions and Glycan Effects
Pierre Bruhn, Institut Pasteur, France
Human Autoimmune Plasma Cell Repertoires

Short Talks Chosen from Abstracts

Prediction and Design of Protein Ligand Interactions (J8)
Brian K. Shoichet, University of California, San Francisco, USA
Ultra-Large Library Docking for Discovering New Chemotypes
Nir London, Weizmann Institute of Science, Israel
Designing Covalent Inhibitors

Xavier Barril, Gain Therapeutics, Spain
High-Throughput Virtual Dissociation Experiments: Application to Fragment Screening

Ora Furman, Hebrew University, Hadassah Medical School, Israel
Peptides as Far as the Eye Can See

Short Talk(s) Chosen from Abstracts

The Rise of Bispecifics (J7)

Stefan Weigand, F. Hoffmann La Roche AG, Switzerland
Complex Biologics from Roche’s Pipeline

Matthew Sleeman, Regeneron Pharmaceuticals, Inc., USA
Costimulatory Bispecifics Antibodies

Mark S. Dennis, Denali Therapeutics, USA
BBB Crossing Bispecific Abs

Bruce Keyt, IGM Biosciences, USA
IgM Bispecifics and Multimers as Therapeutics

Short Talks Chosen from Abstracts

Poster Session 2

WEDNESDAY, FEBRUARY 2

Keynote Address (Joint)
Charlotte Deane, University of Oxford, UK
Deep Learning based on Ab Sequences and Structure Information

Reperitoires, Learning and in Silico Design (Joint)
Arvind Sivasubramanian, Adimab LLC, USA
Computational Modeling and Design of Antibody Function

Sai T. Reddy, ETH Zurich, Switzerland
Engineering an Antibody by Deep Learning-Guided Directed Evolution

Short Talk(s) Chosen from Abstracts

Machine Learning for Design of Enhanced Therapeutics and Biocatalysts (J8)

Speaker to be Announced

Timothy Whitehead, University of Colorado Boulder, USA
One-Shot Design and Engineering of Portable in vitro and in vivo Biosensors

Joanna Slusky, University of Kansas, USA
Machine Learning for Accelerating the Design of Metalloenzymes.

Daniela Grabs, Arzeda Corp, USA
Designer Enzymes to Deliver Performance Chemicals and Materials

Bruno Emanuel Correia, École Polytechnique Fédérale de Lausanne, Switzerland
Deciphering Interaction Fingerprints from Protein Molecular Surfaces using Geometric Deep Learning

Short Talk(s) Chosen from Abstracts

Novel Therapeutic Antibodies in the Clinic (J7)

Cecile Geuijen, Merus NV, Netherlands
Targeting T/NK Costimulatory Receptors in Oncology (4-1BBxPD-L1 Bispecific Antibody)

Eric Vivier, Aix Marseille University, France
Exploiting NK Cells to Induce Anti-Tumor Response in Preclinical and Clinical Setting

Neil Brewis, F-star Biotechnology Ltd., UK
Immuo-Oncology Therapeutics (including OX40x4-1BB Bispecifics)

Christos Kyryatsous, Regeneron Pharmaceuticals Inc, USA
Anti-Covid-19 Therapeutic mAbs: Design and Results One Year After

Short Talks Chosen from Abstracts

Meeting Wrap-Up: Outcomes and Future Directions (Organizers) (J7)

THURSDAY, FEBRUARY 3

Departure