# AFFINITY 2023

## DAY 1: 5 JUNE

**8:00** Registration opens

**8:30** Opening Remarks : *Sophia Hober, ISMR President & Cecília Roque, Conference Chair*

**8:40** Plenary Inaugural Lecture by ***Chris Lowe (University of Cambridge, UK)*** - "Affinity Interactions: a 360° vision of Past, Present and Future."

**Session 1:**
Modeling and Predicting Affinity and Protein-Interactions

*Chairs:*
*Chris Lowe &*
*Katerina Kourentzi*

**9:25** **Keynote Lecture 1: *Ora Schueler-Furman (The Hebrew University of Jerusalem, IL)*** - "Structural modeling in the AI era - peptide-protein interactions as example."

**10:00** **S 1. 1: *Katharina Köchl (Innophore GmbH, AT)*** - "Optimizing variant-specific therapeutic SARS-CoV-2 decoys using deep-learning-guided molecular dynamics simulations."

**10:20 Coffee Break (25min)**

**10:45** **S 1. 2: *Giulia D'Arrigo (HITS gGmbH, DE)*** - "Computation of unbinding rates and mechanisms in protein-protein systems."

**11:05** **S 1. 3: *Sergio Sousa (UCIBIO, Faculty of Medicine, University of Porto, PT)*** - "Development of Biomolecular Simulation Protocols for Protein Recognition by DNA/RNA Sequences."

**11:25** **S 1. 4: *Ana Luísa Carvalho (UCIBIO, NOVA School of Science and Technology, PT)*** - "A molecular view on how the human gut symbiont Bacteroides ovatus can recognize diet-derived health-promoting carbohydrates. "

**11:45** **S 1. 5: *Tobias Schopper (Innophore GmbH, AT)*** - "Next generation enzyme discovery: Identification & optimization of enzyme candidates by 3D point-cloud Catalophores™."

**11:55** **Flash presentations slot I**

**12:15** **Keynote Lecture 2: *Monika Fuxreiter (University of Padova, IT)*** - "Multimodality is fundamental to protein interactions."

**12H50 Lunch (1h30) + ISMR GC Meeting**

**Session 2:**
Affinity technologies in Health

*Chairs:*
*Sophia Hober &*
*Frédéric Pecorari*

**14:15** **Keynote Lecture 3: *Andreas Plückthun (University of Zurich, CH)*** - "The design of evolution and the evolution of design."

**14:50** **S 2. 1: *Rezan Güler (Affibody AB, SE)*** - "Affibody-based formats in clinical development."

**15:10** **S 2. 2: *Malin Jönsson (KTH Royal Institute of Technology, SE)*** - "CaRA - Calcium-Regulated Affinity Domains Enhancing Therapeutic Potential."

**15:30** **S 2. 3: *Andreas Wisniewski (KTH Royal Institute of Technology, SE)*** - "ADAPTs: Small engineered scaffold proteins able to simultaneously target relevant biomarkers of inflammatory diseases with high affinity as well as albumin for potential half-life extension."

**15:50** **S 2. 4: *Célia Caillet-Saguy (Institut Pasteur, FR)*** - "Targeting of PDZ-containing proteins by Hepatitis B virus and SARS-CoV-2."

**16:10** **Flash presentations slot II**

**16:30 Coffee Break (30min)**

**17:00** **Keynote Lecture 4: *Nick Devoogdt (Vrije Universiteit Brussel, BE)*** - "Medical applications of single-domain antibodies: molecular imaging and beyond."

**17:35** **S 2. 5: *John McCafferty (Maxion Therapeutics, UK)*** - "KnotBodies; Creating ion channel modulating antibodies by fusing Knottins into antibody loops."

**17:55** **S 2. 6: *Linnea C Hjelm (KTH Royal Institute of Technology, SE)*** - "Development of sequestrins for aggregation-prone peptides."

**18:15** **Flash presentations slot III & IV**

**18:55** **Group photo**

**19:00** **WELCOME RECEPTION @ CONFERENCE VENUE**

**21:00** END OF DAY 1

# AFFINITY 2023

## DAY 2: 6 JUNE

**8:00** Opening Remarks : *Frédéric Pecorari, Conference Co-chair*

**Session 3:**
Affinity technologies in Materials Science & unconventional applications

*Chair:*
*Alois Jungbauer*

**8:10** **S 3. 1: *Karsten Haupt (Université de Technologie de Compiègne, FR)*** - "Synthetic peptide antibodies - Principle and application of molecularly imprinted polymer nanogels specific for protein epitopes."

**8:30** **S 3. 2: *Giang NGO (INSERM, FR)*** - "Designing a new approach for protein recognition by Molecularly Imprinted Polymers using silylated amino acids."

**8:50** **S 3. 3: *Karolina Chairez (Tecnológico de Monterrey, MX)*** - "Construction of 3D aqueous two-phase system cultures for MCF-7 breast cancer cell line."

**9:10** **S 3. 4: *Ana Pina (ITQB NOVA, PT)*** - "Supramolecular recognition can lead to the formation of peptide-based coacervates with catalytic properties."

**9:30** **Keynote Lecture 5: *Mark Howarth (University of Cambridge, UK)*** - "Infinite affinity, bacterial superglues and outbreak protection."

**10:05** **Flash presentations slot V**

**10:25 Coffee Break (25min)**

**10:50** **Keynote Lecture 6: *Stefano Menegatti (North Carolina State University, US)*** - "NC-VVIRAL: a Novel Bioprocess Toolbox for the Affinity Purification of Therapeutic Viruses."

**Session 4 :**
Affinity technologies in Bioseparation

*Chairs:*
*Marco Palomares & Raquel Aires Barros*

**11:25** **S 4. 1: *Alexander Zollner (BOKU, AT)*** - "Bioseparation of enveloped virus-like particles with different surface antigens by a heparin affinity chromatography platform process."

**11:45** **S 4. 2: *Augusto Pedro (CICECO - Aveiro Institute of materials, PT)*** - "Ionic-liquid-functionalized spherical silica microparticles as efficient multimodal chromatographic supports."

**12:05** **S 4. 3: *Nico Lingg (Austrian Centre of Industrial Biotechnology, AT)*** - "Interactome of immobilized metal affinity chromatography."

**12:25** **S 4. 4: *Ana Furtado (NOVA School of Science and Technology, PT)*** - "Sustainable biorecognition materials for affinity-driven purification processes ."

**12:35** **Flash presentations slot VI**

**13:10 Lunch (1h00)**

**14:10** **S 4. 5: M. A. *Vijayalakhsmi (Vellore Institute of Technology, IN)*** - "Efficient porous boronate functionalized monolith for glycoprotein separation from human plasma.

**14:30** **S 4. 6: *Marco Reindl (Medical University of Graz, AT)*** - "Magnetic molecularly imprinted polymers as devices to remove limonin selectively from lemon juice."

**14:50** **S 4. 7: *Daisylea de Souza Paiva (Dynamic Biosensors GmbH, DE)*** - "Real-time interaction cytometry: a technology to determine affinity, avidity and kinetic rates directly on living cells."

**15:10** **Flash presentations slot VII**

**15:30** **S 4. 8: *Racha Majed (Refeyn, UK)*** - "Mass photometry – an analytical technology for biomolecular characterization."

**15:50 Coffee Break (20min)**

**16:10** **Flash presentations slot VIII**

**16:30** **Affinity Award Lecture , *Chair Chris Lowe***

**18:00** **Departure to Conference Dinner from Conference Venue**

**23:00** END OF DAY 2

# AFFINITY 2023

## DAY 3: 7 JUNE

**Session 5:**
Affinity technologies in Biosensing

*Chairs:*
*Stefano Menegatti & Binh Vu*

**8:55** Opening Remarks

**9:00** **Keynote Lecture 7: *Molly M Stevens (Imperial College London, UK)*** - "Designing new approaches to ultrasensitive biosensing and therapeutics."

**9:35** **S 5. 1: *Aleš Podgornik (University of Ljubljana, SI)*** - "Non-invasive method for determination of immobilized protein quantity."

**9:55** **S 5. 2: *Katerina Kourentzi (University of Houston, US)*** - "Development of Antibody Affinity-based Smartphone-readable Assays for Point-of-Care Detection of Protein Biomarkers."

**10:15** **Flash presentations slot IX & X**

**10:55 Coffee Break (30min)**

**11:25** **S 5. 3: *Gonçalo Teixeira (UCIBIO, NOVA School of Science and Technology, PT)*** - "Odorant-binding proteins based sensors for Volatile Organic Compounds detection."

**11:45** **S 5. 4: *Eric Janezic (Genentech Inc., US)*** - "A novel, label-free assay to determine kon, koff, and KD of therapeutic antibodies on living cells."

**12:05** **S 5. 5: *Joana Martins (NOVA School of Science and Technology, PT)*** - "A three-component self-assembled chemosensor for the detection of two distinct analytes using a single dye."

**12:25** **S 5. 6: *Luminita Damian (Cytiva, UK)*** - "Novel tools to study interaction analysis using SPR."

**12:45** **Younger Investigator Awards Announcements**

**13:00 Lunch (1h00)**

**14:00** **YOUNG AFFINITY FESTIVAL**

- **14:00** **Current challenges and new approaches in affinity.**
  ***Sophia Hober (KTH Royal Institute of Technology, SE)*** - "How to approach the study of molecular recognition."
- **14:25** ***Frédéric Pecorari (Nantes University, FR)*** - "Current Protein Quality Standard PQS."
- **14:50** ***Alois Jungbauer (BOKU, AT)*** - "Affinity technologies for large scale manufacturing and the confusion about cost."
- **15:15** ***Katerina Kourentzi (University of Houston, US)*** – "Development of a deployable affinity diagnostic technology in an academic setting during a pandemic crisis: lessons learned."
- **16:00** ***Round Table*** *Joint ISMR & SPBt – Scientific societies impact on career development at scientific level.*
- **16:30** Clossing Session
- **16:30** Party / Networking / Opportunity fair

**18:00** END OF DAY 3