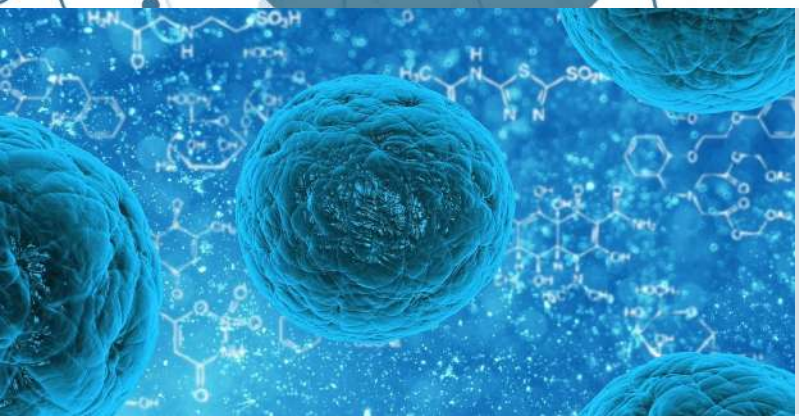
Associazione Farmaceutici Industria
Società Scientifica

WEBINAR SIMPOSIO AFI 2021



AFI/CRS SESSION

SCALING NANOMEDICINE UP: FROM WET BENCHES TO FIRST-IN-HUMAN

THURSDAY, SEPTEMBER 9TH - HOUR 16:30/18:30

Nanomedicine is a revolutionary interdisciplinary science, which **combines knowledge from Physics, Biology, Chemistry and Medicine** to treat conditions and diseases of the human body on an atomic and molecular level. **Nanomedicine has many applications**, from drug delivery to individual cell repair, to artificial tissues and radiation therapy. **The pandemic situation we are currently living**, and that was unconceivable until two years ago, **burst out the amazing opportunity of nanomedicine for drug delivery**. T**he most innovating anti COVID vaccines currently on the market are based on nanoparticles** and hundred million persons are going to use them. This time is giving scientists the enormouschance to demonstrate the **superior benefits of nanomedicine**.

The webinar focuses on the pathway of nanomedicine from benches to first in human, highlighting the variety and interdisicplinary expertises that are needed to get on the market nanosized drug delivery systems, also taking into account that nanomedicine nowadays is representing the chance for world population to get back to normal style of life.

ORGANIZING COMMITTEE

Giorgio Bruno - AFI President
Bice Conti - Università degli studi di Pavia
Paolo Decuzzi - CRS President - Istituto Italiano di Tecnologia
Massimo Pedrani - AFI - Mogon Pharmaceuticals

SPEAKERS/CHAIRMAN

Giorgio Bruno - AFI President
Paolo Caliceti - Adritelf President - Università di Padova
Bice Conti - Università degli studi di Pavia
Patrick Couvreur - Académie des Sciences - Académie Nationale de Médecine - Président Honoraire de l'Académie Nationale de Pharmacie - Académie des Technologies, Paris
Paolo Decuzzi - CRS President - Istituto Italiano di Tecnologia
Lorenzo De Ferra - Chemi SpA, Italy
Joseph DeSimone - Stanford University, USA
Giovanni Manfredi - Novavido, Italy
Paola Minghetti - AFI Vice President - Università degli Studi di Milano
Mark Prausnitz - Georgia Institute of Technology, Atlanta
David Stepensky - Ben-Gurion University of the Negev, Israel

PROGRAM

Chairman: Prof. Paolo Caliceti - Adritelf President - Università di Padova
Prof. Bice Conti - Università degli studi di Pavia
Prof. Paola Minghetti - AFI Vice President - Università degli Studi di Milano

16:30-16:40 - **Introduction**
Prof. Paolo Decuzzi (CRS President - Istituto Italiano di Tecnologia) , Dr. Giorgio Bruno (AFI President)

16:40-16:55 - **Squalene-based nanomedicine for the treatment of neurological disorders**
Prof. Patrick Couvreur Professeur Emérite, Membre de l'Académie des Sciences, Membre de l'Académie Nationale de Médecine, Président Honoraire de l'Académie Nationale de Pharmacie, Membre de l'Académie des Technologies, Paris, France

16:55-17:10 - **Digital Fabrication Tools for Precision Medicine**
Prof. Joseph DeSimone, Translational Medicine and Chemical Engineering Departments of Radiology and Chemical Engineering, Department of Chemistry, Graduate School of Business, Stanford University, USA

17:10-17:25 - **Translation of microneedle patch technology for the eye and the skin**
Prof. Mark Prausnitz, School of Chemical & Biomolecular Engineering, Georgia Institute of Technology, Atlanta, GA USA

17:25-17:40 - **Systemic and local disposition of the anti-cancer liposomes, and the ways to control it**
Prof. David Stepensky, Department of Clinical Biochemistry and Pharmacology Faculty of Health Sciences, Ben-Gurion University of the Negev, Israel

17:40-17:55 - **Synthesis of phospholipids for pharmaceutical formulations**
Dr. Lorenzo De Ferra Scientific Director, Chemi SpA, Italy

17:55-18:10 - **Liquid retina: nanotechnology applied to vision recovery**
Dr. Giovanni Manfredi, CEO Novavido, Italy

18:10-18:30 - **Round Table**
Chairman: Prof. Paolo Decuzzi (CRS President - Istituto Italiano di Tecnologia)

CLICK HERE TO SUBSCRIBE

Participation is free upon registration for AFI and CRS Members and for AIFA delegate, istituto Superiore di Sanità and Ministero della Salute; registration fee for non-AFI or CRS members: euro 50.00 + VAT 22%

Organising Secretary
New Aurameeting Srl
Via Rocca d'Anfo, 7 - 20161 Milano
Tel: +39 02 66203390 - Fax: +39 02 45486457
E-mail: eventi@newaurameeting.it

SPEAKERS

Prof. Patrick Couvreur

Patrick COUVREUR is an Emeritus Professor of Pharmacy at the Paris-Saclay University, member of the Académie des Sciences and holder of the chair of "Innovations Technologiques" (2009-2010) at the prestigious « Collège de France ». He is appointed as a Senior Member of the "Institut Universitaire de France" since 2009.

Prof Patrick COUVREUR's contributions in the field of drug delivery, nanomedicine and drug targeting are highly recognized around the world with 600 peer review research publications (Google Scholar H-index 133 and 75,500 citations), some of them in prestigious journals (ie. Nature Nanotech, Nature Materials, Nature Comm, Science Advances, PNAS, JACS etc.). His research is interdisciplinary, aiming at developing new nanomedicines for the treatment of severe diseases. This research is at the interface between Physico-Chemistry of Colloids, Polymer Chemistry, Material Science, pharmaceutical formulation, Cellular and Molecular Biology and Experimental Pharmacology. Patrick COUVREUR's research has led to the funding of three start-up companies (Bioalliance , Medsqual and Squal Pharma). Bioalliance (now ONXEO) entered the stock market in 2005 and a nanomedicine invented in Couvreur's lab has reached the phase III clinical trial for the treatment of the hepatocarcinoma. By a decree of the President of the French Republic, Patrick Couvreur was recently appointed as "Chevalier de la Légion d'Honneur" (Knight of the Légion d'Honneur).

Prof. Joseph M. DeSimone

Joseph M. DeSimone is the Sanjiv Sam Gambhir Professor of Translational Medicine and Chemical Engineering in the Departments of Radiology and Chemical Engineering at Stanford University, since 2000. He also has courtesy appointments in the Department of Chemistry and Stanford's Graduate School of Business . He has published 370 scientific articles and holds over 220 issued patents. DeSimone and students pioneered the use of supercritical CO2 to synthesize high-performance polymers, a process commercialized by DuPont for the manufacture of Teflon. Extending this research, he and students enabled the molding of nanoparticles with controlled size, shape, chemistry, and elasticity (PRINT - particle replication in non-wetting templates). This technology, which has been used to provide essential insights into the design of targeted therapeutics, vaccines, and imaging agents, led DeSimone to co-found Liquidia Technologies (NASDAQ: LQDA). More recently, he co-invented a 3D printing technology, CLIP (continuous liquid interface production), based on which the company Carbon, Inc. was founded. DeSimone served as the CEO of Carbon for six years. DeSimone is now building his research program at Stanford at the intersection of medicine, engineering, and business, involving different clinically relevant areas, including iontophoretic localized drug delivery, and high-resolution 3D printing for human health-related applications.

SPEAKERS

Prof. Mark R. Prausnitz

Mark Prausnitz is Regents' Professor and J. Erskine Love, Jr. Chair of Chemical & Biomolecular Engineering at the Georgia Institute of Technology. He earned a BS degree from Stanford University and PhD degree from MIT, both in Chemical Engineering. Dr. Prausnitz and his colleagues carry out research on biophysical methods of drug delivery, which employ microneedles, ultrasound, lasers, electric fields, heat, convective forces, and other physical means to control the transport of drugs, proteins, genes, and vaccines into and within the body. A major area of focus involves the use of microneedle patches to administer vaccines to the skin in a painless, minimally invasive manner. In collaboration with Emory University, the Centers for Disease Control and Prevention and other organizations, Dr. Prausnitz's group is advancing microneedles from the research benches to studies in human subjects. In addition to developing a self-administered influenza vaccine using microneedles, Dr. Prausnitz is translating microneedles technology especially to make vaccination in developing countries more effective. Dr. Prausnitz teaches an introductory course on engineering calculations, as well as two advanced courses on pharmaceuticals. He has published more than 300 journal articles and has co-founded five start-up companies including Micron Biomedical and Clearside Biomedical.

Prof. David Stepensky

Dr. David Stepensky is an Associate Professor from the Department of Clinical Biochemistry and Pharmacology, Ben-Gurion University of the Negev, Beer-Sheva, Israel. He holds PhD degree from the Dept. of Pharmaceutics, School of Pharmacy, The Hebrew University of Jerusalem, Israel, and received post-doctoral training at the Dept. of Immunology, Weizmann Institute of Sciences, Rehovot, Israel and at the Dept. of Immunobiology, Yale University, New Haven, CT, USA. His primary research interests are analysis of pharmacokinetic and pharmacodynamic properties of pharmacological agents (small molecular weight drugs and biopharmaceuticals) and development of nanovesicle- and nanoparticle-based systems that can efficiently deliver these agents to their site of action. He authors over 50 papers and book chapters, serves as consultant to the Israeli Ministry of Health, pharmaceutical and start-up companies, and delivers customized workshops and courses on drug development, pharmaceutics, pharmacology and other topics of his research expertise.

SPEAKERS

Dr. Lorenzo De Ferra

Dr. Lorenzo de Ferra is the Scientific Director of Chemi S.p.A., a leading Italian company, part of the Italfarmaco Group, specialized in the development, production and sales of high-quality generic APIs, complex molecules, peptides, lipids and phospholipids. Dr. de Ferra graduated in Industrial Chemistry from the University of Rome "La Sapienza". Early in his career started to interact with the private sector and he became first Assistant to the production Manager and then project leader at Research&Development of Recordati S.p.A., an Italian pharmaceutical company specialized in the discovery and development of novel medicine for cardiovascular, urological diseases and rare diseases. Then in the early 90', he moved to Chemi S.p.A. where he has been working since then in different capacities: first, as a Project Leader R&D of the lipid research programme (1991 - 1999); then as a Business Unit Manager supervising R&D and Marketing activities in phospholipids, peptides and asymmetric catalysis (2000 - 2004); as the R&D Director of the Patrica (Rome) and Cinisello (Milan) plants that involved also the management of the technology transfers for the Italian and Brazilian plants (2006 - 2008); and finally the Scientific Director since 2007. Dr. de Ferra has co-authored multiple publications and co-invented several patents for the synthesis, characterization, purification of lipids, peptides, and other clinically relevant compounds.

Dr. Giovanni Manfredi

Giovanni Manfredi graduated in Material Science and Engineering and ended his Ph. D. in Material Science in the University of Genoa in 2017 working on polymer photonics and light matter interaction. He then moved to the Center for Nanoscience and Technology of the Italian Institute of Technology in Milan working as a postdoc researcher. His work was embedded inside a bigger project focused on the study of interaction between polymers and excitable cells and on the development of polymer-based retina prostheses. Eventually, the work led to the proposal of a polymer nanodevice able to rescue vision in an animal model of retina degeneration. In 2021, together with Guglielmo Lanzani and Fabio Benfenati, directors of the two IIT centers involved in the project, dr. Manfredi co-founded Novavido S.r.l., a startup aiming to develop and translate to humans the breakthrough retina prosthesis. Since the foundation, he also works as CEO for Novavido.