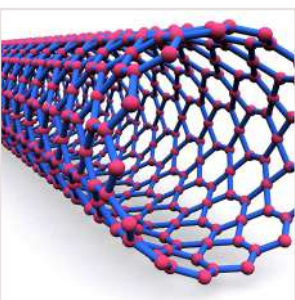
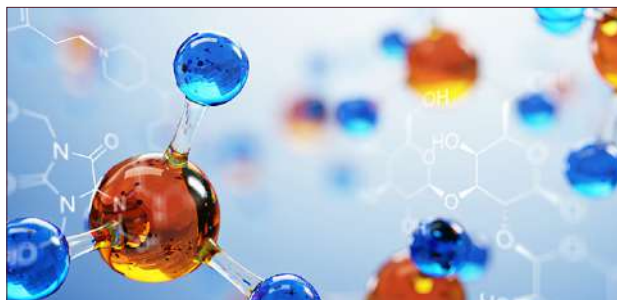
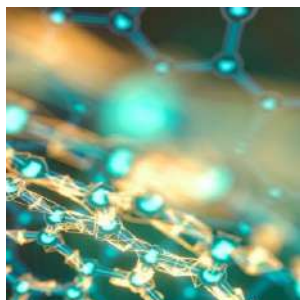

Keynote Forum

March 10, 2022

Biomaterials 2022



5th International Conference on
Biomaterials and Nanomaterials

March 10, 2022 | Webinar

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Sergey Suchkov

Institute for Biodesign & Translational Applications, Russia

Personalized and Precision Medicine (PPM) as a Unique Healthcare Model to be Set Up via Biodesign, Bio- and Chemical Engineering, Translational Applications, and Upgraded Business Modeling to secure the Human Healthcare, Wellness and Biosafety

Traditionally a disease has been defined by its clinical presentation and observable characteristics, not by the underlying molecular mechanisms, pathways and systems biology-related processes specific to a particular patient (ignoring persons-at-risk). A new systems approach to subclinical and/or diseased states and wellness resulted in a new trend in the healthcare services, namely, personalized and precision medicine (PPM).

To achieve the implementation of PPM concept, it is necessary to create a fundamentally new strategy based upon the biomarkers and targets to have a unique impact for the implementation of PPM model into the daily clinical practice and pharma. In this sense, despite breakthroughs in research that have led to an increased understanding of PPM-based human disease, the translation of discoveries into therapies for patients has not kept pace with medical need. It would be extremely useful to integrate data harvesting from different databanks for applications such as prediction and personalization of further treatment to thus provide more tailored measures for the patients and persons-at-risk resulting in improved outcomes and more cost effective use of the latest health care resources including diagnostic (companion ones), preventive and therapeutic (targeted molecular and cellular) etc.

Translational researchers, bio-designers and manufacturers are beginning to realize the promise of PPM, translating to direct benefit to patients or persons-at-risk. For instance, companion diagnostics tools and targeted therapies and biomarkers represent important stakes for the pharma, in terms of market access, of return on investment and of image among the prescribers. At the same time, they probably represent only the generation of products resulting translational research and applications. So, developing medicines and predictive diagnostic tools requires changes to traditional clinical trial

designs, as well as the use of innovative (adaptive) testing procedures that result in new types of data. Making the best use of those innovations and being ready to demonstrate results for regulatory bodies requires specialized knowledge that many clinical development teams don't have. The areas where companies are most likely to encounter challenges, are data analysis and workforce expertise, biomarker and diagnostic test development, and cultural awareness. Navigating those complexities and ever-evolving technologies will pass regulatory muster and provide sufficient data for a successful launch of PPM, is a huge task. So, partnering and forming strategic alliances between researchers, bio-designers, clinicians, business, regulatory bodies and government can help ensure an optimal development program that leverages the Academia and industry experience and FDA's new and evolving toolkit to speed our way to getting new tools into the innovative markets.

Healthcare is undergoing a transformation, and it is imperative to leverage new technologies to support the advent of PPM. This is the reason for developing global scientific, clinical, social, and educational projects in the area of PPM and TraMed to elicit the content of the new trend. The latter would provide a unique platform for dialogue and collaboration among thought leaders and stakeholders in government, academia, industry, foundations, and disease and patient advocacy with an interest in improving the system of healthcare delivery on one hand and drug discovery, development, and translation, on the other one, whilst educating the policy community about issues where biomedical science and policy intersect.

Speaker Biography

Sergey Suchkov was born in the City of Astrakhan, Russia, in a family of dynasty medical doctors. In 1980, graduated from Astrakhan State Medical University and was awarded with MD. In 1985, Suchkov maintained his PhD as a PhD student of the I.M. Sechenov Moscow Medical Academy

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and Institute of Medical Enzymology. In 2001, Suchkov maintained his Doctor Degree at the National Institute of Immunology, Russia. From 1989 through 1995, Dr Suchkov was being a Head of the Lab of Clinical Immunology, Helmholtz Eye Research Institute in Moscow. From 1995 through 2004 - a Chair of the Dept for Clinical Immunology, Moscow Clinical

Research Institute (MONIKI). In 1993-1996, Dr Suchkov was a Secretary-in-Chief of the Editorial Board, Biomedical Science, an international journal published jointly by the USSR Academy of Sciences and the Royal Society of Chemistry, UK.

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Alberto T Estévez and Yomna Abdallah

Universitat Internacional De Catalunya, Spain

Biomaterials & Architecture: A Possible Future

The *Zeitgeist* of the 21st century, and the signs of our time, deserve due attention from Engineering and Architecture. At the moment in which the human being has begun to be aware of the appearance of the so-called Anthropocene, then considerations and actions that are radically different from how things have been lived until now are required. And even more so when these have changed so much in such a short time, that there has hardly been time for a correct analysis and assimilation. Thus, while the Modern Movement of the 20th century worked to design “from the spoon to the city”, we, the inhabitants of the 21st century, can already transcend that work only on the surface of things, as it has been doing for millennia: “exploring advanced concepts and frameworks for better living”. Now, with the current technological possibilities, it is time to design “from DNA to planet”. From the cell and the bit to the entire Solar System, passing through all the intermediate scales. In this speech then some of our multiscale and transdisciplinary projects and works are shown, “from DNA to the planet”, presenting some of the most unique milestones reached, doors to unusual frontiers of knowledge in engineering and architecture, with the hope of having served to expand our perspectives, fields of action and horizons, for the

benefit of our planet and of all humanity.

Speaker Biography

Alberto T. Estévez, architect, with a professional office of architecture and design in Barcelona since 1983. Chairman-professor, founder and first director of ESARQ, the School of Architecture of UIC Barcelona (Universitat Internacional de Catalunya). Founder and first director of UIC Architecture PhD and Masters. Director of iBAG-UIC Barcelona (Institute for BioDigital Architecture & Genetics), that includes the Genetic Architectures Research Group & Office, and the Master's Degree in Biodigital Architecture. He has written more than 200 publications, participating in a large number of exhibitions, and invited lectures around the world, presenting his ideas, projects and works.

Yomna K. Abdallah, architect, assistant professor of ESARQ, the School of Architecture of UIC Barcelona (Universitat Internacional de Catalunya). Deputy Director of iBAG-UIC Barcelona (Institute for BioDigital Architecture & Genetics), that includes the Genetic Architectures Research Group & Office, and the Master's Degree in Biodigital Architecture. She is a Member of Bioengineering Institute of Technology at UIC. She is also a lecturer at Helwan University, Egypt, Faculty of Applied Arts, and led multidisciplinary research projects in numerous universities. While receiving multiple grants, funds and fellowships, and having numerous published papers in indexed journals and editorials.

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