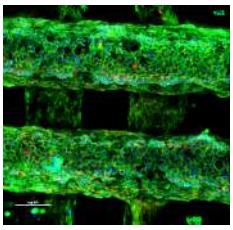
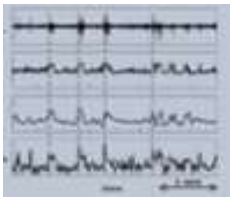
BIOtech
Biomedical Technologies

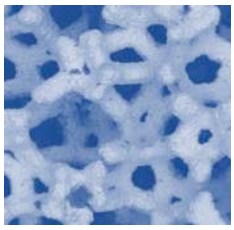
UNIVERSITY
OF TRENTO - Italy
Department of Industrial Engineering

Seminars Series

2020-2021







REMIX
Horizon 2020 European Union Funding for Research & Innovation
MSCA-RISE 2019 GA 778078

Innovation paths in the scientific sector

Speaker: **Dr. Marco Masia**
Enihilo
Chair: Prof. Antonella Motta

February 24 2021 2.00-3.00 pm CET
Zoom Platform

Abstract

In this talk, dr Masia will introduce his non-linear career path and touch upon the highlights of his experience with innovation. Particular emphasis will be devoted to his experience as consultant of start-ups in the scientific sector.

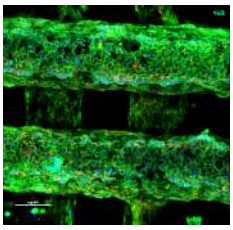
termis

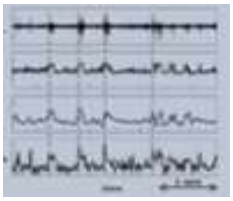
BIOtech
Biomedical Technologies

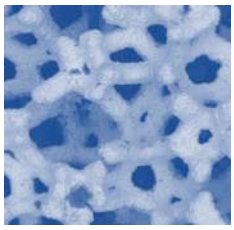
UNIVERSITY OF TRENTO - Italy
Department of Industrial Engineering

Seminars Series

2020-2021







REMIX
Horizon 2020 European Union Funding for Research & Innovation
MSCA-RISE 2019 GA 778078

Hurdles in technology transfer of an Advanced Therapy Medicinal Product

Speaker: **Prof. Graziella Pellegrini**
Regenerative Medicine Institute
Modena

Chair: Prof. Antonella Motta

March 10 2021 2.00-3.00 pm CET
Zoom Platform

Abstract

Gene therapy, cell therapy, and tissue engineering have the potential to revolutionize the treatment of disease and injury. Attaining marketing authorization for such advanced therapy medicinal products (ATMPs) requires a rigorous scientific evaluation by the European Medicines Agency— authorization is only granted if the product can fulfil stringent requirements for quality, safety, and efficacy. However, many ATMPs are being provided to patients under alternative means, such as “hospital exemption” schemes. Holoclar (ex vivo expanded autologous human corneal epithelial cells containing stem cells), a novel treatment for eye burns, is one of the few ATMPs to have been granted marketing authorization and is the first containing stem cells. This review highlights the differences in standards between an authorized and unauthorized medicinal product, and specifically discusses how the manufacture of Holoclar had to be updated to achieve authorization. The result is that patients will have access to a therapy that is manufactured to high commercial standards and is supported by robust clinical safety and efficacy data.

Board:
Antonella Motta
Claudio Migliaresi
Devid Maniglio

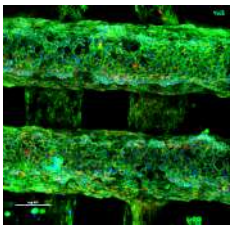
Secretariat:
Luca Penasa
Luca.penasa.s@unitn.it

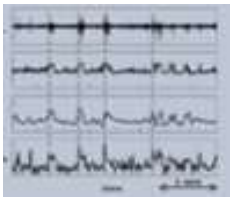
termis

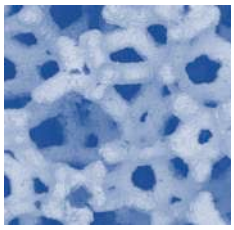
BIOtech
Biomedical Technologies

UNIVERSITY OF TRENTO - Italy
Department of Industrial Engineering

Seminars Series
2020-2021







REMIX
Horizon 2020 European Union Funding for Research & Innovation
MSCA-RISE 2019 GA 778078

Story of Elastin, from Lab to Market

Speaker: **Prof. Tony Weiss**
University of Sydney

Chair: Prof. Antonella Motta

March 24 2021 10.00-11.00 am CET
Zoom Platform

Abstract

Professor Tony Weiss is world leader in the study and applied use of human tropoelastin and synthetic elastin. Mammals rely on elastin to convey elasticity to their tissues. Mastery of this profoundly versatile protein facilitate the augmentation and repair of elastic human tissues. His talk will explore fundamental and applied results from his laboratory and collaborators. Professor Weiss will outline how he founded a company and present the steps leading to its commercial success.

.

Secretariat:

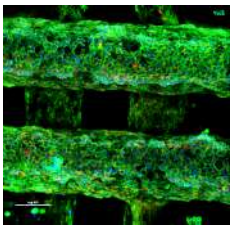
Luca Penasa
Luca.penasa.s@unitn.it

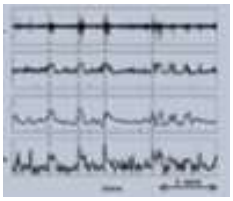
termis

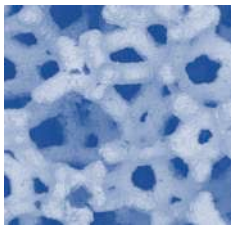
BIOtech
Biomedical Technologies

UNIVERSITY OF TRENTO - Italy
Department of Industrial Engineering

Seminars Series
2020-2021







REMIX
Horizon 2020 European Union Funding for Research & Innovation
MSCA-RISE 2019 GA 778078

Board:

Antonella Motta

Claudio Migliaresi

Devid Maniglio

Secretariat:

Luca Penasa
Luca.penasa.s@unitn.it

termis

New perspectives on human tissue in Tissue Engineering

Speakers:
dr. Michel Floren
dr. Reginald Stillwell
AlloSource - USA

Chair: Prof. Antonella Motta

April 07 2021 2.00-3.00 pm CET
Zoom Platform

Abstract

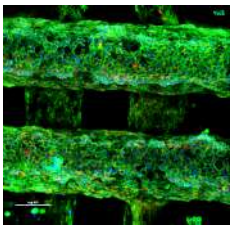
The multidisciplinary science of tissue engineering is ultimately directed toward regenerative medicine- sometimes called translational medicine. Companies & research groups that are actively engaged in developing and providing products for clinical application seek to mimic human tissue. This "tissue-mimetic" goal is often accomplished through carefully integrating biomaterials science, cell biology and nanoarchitecture combinations that result in tissue-like behavior. Utilizing human tissue as a source of bioregenerative components provides a powerful adjunct to the engineering of regenerative medicine therapies.

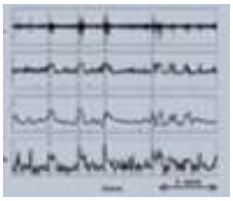
This talk will give a timely overview of the many areas of regenerative medicine and tissue engineered medical products that can benefit from the use of human tissue derived agents in tissue engineering. One area of particular interest will be the various regulatory pathways for approving and launching tissue engineered medical products. In what sometimes can seem like a labyrinthine process, experience has shown a number of ways to facilitate the approval process. The overview is from the perspective of experienced "biomedical engineering professionals who are intimately involved in recruiting & developing ideas in a broad technological spectrum. The talk will be especially interesting to anyone considering the use of human derived cells, signals and scaffolds in tissue engineering studies and product development.

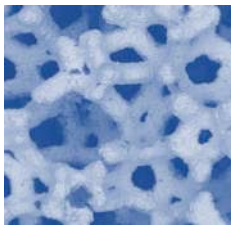
BIOtech
Biomedical Technologies

UNIVERSITY OF TRENTO - Italy
Department of Industrial Engineering

Seminars Series
2020-2021







MSCA-RISE 2019 GA 778078

Board:

Antonella Motta

Claudio Migliaresi

Devid Maniglio

Secretariat:

Luca Penasa
Luca.penasa.s@unitn.it

termis

Interested in creating a start-up? Taking spider silk research from academia to multinational corporations

Speaker: **dr Shlomzion Shen**
Seevix

Chair: Prof. Antonella Motta

April 28 2021 2.00-3.00 pm CET
Zoom Platform

Abstract

Spider silk is the toughest fiber known to man. It is strong, elastic and lightweight, as well as eco-friendly, non-toxic and biodegradable. Therefore, possible uses for spider silk are limitless. Spiders, however, are territorial and not subject to domestication. Consequently, their silk, cannot be grown in commercial quantities. To overcome this problem, scientists have attempted to create synthetic spider silk through genetic engineering. However, mass production of synthetic spider silk has proven extremely challenging and costly. Moreover, until now, the resulting fiber has shown inferior properties: it has been mechanically much weaker than native spider silk and very sensitive to its thermal and chemical environment. These inferior properties also limited the use of these fibers in different industries, and stood in the way of customization for different market applications.

Backed by a decade of research conducted at the Hebrew University in Jerusalem, Seevix was established to overcome the technology barrier and commercialize spider silk. The Company's patented technology uses genetic engineering techniques to spontaneously generate spider silk fiber with high consistency. Seevix's proprietary one-step process decreases production time and costs, and enables scalable manufacturing of man-made spider silk. The integration of Seevix's spider silk with other materials has resulted in new composite materials, enabling reinforcement of various matrices and producing meshes, films, beads and threads for products requiring toughness, strength and elasticity.

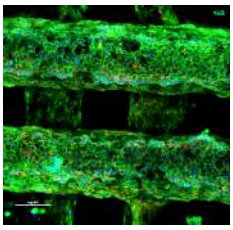
Seevix is initially aiming for high-value target markets in order to maximize profit margins and establish market dominance. We recently launched SpheroSeev, a scaffold for 3D cell culture, and we are in final development stages of our cosmetics products. Current production scale-up will allow Seevix to enter larger-quantity markets that demand high-performance specialty materials for functional textiles, sports, medical, 3D printing, automotive, aerospace and defense. We are already collaborating with market leaders in multiple industries that can introduce our biomaterial into their fields.

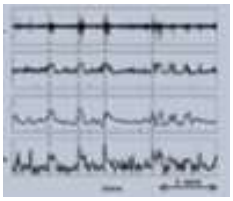
In this talk, I will share with you my personal path as a founder, starting with licensing technology from the University, founding a company, and making strategic decisions about focus, fund raising, and go-to-market strategy, up to Seevix's current engagements with multinational corporations to commercialize spider silk..

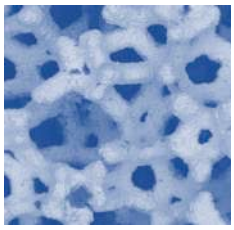
BIOtech
Biomedical Technologies

UNIVERSITY
OF TRENTO - Italy
Department of Industrial Engineering

Seminars Series
2020-2021







REMIX
Horizon 2020 European Union Funding for Research & Innovation
MSCA-RISE 2019 GA 778078

Board:

Antonella Motta

Claudio Migliaresi

Devid Maniglio

Secretariat:

Luca Penasa
Luca.penasa.s@unitn.it

termis

Is the Orthopedic Market ready for the future?
Vision, trends, and challenges

Speakers:
Eng. Daniele Venturini
dr. Monica Ramponi
Orthofix- Italy/Global

Chair: Prof. Antonella Motta

May 12 2021 2.00-3.00 pm CET
Zoom Platform

Abstract

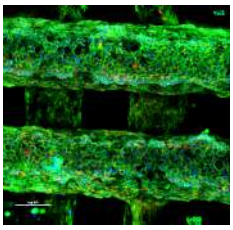
A focus on the drivers enabling new pathways of care and innovation in the musculoskeletal world.

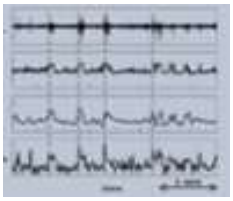
The COVID-19 pandemic effects are around us. Starting from the current situation, the presentation analyzes the key factors for a new beginning, leveraging the change as a great opportunity for designing a new, better world. COVID-19 has accelerated the digital transformation, in particular, in the healthcare environment. An overview of the trends and challenges that the stakeholders in the orthopedic field are facing daily to improve and save patients' life. Orthofix is one of the main Companies that are playing a key role in providing solutions future-proof. Speakers will also present examples about how the digital transformation is changing the Orthopedic world.

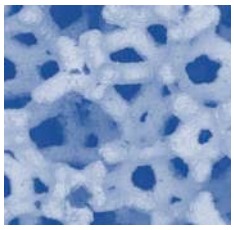
BIOtech
Biomedical Technologies

UNIVERSITY OF TRENTO - Italy
Department of Industrial Engineering

Seminars Series
2020-2021







REMIX
Horizon 2020 European Union Funding for Research & Innovation
MSCA-RISE 2019 GA 778078

From TERM to human-on-chip

Speaker: **Dr. Eva-Maria Dehne**
TissUse

Chair: Prof. Antonella Motta

May 26 2021 2.00-3.00 pm CET
Zoom Platform

Abstract

Microphysiological systems – microfluidic devices that aspire to emulate human biology in vitro – have proven to be a powerful tool in basic research and the drug development process. Their ability to host three-dimensional organ models in a controlled microenvironment under constant media perfusion enables them to create and maintain homeostasis. TissUse GmbH, a Berlin-based biotech company, has developed a unique multi-organ microphysiological system to accelerate the development of pharmaceutical, chemical, cosmetic, and personalized medical products. The increased physiological relevance of their system enhances the translatability of assay readouts and results to the human situation.

Dr Dehne will talk about the ideas and visions that led to the foundation of the company TissUse GmbH and what has been achieved since.

Board:
Antonella Motta
Claudio Migliaresi
Devid Maniglio

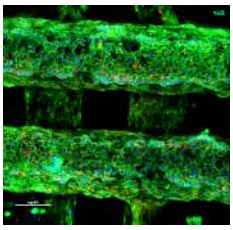
Secretariat:
Luca Penasa
Luca.penasa.s@unitn.it

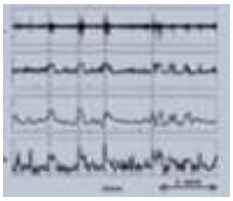
termis

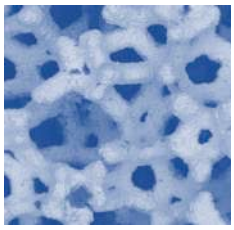
UNIVERSITÀ DI TRENTO
Department of Industrial Engineering

BIOtech
Biomedical Technologies

Seminars Series
2020-2021

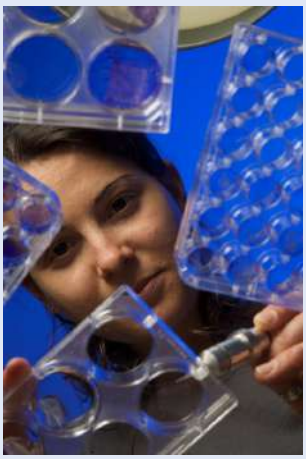






REMIX
Horizon 2020 European Union Funding for Research & Innovation
MSCA-RISE 2019 GA 778078

Formulation of nanoparticles for the selective delivery of nucleic acids to cancer cells



Speaker: **dr Annalisa Tirella**
University of Manchester

Chair: Prof. Antonella Motta

July 7 2021 2.00-3.00 pm CET
Zoom Platform

Abstract

The selective delivery of small nucleic acid sequences in target cells using nanoparticles has been proven challenging. Nanoparticles can be engineered and formulated to enhance target-ligand interactions and internalization, and promote intracellular release to effectively address the clinical need.

This talk will focus on a strategy to optimise nanoparticles design to deliver small nucleic acid sequences to cancer cells. Polycations varying in physicochemical properties were complexed with small nucleic acid sequences, and then coated with hyaluronic acid to exploit the interaction with CD44-expressing cancer cells. Nanoparticles characterisation and use of in vitro models to prove targeting and silencing will be presented in the talk, discussing design criteria and properties of nanoparticles selected for further in vivo studies.

Board:

Antonella Motta

Claudio Migliaresi

Devid Maniglio

Secretariat:

Luca Penasa
Luca.penasa.s@unitn.it

termis