



# MESI-STRAT

Systems Medicine of Metabolic-Signaling networks -  
A New Concept for Breast Cancer Patient Stratification



## Newsletter # 6 – December 2021

*The last six months have been very intense and successful for MESI-STRAT. Finally, we were able to travel and meet in person twice. In September, our annual meeting took place in Innsbruck. In November, our extended Executive Board Meeting took place in Barcelona. The productive discussions showed us how important direct exchange is and even with the best organisation online meetings cannot replace it.*

*Our new partner PD-value is working on the commercial exploitation of the computational models developed in our project. Jeroen Elassaiss-Schaap and Basak Tektemur-Altay introduce the company and its important role in MESI-STRAT in this newsletter.*

*We continue the series on our PostDocs and PhD students with Franziska Görtler from Sushma Grellscheid's group at the University of Bergen, Norway.*

### MESI-STRAT Annual and Executive Board Meetings

Almost two years passed between our last face-to-face meeting in Norway and this year's project meeting in Innsbruck. Most of the partners were able to come, for the others we established an online connection to enable everybody to participate. Our big thanks go to the team of the Grillhof in Vill, who looked after us so very well for two days and were very flexible and accommodating in the organisation, especially as we had to cancel and postpone the meeting twice.



MESI-STRAT reunion. It was a great honour for us to welcome almost all partners in Innsbruck after such a long break.

In November we were able to meet in Barcelona at the Val d'Hebron Institute of Oncology (VHIO). Normally only work package leaders and committee members are invited to the Executive Board meetings, but this year, after so many cancelled events, we invited all members. Almost 20 were able to attend. We were particularly pleased that Andreas Raue from our scientific advisory board was present at the meeting. As a modelling expert he was able to give us valuable

input for the further development of our computational models. Once again, a big thank you to Violeta Serra and her team at the VHIO for the great organisation.

### New MESI-STRAT Partner – PD-value

PD-value, a translational pharmacometrics and modeling company, joined MESI-STRAT in January 2021. The company provides commercial PK-PD and systems biology modeling, early clinical strategy consultancy, experiment design and decision enhancement support for biopharma and pharmaceutical clients. Dr Jeroen Elassaiss-Schaap, the director of PD-value, is a recognized expert in translational medicine and pharmacometric modeling. He is approaching his 20-year mark in contributing pharmaceutical industry in key roles in medium to big pharmaceutical companies. He is best known for his work on Pembrolizumab (Keytruda®), which he, in his own words, 'had the chance to see through from lead optimization to filing'. Pembrolizumab has become one of the most successful cancer drugs of recent years.

Jeroen established PD-value in 2014. Since then, he has been engaged in various projects with biotech, SME and big pharmaceutical companies, each with its own challenges and learning opportunities. PD-value supports its clients in building an optimal strategy to achieve their goals, balancing cost, speed and risk, using the tools that pharmacology and systems biology has to offer in drug discovery and early development. PD-value has a sister company, Gedmore B.V., specializing in the automation of pharmacometric modeling using an integrated database and web application. In 2019, Jeroen decided to include mathematical modeling and systems biology simulation services in PD-value's portfolio by engaging in Sys-BioSim B.V., a previous commercial member of MESI-STRAT partners. PD-value employed the key personnel of



The MESI-STRAT project has received funding from the European Union's Horizon 2020 research and innovation programme under grant agreement No 754688.

SysBioSim as of 01.01.2021 and integrated the expertise in the field of systems biology and network in the pharmaceutical and health & food ingredient industries. The company offers tailor-made modeling and bio-simulations services to comprehensively address its clients' research needs in accelerating and improving drug development. PD-value focuses on signaling and metabolic pathway modeling in the systems biology field.

The core tasks of PD-value in the consortium are customization of the MESI-models for drug development purposes and exploitation of the models for the pharmaceutical sector. PD-value aims to utilize its in-depth expertise and extensive network to enhance MESI-STRAT impact on drug development in the biopharmaceutical and pharmaceutical industry. The organization has contributed to commercial strategy development in the consortium since the beginning of the project. As the implementation of the commercial strategy, PD-value initiated the exploitation of the MESI-models for drug development in Q3 of 2021 via engaging in dialogue with the pharmaceutical industry players. The utilization of MESI-models by the pharmaceutical industry will contribute to the improvement of the breast cancer drug development process, support the pharmaceutical sector in bringing better therapies and drugs to the market and improve the lives of breast cancer patients and their families.

PD-value has a team of modelers with diverse backgrounds, including clinical pharmacology, biomedical sciences, physics and applied mathematics. The team works on projects in immuno-oncology antibodies, new chemical and other drug entities in major disease areas such as oncology, neuroscience, metabolic and endocrine diseases. PD-value modelers work closely with client teams in industry and academic partners alike while also enjoying a collaborative environment within the company. The team puts their expertise to fruition and extracts more value out of clients' data, contributing to decision making in drug development and the improvement of patients' lives, always with a focus on great science.

**Franziska Görtler, PhD**  
Post Doctoral Researcher  
University of Bergen, Norway

"I want to do something meaningful in life!" has always been my goal. So after my studies in mathematics and physics, I applied for a PhD position in the group of Rainer Spang

at the Chair of Statistical Bioinformatics at the University of Regensburg. I acquired necessary knowledge in genomics and expanded my knowledge in the natural sciences and in programming. This enables the translation of biologically motivated problems into algorithms and their solution. It is fascinating how general strategies and methods can be adapted to research questions from different disciplines.

In my doctoral thesis I developed an algorithm for digital tissue deconvolution. This algorithm makes the determination of the genes and their weighting that best predict the immune cell content in a bulk RNASeq measurement possible.



*Franziska Görtler PhD  
PostDoc at the University of Bergen,  
Norway*

Now, I am a PostDoc in the group of Sushma Grellscheid at the Computational Biology Unit in Bergen, Norway. I support my research group and MESI-STRAT in the processing and analysis of measurement data and the mathematical interpretation of results. I am also continuing the project of my doctoral thesis. The aim is to determine the gene signature for different pathways that allows the best prediction of pathway activity. For now, I focus on the mTOR pathway. This pathway is disturbed in many diseases such as cancer or Alzheimer's disease. A simple method for determining mTOR activity would enable easier early detection, better therapy adaptation and simpler therapy monitoring, especially in the field of cancer research.

I am very happy to be part of the MESI-STRAT consortium and to work with researchers from many different departments in different countries.

Visit [www.mesi-strat.eu](http://www.mesi-strat.eu) to learn more about our consortium  
and follow us on twitter [@MesiStrat](https://twitter.com/MesiStrat) for the latest news of our project!

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