



MESI-STRAT

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



Newsletter No. 8 – December 2022

As announced in our last newsletter the University of Innsbruck hosted the ISGSB2022 conference in September. Over 70 scientists of the international systems biology community gathered to discuss their latest results and new approaches.

The week started with an internal MESI-STRAT board meeting and the Young-ISGSB symposium (YSGSB). The YSGSB creates a platform for young scientists to learn and discuss. The topic of this year was the interdisciplinary nature of systems biology and how to facilitate the exchange between different fields.

Continuing our series of portraying the PhD students and PostDocs of MESI-STRAT, Laia Monserrat, who works in the group of Violeta Serra at the Vall d'Hebron Institute in Barcelona, presents herself.

ISGSB Conference in Innsbruck

From 19 to 23 of September the University of Innsbruck hosted the ISGSB2022 Conference. The *International Study Group for Systems Biology (ISGSB)* includes a number of international researchers interested in advancing the biological sciences through exploring the interplay between theory and empirical experiments.

This year's conference had a special focus on systems medicine, signaling and metabolism, the fields at the core of MESI-STRAT. Many presentations addressed cancer, tryptophan and NAD metabolism, or model development. A special thank you goes to the members of our international advisory board Gerburg Wulf (Beth Israel Deaconess Medical Center Boston) and Hans V. Westerhoff (University of Amsterdam) who joined our conference and gave inspiring talks.



The participants of the ISGSB2022 and the amazing view during our conference dinner.

Most MESI-STRAT partners attended the conference and we started the week with an internal Executive Board meeting to discuss the remaining tasks of the project and to make a clear timeline for the final 12 months. In addition, we discussed our exploitation strategy and how it will continue beyond the end of the project.

We would like to thank the ISGSB board, especially Ines Heiland, for their effort which made this conference possible and all participants for their contributions to a wonderful week full of exciting discussions.

YSGSB Meeting in Innsbruck

More than 30 junior scientists (master students, PhD students and Post Docs) from all over the world (from South Africa to Norway and from India to the UK) met on the first day of the conference for a special symposium. The YSGSB (Young International Study Group for System Biology) meeting was organized by Cecilia Barile and Anna-Sophia Egger, two PhD students from Innsbruck, to give aspiring scientists the opportunity to meet in an open and informal setting and to share ideas among each other to facilitate future collaborations.

Systems biology is a very interdisciplinary field and requires scientists with different backgrounds to come together. A challenge in many exchanges is to find a common "language" as modellers, experimentalists and clinical scientists often have different perspectives which need to be combined for successful collaboration. In interactive workshops, the group exchanged experiences and explained the underlying concepts of their disciplines to each other to find common ground and reduce future misunderstandings. We thank Martina Prugger and Alexander Heberle for giving their perspective as a modeller and an experimentalist and for leading the workshops.



We are very grateful for the insightful presentations of Ulla Ohlms and Doris Schmitt, two members from the directorate of the patient organisation and MESI-STRAT partner PATH. They both have been active as patient representatives and advocates for patient empowerment for many years. They gave a highly informative and interesting lecture on the upcoming role of patient advocates in communicating medical information to patients, particularly in regards to clinical studies. Ulla and Doris also graciously took the time to answer the many questions participants had, resulting in a lively discussion after the talks. Many participants had not been in direct exchange with patients before and the perspectives and ample clinical knowledge of Ulla and Doris were deeply inspiring for everyone.

Laia Monserrat, MSc.

PhD student, University of Barcelona, Spain



Laia Monserrat, MSc.,
PhD student at the University of Barcelona, Spain

My journey in the scientific world started when I was a teenager, thanks to a high school teacher. Since I was a child, I have always been interested in science, but she transmitted her passion for biology. A couple of years later, someone close to me had cancer and the whole process marked a before and after in my life. Since then, I decided to study cancer and I started a bachelor's degree in Biomedical Science at the University of Barcelona.

During my bachelor's degree, I learned more about molecular biology and my interest in cancer kept growing.

During my thesis, I studied the molecular mechanisms involved in liver cancer progression. However, I wanted to be involved in patient-based research, so I enrolled in a master's degree on Translational Biomedical Research. Then, I joined Dr. Violeta Serra's lab at Vall d'Hebron Institute of Oncology and I discovered the world of translational medicine working with patient-derived xenografts (PDX) models to uncover the potential of new therapies and to discover new biomarkers of resistance that could help clinicians to improve patients' lives. During this time, I performed my master thesis about mechanisms of resistance to CDK4/6-inhibitors in breast cancer.

The idea of being able to generate laboratory models from tumour patients fascinated me from the beginning. Therefore, I decided to continue my studies in Dr. Serra's lab. Currently, I am a PhD student and I am working on new therapeutical strategies for treating breast cancer patients using PDX models. The aim of my research is to identify a biomarker of response to an androgen-receptor modulator as an alternative to the endocrine therapy. I was grateful to join MESI-STRAT consortium due to our shared interest to understand the effects of the endocrine therapy in breast cancer.

I feel lucky to be part of the MESI-STRAT consortium and to be able to share our investigations and learn from researchers from different countries.

MESI-STRAT Survey

In the past months we were able to get almost hundred additional answers for our survey. This is very helpful to create meaningful results and to analyse the reasons for the differences we see between cancer patients and the general population. However, more responses would further deepen these findings and help to tailor our communication to the needs of patients. If you have not yet taken part, we look forward to your participation and would be grateful if you would share the link with your friends.

Our results will be published in our last MESI-STRAT newsletter June/July 2023.



Link: [Survey in English](#)

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