



Danish National Research Foundation
Center for Functional Genomics and Tissue Plasticity
ATLAS

Highlights Summary 2022

The overarching aim of the Center for Functional Genomics and Tissue Plasticity (ATLAS) is to obtain detailed mechanistic understanding of how the many different cell types in the liver and adipose tissue change their functions during obesity and regression. This is important, as obesity-induced dysfunction in these two tissues can lead to life-threatening diseases such as cardiovascular diseases and diabetes. Our long-term ambition is that this insight can be used to improve diagnosis and treatment of obesity comorbidities.

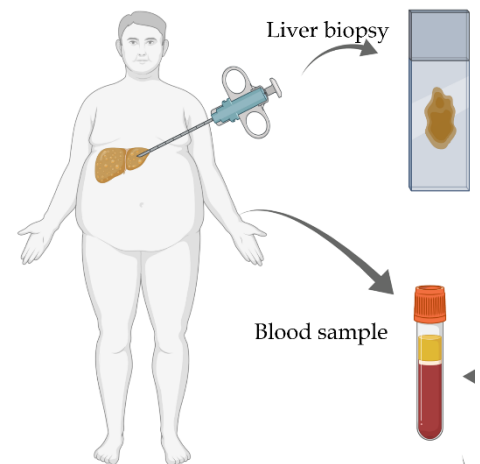


Development and submission of the ATLAS 2.0 research program

The most important task in 2022 has been the development of the research plans for ATLAS 2.0 and to prepare a strong proposal for submission to the Danish National Research Foundation in September. The bottom-up process was initiated already at the Annual Meeting in 2020. Following a second brainstorming session in March 2022, we formulated the main new goals for the research program and identified work packages (WPs) and WP leaders. At the Annual Meeting in June 2022, we had WP-specific workshops to further develop the plans for the WPs. Thus, ATLAS 2.0 is built on a team effort involving all center members. Following a thorough evaluations process and interview, we have now been invited to initiate the contract negotiations with for the extension with DNRF. We look very much forward to initiate the new research projects and the organizational changes.

Discovery of TREM2 as a diagnostic biomarker for severe fatty liver disease

In July 2022, we published a landmark paper demonstrating that plasma levels of the protein TREM2 can be used as a biomarker of severe fatty liver disease, nonalcoholic steatohepatitis (NASH). This represents a major translational discovery, as there are no good biomarkers for NASH, meaning that diagnosis requires a liver biopsy. We have filed a patent application for the use of TREM2 in NASH diagnosis, and funds from Innovation Fund Denmark has been secured to develop a diagnostic assay. We have several other NASH biomarkers in the pipeline, including the protein, SMOC2, for which we have also recently filed a patent application.



Future Leaders Award grant to Søren Fisker Schmidt

Asst. Professor Søren Fisker Schmidt has received a prestigious career grant “Future Leaders Award” of 5 Mill DKK from the European Foundation for the Study of Diabetes and the Novo Nordisk Foundation. This grant has enabled him to expand his independent research group. The new project “Adipose tissue macrophages in diabetes: regulatory mechanisms and therapeutic potential” supported by the grant synergizes very well with his ongoing ATLAS research.



5th Annual ATLAS Meeting at Gl. Avernæs:

In June 2022 ATLAS convened at the beautiful Hotel Sinatur, Gl. Avernæs for our Annual Meeting, held conjunct with the Annual Meeting of Center for Adipocyte Signaling (ADIPOSIGN). All ATLAS members and several members of the Scientific Advisory Board were present in person. In addition to the thorough review of project status, we devoted ample time for workshops on the proposed WPs of ATLAS 2.0 as well as the priorities for the next year. The overlap with the Annual Meeting of ADIPOSIGN was again a huge success offering the opportunity to exchange ideas and progress between the centers, e.g., during poster session and informal “park session” workshops on selected research topics. Furthermore, both centers benefitted from the talks by external speakers and social activities.