Human Systems Immunology Meets Precision Medicine

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ABSTRACT
Systems approaches based on the generation of high throughput data have shaped several fields of the life and medical sciences over the last two decades. With most major chronic diseases of an aging population being driven by inflammation, the understanding of the immune system will play a critical role for the development of precision medicine outside the cancer field. Professor Schultze will try to come up with a definition of human systems immunology and provide examples illustrating how the generation of large human data assessing immune cell functions can be a starting point for understanding the immune system and at the same time can lead to clinically relevant information for diagnosing or stratifying patient populations based on their immune responses. Professor Schultze will also touch upon efforts to bring single cell omics technologies to clinical cohorts further improving resolution when characterising the complex processes within chronic inflammatory diseases.

ABOUT THE PRESENTER
Joachim L. Schultze is Professor for Genomics & Immunoregulation at the LIMES Institute (University of Bonn, UBO) and the Director of the PRECISE Platform for Single Cell Genomics and Epigenomics (DZNE / UBO). He is coordinating the German DFG-funded NGS centers, he is the speaker of the West German Genome Center, a speaker of the Excellence Cluster ImmunoSensation, an expert in macrophage biology working at the interphase of immunology, genomics and bioinformatics and was first applying memory driven computing to genomics. Professor Schultze brings single cell -omics to the clinics (eg. for patients with Alzheimer’s disease, chronic obstructive pulmonary disease, lung cancer or HIV). Within the European consortium LifeTime he is one of the WP7 leaders on the industry and innovation strategy.

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