## Challenges and novel applications for biomarkers and new technologies: Positioning diabetes research in the 4th industrial revolution

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A strong correlation exists between type 2 diabetes mellitus (T2DM) and cardiovascular disease (CVD), with CVD and the presence of atherosclerosis being the prevailing cause of morbidity and mortality in diabetic populations. T2DM is joined by different coagulopathies, including atypical clot development or amyloid fibrin, and the existence of dysregulated inflammatory particles, and blood platelets, including blood cells are especially vulnerable, to these dysregulated inflammatory cytokines. Although T2DM is arguably, the most studied condition, the prevalence has now reached staggering levels, with a steady increase also in developing countries. Researchers therefore need to look at novel technologies and biomarkers to address the T2DM pandemic. We should therefore actively participate and use technologies from the 4th industrial revolution, which is characterized by a fusion of technologies that is blurring the lines between the digital, physical and biological spheres, collectively referred to as cyber-physical systems. In this talk, I will discuss novel biomarkers, as well as point-of-care devices for early identification of T2DM, the use of big machine learning to find disease, inflection points, leading to the ultimate goal in T2DM, that of both personalized and precision medicine.

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