



**Title :** Desirability functions: a case study to select promising candidates for optimal cytokines release

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**Short bio :**

Alexandra Laugerotte has joined the Non-Clinical Efficacy & Safety (NCES) team in Frankfurt site as Non-Clinical Efficacy and Safety (NCES) statistician expert leader on September 1<sup>st</sup> 2022. She leads Immunology & Inflammation research projects at advanced stage of research as NCES statistician and provides local statistical support.

Alexandra graduated from the Université Paris V – Université Paris XI - Paris in 2008 with a Master's degree in Public Health, specialization in Biostatistics. She started her career at Therapeutic Initiatives, University of British Columbia (UBC) – Vancouver as clinical research assistant. In 2014 she joined IPSEN innovation, Les Ulis, France as a Statistician M&S - Oncology, Neurosciences & Rare diseases and was promoted to the role of a Statistician Modelling & Non-clinical – Oncology, Neurosciences & Rare Diseases in 2020.



**Short summary of presentation :**

The desirability function approach is a common technique for optimizing multiple response variables simultaneously. It can be used to rank drug candidates based on several characteristic variables. The drug candidates can be any type of entity of interest.

DesiRED (Desirability Ranking to Ease Decision), a tool developed internally at SANOFI, applies customizable desirability functions to rank antibodies based on some specifications. It provides individual desirability for each parameter and calculates global desirability via weighting of the individual desirability functions. It includes a random forest imputation for missing data and provides an interactive visualization to easily compare properties of different candidates.

The app is designed to be user-friendly and summarizes all necessary information in a final report that has interactive functionalities.

An example of application on a cytokine release assay will be fully presented.