

**Speaker: Rumen Manolov (University of Barcelona)**

**Title: “Single-case experimental designs (and) data analysis: One size does not fit all”**

**Abstract:**

Single-case experimental designs (SCEDs) allow obtaining empirical evidence regarding what intervention works for whom, under what circumstances. According to whether the target behavior is reversible or not and according to the degree to which immediate intervention effects are expected, different SCEDs can be used: multiple-baseline, reversal, alternating treatments, changing criterion, as well as hybrid designs involving combinations of the four main types.

The analysis of SCED data entails several challenges, such as: (a) the presence of autocorrelation in the data; (b) multiple data features on which the analysis can focus: level, trend, variability, immediacy, overlap, and consistency; (c) increasing number of data analytical options (more than twenty), some of which remain largely untested, whereas others have been object of multiple studies whose results are not easily summarized in a couple of sentences; (d) the divide between the typical data analytic approach of applied researchers (used to analyzing data visually with none or few visual aids and preferring simple quantifications such as nonoverlap indices) and the statistical developments in the field (such as multilevel modeling, standardized mean difference taking autocorrelation into account, or randomization tests); (e) the distinction between formative and summative analysis, and its relation to the possibility of preregistration; and (f) the absence of most of the data analytical options from typical software such as SPSS.

In this ocean of challenges and possibilities, applied researchers, however, are not alone. There are reporting guidelines, methodology quality appraisal tools (rubrics), articles illustrating the use of different analytical techniques, articles providing suggestions that can help choosing among data analytic techniques, and freely available user-friendly websites implementing many data analytical options and graphically representing the data. The current talk, and slides that accompany it, provide links to many of these resources.