Learning good research practices the hard way: a reproducibility study in the class room

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The reproducibility crisis is closely connected to a variety of statistical concepts (e.g. p-hacking, publication bias, HARKing). As university teachers we have an obligation to teach our students the skills and tools to make their work reproducible. In the course “Analysis of Longitudinal Data” we try to accomplish that whilst also teaching the skills usually taught in the course: working with longitudinal data, visualization and modeling (in particular GEEs and mixed effect models). We selected 11 papers from the multidisciplinary open access journal PLOS ONE which deal with longitudinal data, have the data openly available and use GEEs or mixed models. The students try to reproduce the results shown in the papers and get input from us on the methodology and the tools to use. In this talk I will present the current status of the course, how we organize the course and I will share - from the perspective of the teacher - why I believe that this course is highly effective in teaching both good research practices and working with longitudinal data.