Contribution ID: **18** Type: **Workshops**

Scientific documentation as complete as humanly possible: An introduction to Problem Arcs

Friday 8 December 2023 15:00 (1h 30m)

Science builds on prior knowledge. Or at least it should. Unfortunately, like so much in science, we are never taught how to document the science we do so that others can build on it. We describe our efforts in research papers with the primary goal of 'getting past reviewers', and not necessarily to make the science we did understandable, and thus reproducible by others*. In this workshop we introduce the concept of the Problem Arc as the core of scientific documentation. A problem arc is comprised of all steps involved in addressing any of the myriad tasks involved in completing a scientific process, from identifying a problem, to postulating possible solutions, to selecting a solution and applying it, to evaluating our results, to considering the problem solved. We show how science is by definition a non-linear sequence of problem solving events, and use our evidence-based understanding of how humans organize and understand sequences of events to teach how best to document the science we do for comprehension and reproducibility.

*Others includes ourselves 6 months after completing a scientific process. The fact is that our memories are terrible when it comes to remembering what we did in enough detail to reproduce it.

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