**Pain points in reproducible research**

* **People and Skills**
  + **Need:** Better education of scientists in more reproducibility-robust tools.
  + **Need:** Widely used tools should be more reproducible so that the common denominator tool does not undermine reproducibility.
* **Dependencies, Build Systems, and Packaging**
  + **Need:** Improved configuration and build systems for portably packaging software, data, and analysis workflows.
* **Hardware Access**
  + **Need:** Reproducibility at scale for high performance computing.
  + **Need:** Standardized hardware configurations and experimental procedures for limited-availability experimental apparatuses.
* **Testing**
  + **Need:** Better understanding of why researchers don't respond to the delayed incentives of unit testing as a practice.
  + **Need:** Norms encouraging greater adoption of unit testing irrespective of programming language.
* **Publishing**
  + **Need:** Broader community adoption around publication formats that allow parallel editing (i.e. any plain text markup language that can be version-controlled in a distributed manner.). Tools such as Overleaf and SageMathCloud are a beginning toward making LaTeX more approachable, but greater adoption is needed.
* **Data Versioning**
  + **Need:** Greater scientific adoption of new industry-led tools and platforms for data storage, versioning, and management.
* **Time and Incentives**
  + **Need:** Increased community recognition of the benefits of reproducibility.
  + **Need:** Incentive systems where reproducibility is not only self-incentivizing.
* **Data restrictions**
  + **Need:** Standards around scrubbed and representational data so that analysis can be investigated separate from restricted data sets.

Source: https://www.practicereproducibleresearch.org/core-chapters/5-lessons.html