

# Software Citation

*boldly going where no reference  
has gone before*

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On behalf of the FORCE11 Software Citation Implementation WG

**SC19 BoF on Software Engineering and Reuse in Modeling,  
Simulation and Data Analytics for Science and Engineering**

## Software Citation: The Undiscovered Reference

- Software appears in publications in very inconsistent ways
  - Often not cited at all but only mentioned
  - Citations are generally to a publication, not software itself
- Information often lost in journal editorial processes
- Yet software is integral to research and it is important that it is recognized along with the people that develop it
- See also: FAIR

Mention Type	Count (n=286)	Percentage
Cite to publication	105	37%
Cite to users manual	6	2%
Cite to name or website	15	5%
Instrument-like	53	19%
URL in text	13	5%
In-text name only	90	31%
Not even name	4	1%

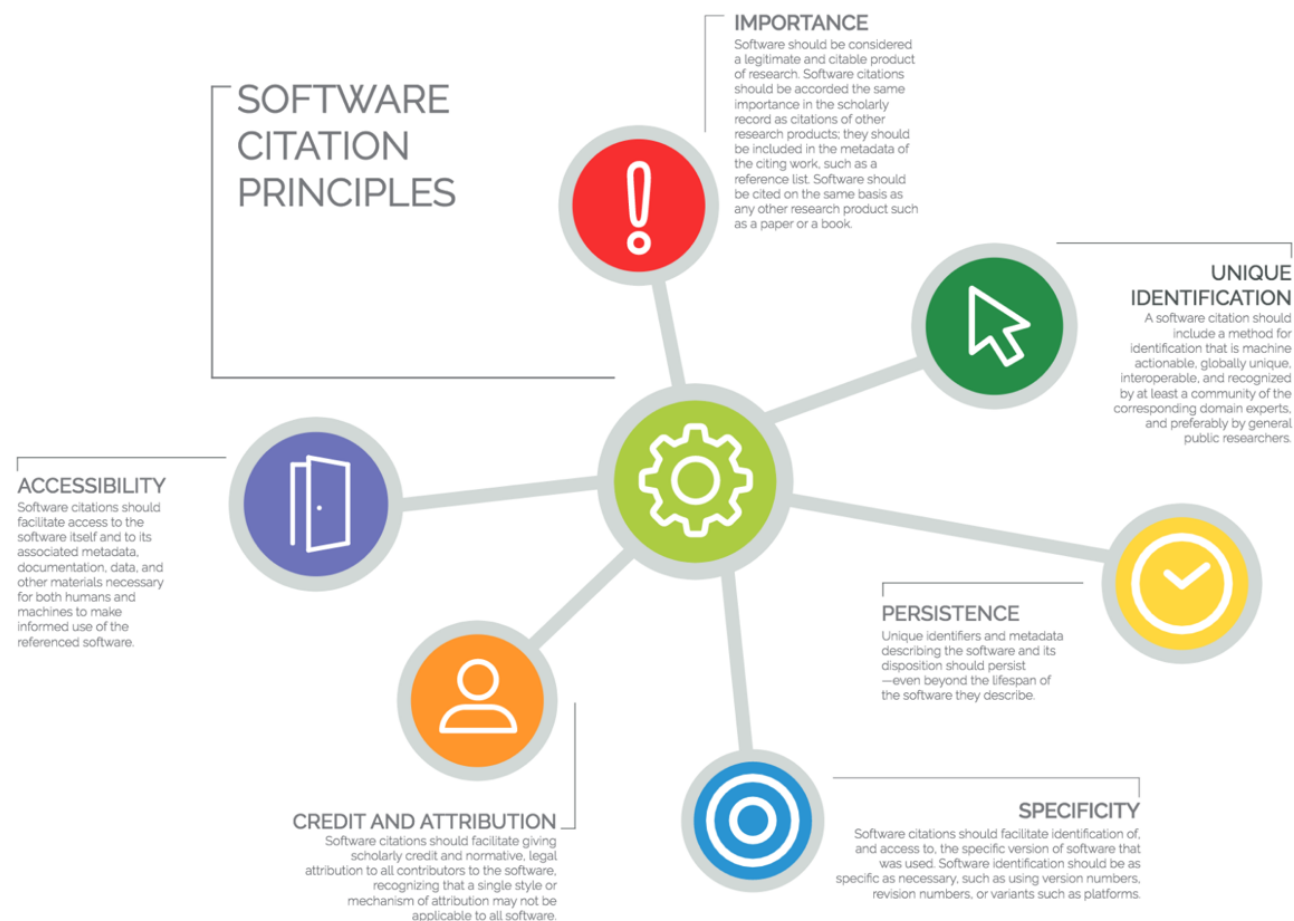
J. Howison and J. Bullard. Software in the scientific literature: Problems with seeing, finding, and using software mentioned in the biology literature. *Journal of the Association for Information Science and Technology*, 2015. <http://dx.doi.org/10.1002/asi.23538>.

You can't reuse if you don't  
know it exists  
You won't get reuse if there's  
no incentive

# Software Citation: The Search for Principles

- Software Citation Principles developed under auspices of FORCE11 starting in 2015
- Researchers, Developers, Publishers, Repository Managers, Librarians
- Started with Data Citation Principles and reviewed existing community practices
- Published in 2016
  - Smith AM, Katz DS, Niemeyer KE, FORCE11 Software Citation Working Group. (2016) Software Citation Principles. PeerJ Computer Science 2:e86. DOI: 10.7717/peerj-cs.86 and <https://www.force11.org/software-citation-principles>

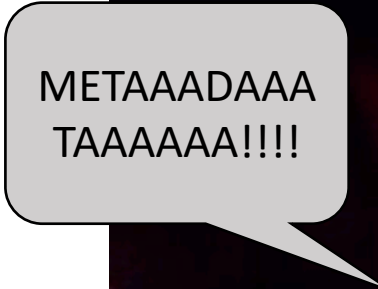
Software is a critical part of modern research...



... yet there is little support for its acknowledgement and citation

# Software Citation: The Wrath of Metadata

- From principles to adoption is a long and difficult journey
- Software Citation Implementation Challenges
  - <https://arxiv.org/abs/1905.08674>
- Software Citation Checklists for authors and developers
  - [10.5281/zenodo.3479199](https://zenodo.org/record/3479199)
  - [10.5281/zenodo.3482769](https://zenodo.org/record/3482769)
- CodeMeta Taskforce
- Software Registries
- Publishers
- Tools



METAAADAAA  
TAAAAA!!!!



Image © Paramount Pictures

- Make it *simple*, make it *common*
- Get involved:
  - <https://github.com/force11/force11-sciwg>