The Geosciences Paper of the Future Initiative was created by the EarthCube OntoSoft project and its Early Career Advisory Committee formed by 30 geoscientists in different disciplines in order to disseminate best practices for reproducible publications, open science, and digital scholarship. The initiative consists of three major efforts: 1) the compilation of best practices from a variety of community organizations (e.g., ESIP, RDA), scientific societies (e.g., AGU, AAAS, CODATA), curators (e.g., IEDA, NSIDC), and publishers (Nature, Science); 2) the dissemination of best practices through training sessions at major scientific conferences (e.g., AGU, GSA, ASLO, CEDAR); and research institutions (e.g., WHOI, USGS); 3) the publication of a special issue of the AGU Earth and Space Science journal and Geoscience Papers of the Future containing articles that illustrate how to apply these best practices in different geosciences areas, with another special issue of the journal Geophysics under way.

The best practices for a Geoscience Paper of the Future include recommendations to make not only data but also all software accessible through publication in a public repository, including metadata, a license for reuse, and citable using a unique and persistent identifier. The best practices also address how to document provenance and methods by explicitly describing related computations and outcomes in a workflow sketch, a formal workflow, or a provenance record, possibly with a persistent identifier. There are many benefits to scientists from learning these best practices: increase citations for their papers, get credit for all their research products, augment their vitae with data and software that they have written, write compelling data management plans for funding proposals, comply with new funder and journal requirements, and practice open and reproducible science.

More details can be found at [http://www.scientificpaperofthefuture.org/gpf](http://www.scientificpaperofthefuture.org/gpf) and [http://www.ontosoft.org](http://www.ontosoft.org).

The training materials are openly available, including a summary checklist for authors, and show how to manage their scholarly identity, reputation, and impact throughout their careers. The Geoscience Papers of the Future published to date not only serve as exemplars of how to implement best practices, but also expose limitations of existing cyberinfrastructure capabilities to support scientists in their work.