

# OPEN SCIENCE FOR GOVERNMENT

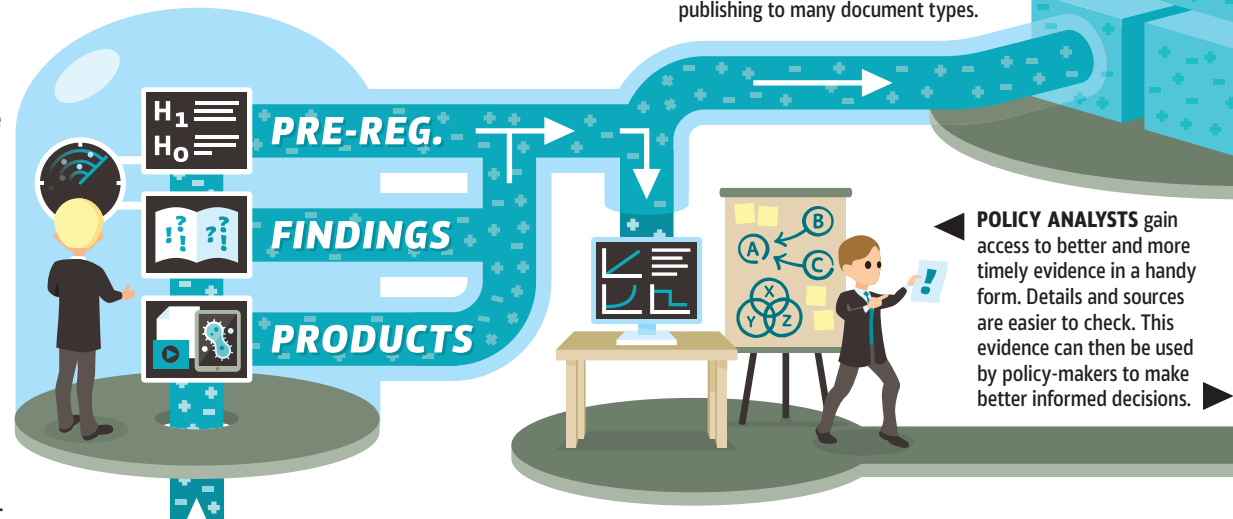
BY PETER STOYKO



Scientific inquiry requires transparency. Yet most scientific studies remain hidden within institutions and behind paywalls, causing research to go underutilized and under-appreciated. Change is happening thanks to technology, renewed interest in scientific first principles, and a realization that openness enables powerful forms of collaboration. How would a system of **open science** work for government scientists?

## OPEN FINDINGS

Both positive and negative findings are published for all to see. Experimental hypotheses are pre-registered to prevent opportunistic misinterpretations of data in confirmatory studies. The field of **KNOWLEDGE MOBILIZATION** puts findings in the hands of the right users at the right times in the most useful forms of information product—products designed around users to be more engaging.



Government **FUNDED RESEARCH** is published openly, not locked in proprietary journals. Regulators can insist that private research in the public interest (such as drug trials) be published openly too. As open platforms catch on, the incentives to publish openly increase in academia in a virtuous cycle.

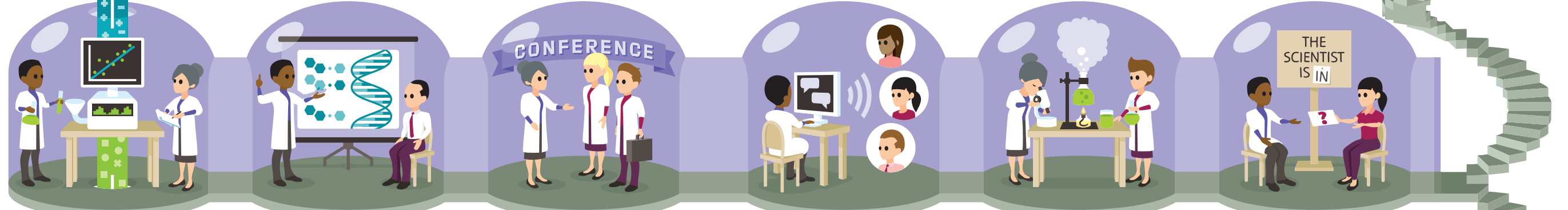


**DEMOCRATIC SCRUTINY** works best when citizens, activists, and journalists can judge the accounts of decision-makers using the latest, most relevant evidence. Policy proposals benefit from exposure to a wider array of scientific studies and external analysis.

More comprehensive findings are accessible in a timely fashion throughout the scientific community, including **CITIZEN SCIENTISTS** who hitherto struggle to keep up with their respective disciplines. **OPEN TEXTBOOKS** and other information products teach new generations of would-be scientists.

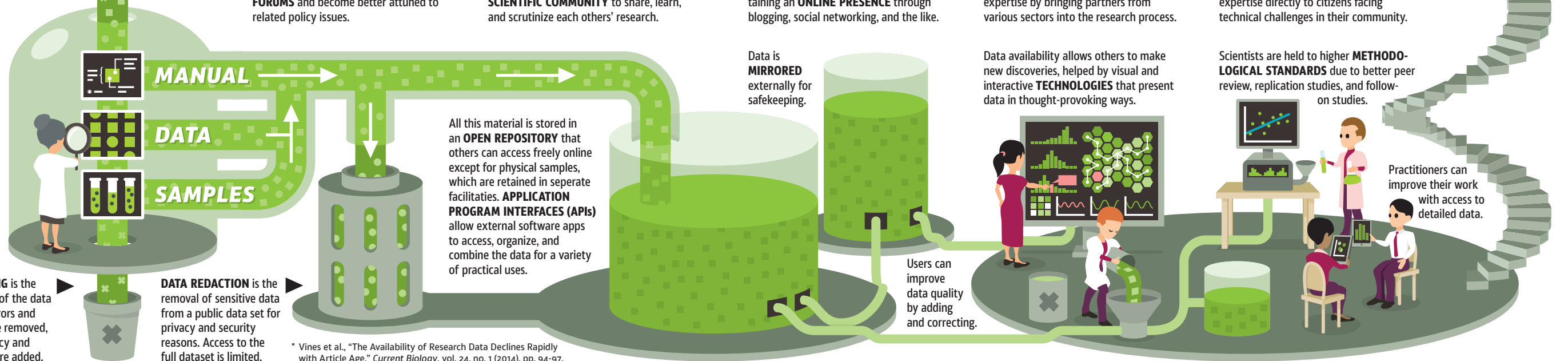
## OPEN ENGAGEMENT

Research does not always speak for itself. In open science, scientists discuss the technicalities and implications of their work with fellow professionals and the public at large. That engagement makes scientists more responsive to social and policy needs.



## OPEN DATA

Scientific data is under-used unless shared and maintained. Most data is lost after a few decades due to neglect.\* **OPEN-DATA STEWARDSHIP** makes data easy to find, access, use, and expand. Making the raw numbers and original samples available is only part of the process. Full documentation of the data, models, and methods is required.



\* Vines et al., "The Availability of Research Data Declines Rapidly with Article Age," *Current Biology*, vol. 24, no. 1 (2014), pp. 94-97.