

Survival of the Fittest: Evolution as Applied to the Future of Scientific Publishing

MARCIA MCNUTT
PRESIDENT



NATIONAL ACADEMY OF SCIENCES

Goal for publishers, editors,
authors, readers, funders:
Foster a scientific publishing
system that is strong and resilient



What promotes resilient ecosystems?

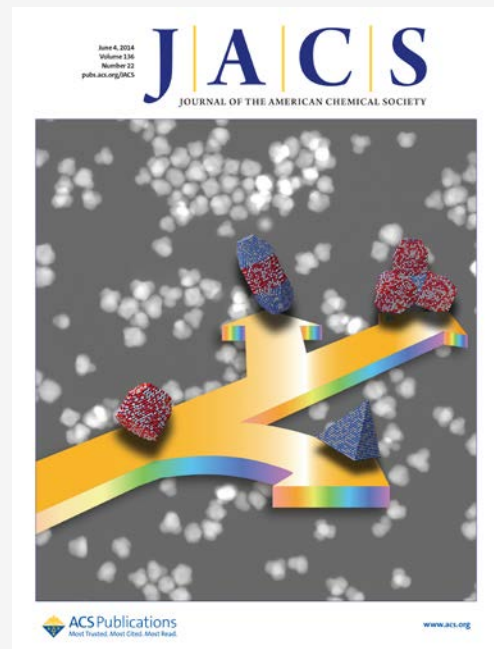
Attributes such as diversity,
redundancy, stable structure



Diversity

- Boosts productivity and promotes stability





Redundancy

- Avoid single points of failure



Stable Structure

- Avoids broken links in the food web



Promoting Stability in Publishing

- All stakeholders execute roles with integrity in the publishing enterprise
- Agreed-upon rules and norms promote stability in that enterprise



REPORT

Fostering Integrity in Research

- Journals: Improve and update authorship policies to respond to threats to integrity
- Authors: Disclose roles and contributions
- Policies should thwart detrimental research practices such as ghost authors, honorary authors
- A Research Integrity Advisory Board can become an organizational focus for best practices and standards

Journals:

- Provide standards for authorship
- List responsibilities for corresponding authors
- Adopt CRediT and include in metadata
- Require ORCIDs

Institutions:

- Have regular conversations on criteria for co-authorship



New Results

Transparency In Authors' Contributions And Responsibilities To Promote Integrity In Scientific Publication

 Marcia McNutt,  Monica Bradford,  Jeffrey Drazen,  R. Brooks Hanson,  Bob Howard,  Kathleen Hall Jamieson,  Veronique Kiermer,  Michael Magoulias,  Emilie Marcus,  Barbara Kline Pope,  Randy Schekman,  Sowmya Swaminathan,  Peter Stang,  Inder Verma

doi: <https://doi.org/10.1101/140228>

This article is a preprint and has not been peer-reviewed [what does this mean?].

Abstract

Info/History

Metrics

 Preview PDF

Abstract

In keeping with the growing movement in scientific publishing toward transparency in data and methods, we argue that the names of authors accompanying journal articles should provide insight into who is responsible for which contributions, a process should exist to confirm that the list is complete, clearly articulated standards should establish whether and when the contributions of an individual justify authorship credit, and those involved in the generation of scientific

Why implement?

- The community is demanding more transparency, but authorship practices lag behind
- Trend toward more authors per paper makes it more difficult to sort out contributions
- Authorship conventions vary among scientific disciplines, and no indication of which convention is being used
- Opportunity to capture contributions in journal metadata can facilitate independent, verifiable author statements of contributions for proposals, job applications



**It is not the strongest
species that survive,
nor the most intelligent,
but the ones most
responsive to change.**

- Charles Darwin