

## Geologic Research, Science, and the Publication Process

Lawrence D. Meinert\*

Editor, *Economic Geology*; U.S. Geological Survey, Mineral Resources Program, Reston, VA, USA

\*E-mail, Lmeinert@usgs.gov

A meeting such as this SEG Conference focuses on the presentation of geological research concerning ore deposits. Such scholarly discourse is the proper outcome of science and generally precedes the formal publication of the study results in journals such as *Nature*, *Science*, *Economic Geology*, *Mineralium Deposita*, or *Ore Geology Reviews*, as well as numerous national, regional, and specialist (geochemical, geophysical, and remote sensing) publications. For younger scientists the publication process can appear mysterious, and even veteran scientists with dozens or even hundreds of publications under their belts may not fully understand the intricacies of impact factors and citation measures such as H-factors. To further complicate matters, many recent studies have suggested that there is not a clear relationship between some of these measures, especially impact factors, and what they presume to assess—quality. Using data from these studies and my own experience as editor of *Economic Geology* (2008–present) and *Mineralium Deposita* (2003–2008), I will discuss the publication process as it relates to writing, reviewing, and editing manuscripts as well as the changing landscape of impact factors, journal rankings, open access, and electronic publishing (wikis, blogs, Twitter, and other forms of social media).

For first-time authors, the factors that increase the likelihood of favorable reviews and timely publication include 1) an abstract that summarizes the results of the study, 2) a clear statement of the problem in the introduction, 3) length—shorter is almost always better, 4) organization—you are telling a story and conclusions need to be separated from observations and presentation of data, and 5) critical review and revision prior to submission, with input by all authors. In contrast, factors that decrease the likelihood of publication include 1) submitting similar manuscripts to multiple journals, 2) splitting a study into multiple papers (least publishable units) such that the individual manuscripts cannot stand on their own (if you have to cite your other papers more than a few times, there is a problem), 3) publishing just data such as fluid inclusions, radiometric dates, or isotopes without a geologic context, and 4) making sweeping metallogenic or tectonic interpretations before the individual ore deposits are carefully described.

Some impact factors and other attempts to measure “quality” are not universally appropriate. Those with a short citation window of a year or two may work for disciplines where a paper may be “old news” within a year but may poorly or even inversely correlate with quality in disciplines like geology, and especially economic geology, where fieldwork takes time and the description of a classic ore deposit or fossil locality is literally timeless. Further distortion occurs in countries where authors are paid to publish articles in certain journals or, even worse, are required to cite publications by supervisors or colleagues with the intention of inflating impact factors of individual authors and journals.