

# Keynote Address: Perhaps in My Next Life

## SPEAKER:

**Mary-Claire King, PhD**

Professor of Genome Sciences  
and Medicine  
University of Washington  
Seattle, WA

## REPORTER:

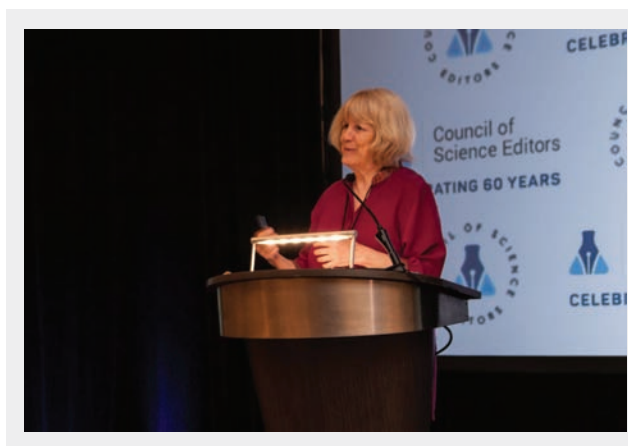
**Peter J. Olson, ELS**

Senior Copyediting Coordinator  
Sheridan Journal Services  
Waterbury, VT

As children, many of us are fairly certain about what we want to be when we grow up. Some of us follow our original path, whereas others forsake it for a very different one—and in still other cases, those paths merge fortuitously somewhere along the way. Such has been the odyssey of this year's Keynote speaker, who from the very beginning of her speech made clear her admiration for the path chosen by her audience.

Dr. Mary-Claire King, a human geneticist renowned for her groundbreaking identification of the breast cancer gene *BRCA1*, once considered an alternate niche for herself. Her natural love of language as a child blossomed further during her years as an undergraduate at Carleton College, and although she was also drawn to the field of mathematics, she recognized that she was “simply not talented enough to be a serious mathematician.” It took a transformative experience at the University of California, Berkeley, to propel her away from journalism toward the field of genetics; yet her two passions became inextricably intertwined years later when her work in the lab led to a life of frequent and extensive collaboration with science editors. It is this union that has since afforded her the insight to identify what she termed “three classes of challenges”—and the resultant responsibilities—shared by scientists and journal editors today.

Dr. King framed these challenges within two basic truths that govern them. First, she praised her audience of scientific journal editors as being “among the most powerful players in the scientific enterprise today,” encouraging them to celebrate their indispensable role in the endeavor to publish valuable, high-quality scientific research. By extension, she emphasized the importance of peer review as a measuring tool for advancement, particularly given that senior faculty on promotion committees may come from fields far distant from those of the candidate. Second, she marked the rise of online publishing as a revolutionary era in the history of the written word that rivals the invention of the printing press and has challenged the idea of what constitutes content. In her assessment, the repercussions of this technological revolution—which have been devastating for mainstream forms of publication—have been mitigated in the world of



Mary-Claire King delivering the Keynote Address.

scientific journals by the central tenets of truth and quality that are universally held by scientists and science editors and are enacted through exhaustive experimentation and review. In other words: Although the tools used to convey truth and maintain quality are being altered dramatically, it is the scientific process itself that has allowed the idea of content to remain unchanged.

The first of Dr. King's three classes of challenges comprise those driven by the technological revolution—or, more specifically, the unintended consequences of open access publishing. Dr. King made it clear that she does not see open access as an inherently problematic venture; in fact, she considers it an acceptable and sustainable business model. Rather, she characterized the challenges as having been “spawned” by the open access movement. Her greatest concern is rooted in the proliferation of fake—or predatory—journals, many of which resemble legitimate journals so similarly as to make them indistinguishable from one another by eager and earnest authors. Although she acknowledged that general awareness of predatory journals is relatively high within the scientific community, she urged vigilance nonetheless, suggesting that all journals should be asked to provide their impact factor to aspiring authors and senior faculty members. She couched this suggestion in a good-natured swipe (“I never in a thousand years thought I would say anything good about impact factors!”) but added that the absence of an impact factor should raise suspicion, with the caveat that some legitimate journals may simply not be registered in the NCBI database (including new and promising journals that are based in Africa).

CONTINUED

---

Another inadvertent and concerning by-product of open access that Dr. King addressed pertained to “bioRxiv and its kin”—that is, online platforms designed to host unpublished and unreviewed content for the purpose of sharing and honing scientific information. Her misgivings are multifaceted. First and foremost, she said, bioRxiv and other sites like it are based on a model used by mathematicians that is not necessarily translatable to the life sciences; whereas the field of mathematics lends itself to general agreement about the correct interpretation of data, there is a much greater degree of subjectivity in the life sciences that makes public discussion about the research problematic. This format is complicated further by the fact that the posted data can be altered without notice or transparency—and in a visceral expression of concern, Dr. King lamented that these sites are not immune to online bullying, which is particularly devastating to younger, more vulnerable authors. With this in mind, she affirmed the many journals that have adopted a “journal-curated archival system” in which content is posted with the disclaimer “currently under review,” and any changes and comments are controlled by the journal to protect authors from potential abuse.

Dr. King’s second class of challenges included three innate aspects of scientific publishing that have been exacerbated by the technological revolution. First, as the standard time frame of submission to publication continues to shorten, the corresponding level of thoughtfulness allotted for the preparation of data has also changed radically. Gone are the days of Charles Darwin (one of Dr. King’s personal heroes), whose masterwork *On the Origin of the Species* was published 20 years after he collected his data—so how are we to address the current expectations surrounding speed of publication? Dr. King recommended taking the requisite time for the first review of a paper but being more stringent about the second review, perhaps by establishing a firm, 2-week turnaround policy for the latter. Second—and to her great dismay—she has observed an overall decline of competence in writing, perhaps influenced by

the culture of text messaging, including some manuscripts that have copied text messages verbatim. She pleaded with her audience to preview papers for competent writing and to send incomprehensible papers back to authors for refinement before accepting them for publication. Finally, Dr. King proposed that focus groups be assembled to help clean up journal websites, which as a rule are “growing like weeds” and “not being pruned.” The average journal website is fraught with internal inconsistencies, she said, and the best way to identify them is to have a third party attempt to simulate the journal’s publication protocol.

To introduce the third and final class of challenges, Dr. King posed the question, “Should we adapt our expectations of content as a result of the technological revolution?” Her answer was an emphatic “Yes,” followed by a motion that we should in fact raise them. Given the wide spectrum of technological tools at our disposal, she said, it is more than reasonable for journal editors to expect higher quality and less formulaic material despite the current trend away from these principles. She then discussed several positive adaptations for journal editors to consider, including (1) the inclusion of front matter pieces, which are often written by professional journalists and therefore bring an added component of quality of writing; (2) publishing invited memoirs written by prominent scientists; (3) theme issues; and (4) training junior journal staff to be more responsive to authors.

Mary-Claire King’s passion and enthusiasm for the world of scientific publishing and her palpable admiration of scientific journal editors served as a welcome and timely rallying cry from a powerful advocate and ally of the industry. Her love of language permeated a speech that was equal parts insightful, humorous, and urgent, solidifying her status as an ambassador for the critical union between the fields of science and journalism—a union that she herself has embodied throughout an astonishing career, regardless of whether she thought such a thing would happen to her in this life.