

OMICS 2.0: An Accelerator for Global Science, Systems Medicine and Responsible Innovation

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“The world is not a solid continent of facts sprinkled by a few lakes of uncertainties, but a vast ocean of uncertainties speckled by a few islands of calibrated and stabilized forms.”

Bruno Latour (2005)

OMICS 2.0: An Editorial Analysis

WE LIVE IN A GLOBALLY INTERCONNECTED and digital age, illustrated by publication venues proliferating across the planet, both online and in print. A benefit for the democratic opening up of knowledge, we also know it well that quality and scholarly scientific journals are few and far between. *OMICS: A Journal of Integrative Biology* is the first and original OMICS Journal, and remains the only multi-disciplinary peer-reviewed platform that covers all omics sciences to date. For over a decade, OMICS has catapulted systems sciences such as nutrigenomics, ecogenomics, pharmacogenomics, vaccinomics, agrigenomics, theranostics, and personalized medicine to the epicenter of 21st century science.

Our editorial scope is truly post-genomics, broad and integrative. We have named this new vision of life sciences innovation “OMICS 2.0.” This includes omics technologies and their *applications* in diverse and complementary global settings, such as medicine, ecology, agriculture, nutrition, and personalized medicine. Additionally, OMICS 2.0 advances a scientific culture and responsible innovation driven by systems-oriented thinking, meta-analysis, and independent social science analyses that help bridge the current gaps between omics technologies and society that cannot be addressed by biology research alone (Birch and Tyfield, 2013; Dove and Özdemir, 2015; Funtowicz and Ravetz, 1993; Özdemir et al., 2014; 2015).

“One Health” is another timely concept with relevance to OMICS 2.0 and 21st century medicine that views human, animal, environmental, plant, microbial, ecosystem, and planet health in a holistic manner. No doubt, these diverse strands of life sciences knowledge are more relevant and interdependent today than we have come to believe in the past.

The concept behind “One Health” has existed for millennia. From Hippocrates’ “On Airs, Waters, and Places” (circa 400 BC) to the Human Microbiome Project, we have

observed and learned how the active interaction and relationship between the human host and her/his biological, social, and political environment and ecology is indisputable, and thus should be evaluated as a whole to achieve better standards in diagnosis, prevention, and treatment of human diseases (Dandara et al., 2014; ElRabaiky et al., 2014; Guston, 2015; Latour, 2001; Thoreau and Delvenne, 2012; van Oudheusden, 2014; Vayena, 2014).

This past year, our readership continued to grow globally. I recognize that scholarship knows no geographical boundaries and welcome your manuscripts from around the world, both original research articles and scholarly reviews. In addition to omics technologies, manuscripts concerning integrative biology and one health are also welcome for peer-review in the Journal in the spirit of the OMICS 2.0 vision. I encourage you to consider this Journal as an essential forum for your cutting edge research and scholarship.

Past editorial content in OMICS has addressed hot topics in all existing omics fields and has pioneered innovative concepts such as an Essential Diagnostics List to advance global precision medicine, population pharmacogenomics, CRISPR-Cas9 Based Genome Engineering, reports on the establishment of the “Human Proteome Draft”, strategies for multi-omics clinical data integration, cancer biomarkers, next generation sequencing (NGS) biotechnology applications, among other important work such as meta-analysis of the commercially available nutrigenomics tests (Pavlidis et al., 2015).

As part of the editorial horizon-scanning mandate, we captured, early on, emerging omics frontiers and new ideas such as the Acoustic Detection of NMR Experiments in metabolomics, pharmacogenovigilance for post-marketing monitoring of drugs, citizen science for Big Data, and state of the art interviews, for example, on omics technologies in brain surgery (Rutka et al., 2014). These fields of integrative biology will become increasingly important for both human and ecosystem health in the coming years.

As a life scientist with a firm commitment to the social sciences, I hasten to add that although the 20th century science has been characterized by an emphasis on new technology, the current 21st century is being reshaped by a fascinating proximity of life sciences and social sciences (Özdemir 2014). As observed by Bruno Latour in the introductory quote above, uncertainties associated with new formations such as emerging biotechnologies are not simply matters to be conquered by science; they are also opportunities to develop new understandings on contingency of alleged innovations and scientific truths on their intertwined biological, social, and political contexts (Dove and Özdemir, 2015; Kickbusch, 2015; Latour, 2005; Thoreau and Delvenne, 2012).

OMICS: A Journal of Integrative Biology will respond to these sociotechnical prospects and challenges of 21st century OMICS systems sciences and healthcare with upcoming special issues that feature the continuum of biotechnology research and social sciences that are increasingly inseparable.

Looking ahead to 2016, we will maintain our editorial rigor and respond in real-time to current advances in the field worldwide. As Editor-in-Chief, I thank the Editorial Board, authors, reviewers, and our publisher, Mary Ann Liebert, Inc. for their strong contributions, commitment, and advocacy that have contributed to the Journal's success. I am confident that with growing global support and your scholarly ideas, *OMICS* will continue to be an indispensable and widely respected equitable forum for transdisciplinary cultivation of post-genomics scholarship.

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