The changing world of modern cell biology

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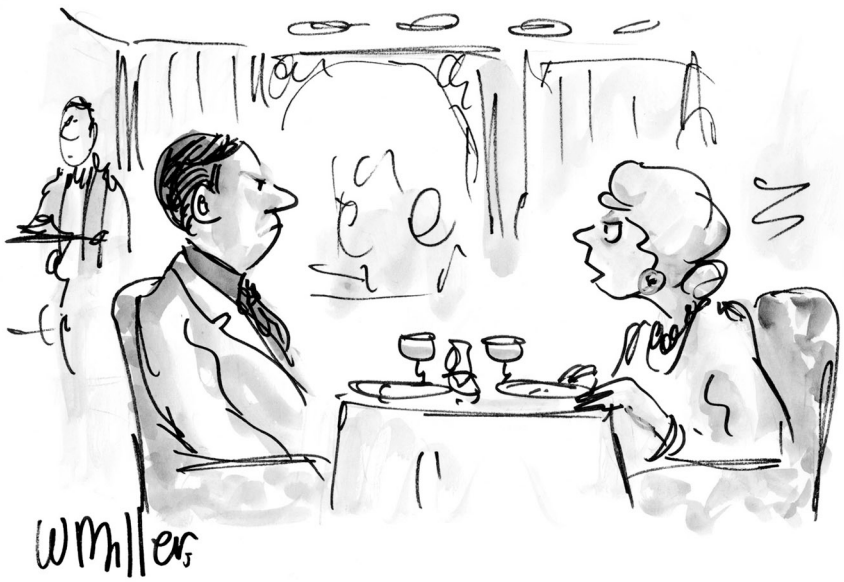
Change is always ambiguous. There is the enticing prospect of novelty and better times ahead, but at the same time the concern of losing the good of the past. It is with these sentiments that I take over as the Editor-in-Chief from Ira Mellman who for a decade has cleverly and effectively lead the *JCB*. During this time he directed and oversaw an extensive modernization of the journal and guided it through dramatic changes in the publishing world. Ira lead the journal with unyielding dedication and enthusiasm and we in the cell biology community must thank him profoundly for his service. It is his work, together with the invaluable contribution of the best editorial board and the most dedicated professional editorial staff in the scientific publishing business, that allows me to now take over the stewardship of the *JCB* with a tremendous sense of excitement and determination to continue and expand the *JCB's* role as the leading journal in the cell biology community and as a trendsetter in the rapidly changing world of modern cell biology.



"I'm not trying to change you—I'm trying to enhance you."

As we look over the landscape of today's cell biology we see a tantalizing vista. Cell biology is no longer the descriptive science that two centuries ago laid the foundation for most of modern biology and biomedicine by establishing the concept of cells and starting the seemingly never-ending endeavor of trying to understand how they work. Nor is current cell biology the budding molecular science that led in 1955 to the foundation of the *JCB* and that has since catalyzed the growth of one of the central disciplines in modern biology. Today, cell biology is a blend of advanced cytology, molecular biology, genetics, biochemistry, computation, and engineering. How we do cell biology, what topics we investigate, what methods we use and even how we communicate our findings is changing at a rapid pace. Over the decades, the *JCB* has not only recorded these dramatic changes, but has been at their forefront and in many cased defined them.

Modern cell biology is more diverse than ever. Areas that were strictly the domain of molecular biologists and biochemists, such as gene expression or signal transduction, have grown into prominent cell biological fields. Other topics that were studied mostly macroscopically, such as stem cell biology, development, and differentiation, are now tackled at a molecular, cell biological level. Cell biology is also dramatically impacting medicine as we are increasingly in a position to rapidly unravel cellular disease mechanisms based on a vast base of existing knowledge of fundamental cell biology. The *JCB* has a long tradition of reporting on established cell biological fields and keeps pace with new areas of cell biology. This is achieved by maintaining an up-to-date editorial board, and our current board is the most diversified in our history. Undeniably, one of the most important roles of the *JCB* is to foster nascent areas of cell biology by publishing exploratory and pioneering papers and reviews in emerging fields. We are in an ideal position to recognize and support such novel directions because our editorial board, unlike the professional editors of commercial journals, consists

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The Rockefeller University Press $30.00
J. Cell Biol. Vol. 184 No. 1 11–12
www.jcb.org/cgi/doi/10.1083/jcb.200812072

of leaders in their fields who are immersed in the science as it happens and are intimately aware of new trends as they occur. As the impact of cell biology on other fields increases, our efforts to fully cover all areas of modern cell biology will intensify and the scope of the *JCB* will continue to broaden.

The driving force behind much of the recent boom in cell biology is technological development. Microscopy, the traditional workhorse tool of cell biologists, has been developed to a sophistication that allows probing the interior workings of the cell in unprecedented ways. In combination with genomics, proteomics, unbiased high-throughput screens, and computational methods, the arsenal of cell biological tools has revolutionized modern biology. Realizing the pivotal role technology plays in cell biology, the *JCB* has always reported on technological innovations and their applications to cell biology. To facilitate the publication of more of these studies, we are in the process of exploring novel formats for reporting technology-driven advances and for making protocols and methods readily available.

Much in science is about communication—starting with the inspiration from a casual conversation with a colleague in the hallway, to critically analyzing results, to the endless discussions about data interpretation. The primary task of any scientific journal is to communicate results to a wide audience and to do so with integrity. We at the *JCB* have always taken this responsibility very seriously by cultivating thorough, fair, and efficient peer review by the best minds in the field. More recently, we have set new standards in data integrity by developing new approaches to image data quality control that are now being adopted throughout the scientific publishing community (Rossner and Yamada, 2004). The *JCB* was also instrumental in redrawing the scientific publishing map by supporting policies that bring scientific information to all (Hill and Rossner, 2008). These efforts to enhance scientific communication are ongoing. We have, for example, recently launched the *JCB DataViewer*, a novel, browser-based image-viewing tool that allows unprecedented access and transparency to image data (Hill, 2008). As part of our efforts to catalyze discussion and communication we will soon roll out a new, more interactive website, which will include novel features including emerging web-based communication, networking, and multi-media technology. Our recently launched *biobytes* podcasts, *biosights* video clips, and *biowrites* blog are a first step in that direction.

Publishing a scientific journal is in many ways a service to the community. But increasingly we must balance our duties to provide this service with commercial interests. Commercial journals spring up all around us at an amazing pace and they often use somewhat different standards in judging work, such as the very subjective timeliness and popular appeal, at times undercutting integrity and focusing on sales appeal. It is important that we do not lose sight of the most important mission of a scientific journal—to communicate novel, insightful, and sometimes provocative work based on rigorous data. The *JCB* has a long tradition of doing exactly that and I, with the help of our editorial board and staff, will make it my priority to continue to retain the good of the past and to fully explore the novelty of the ever-changing fascinating landscape of modern cell biology.

References

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