Advancing the Vision: New PubMed Indexing, Creative Commons Licensing, and December Highlights

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In the two years since the American Association for the Advancement of Science (AAAS) published the *Vision and Change in Undergraduate Biology Education: A Call to Action* report, the national momentum to transform undergraduate biology education has driven the *Journal of Microbiology & Biology Education (JMBE)*'s growth in readership and authorship. Since January 2010, the Journal has more than doubled its registered users and overall submissions have increased by nearly 40%. International presence on the Journal's Editorial Board is currently at 13%, thanks to Research Editor Kathy M. Takayama's work to incorporate biology educators on a global scale. The American Society for Microbiology (ASM)'s faculty training programs—such as the ASM/JGI Genomic Sciences Programs and the ASM/NSF Biology Scholars Program—connect scholars with the Editorial Board and expose them to *JMBE*'s open access content. After they train and/or present at the annual ASM Conference for Undergraduate Educators (ASMCUE), our readers are poised to submit their work to *JMBE*. In 2012, 37% of published *JMBE* authors are alumni of these ASM programs.

With a larger, well-informed authorship, *JMBE*'s published content leads conversations on the changes in biology education research. The May 2012 issue of *JMBE* acknowledged ASM's curriculum reform efforts in Susan Merkel's article "The Development of Curricular Guidelines for Introductory Microbiology that Focus on Understanding." Authors such as Gail S. Begley are taking the AAAS call to action seriously and are transforming teaching as described in "Vision and Change-ing A First-Year Biology Classroom." In late 2012, *JMBE* was selected for indexing in PubMed Central. PubMed is a free, online database of more than 22 million citations listed in the literature from MEDLINE, science journals, and online books. In addition, *JMBE* is implementing a Creative Commons licensing model.

PubMed Central indexing and creative commons licensing will ensure a more expansive dissemination of the Journal's biology education articles.

As Editor-in-Chief, I continue to be amazed at the many examples of "learning" processes that are shared through *JMBE*'s five sections. This is a good thing, even exciting. Evaluating the many concepts and techniques offered by *JMBE* authors certainly helps me to view educational goals from outside my personal biases and broaden my understanding of good pedagogy. In the Research section, Carol A. Hurney demonstrates the power of "learner-centered teaching" in her article on how giving more control of the classroom to students enhances their learning experience. Mark A. Gallo and Vincent J. Rinaldo remind us that scientific literacy evolves as one learns to discriminate between definitions and concepts, ideas and data, standard methods and critical experiments. Joyce A. Shaw uses her Perspectives article to discuss the effectiveness of using small-group debates to actively engage students. These articles suggest that while critical thinking can be taught, it stands the test of time when owned intrinsically. Moreover, Diane C. Darland and Jeffrey S. Carmichael reinforce this in their article on how responsibility for a longer-term literacy project, such as their use of a primary literature critique, reinforces student ownership of the foundational underpinnings of science. All these authors help set a stage for the wealth of other teaching and learning methods found in the Tips and Tools and Reviews sections of this issue. Lastly, Regina Linder reminds us in her article that evaluating established educational practices is healthy. Testing alternative methods to stimulate student learning might lead to insights beyond the classroom. It may also suggest methods to enhance our own learning.

I hope this issue encourages you to challenge existing methods and to create new learning processes of your own!

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