

EDITORIAL

The Plant Cell: 20 Years Young

Imagine a time when you actually had to go to a library to read journals and spend hours copying articles and/or mailing out reprint postcards to keep up-to-date with new scientific advances. Imagine a time when you submitted your latest research results for publication and you actually had to send in your article by mail along with a big package containing original figures that were hand-drawn, photographed, and glued onto poster board. Imagine publishing an article in an era when there was no personal computer, no programs to digitize manuscripts or generate figures, no internet to upload manuscripts and manage the review and proofing steps, and no e-mail for rapid correspondence between you and the editors. Imagine using mail, fax machines, and a landline telephone to handle all of the submission and editorial processes required for publishing your article. And imagine a time when it took 6 months to a year, or more, from the time of submission to the time when your article could be read in a print journal that was delivered by surface mail.

Those who are in their 20s, 30s, and 40s and read and publish papers in *The Plant Cell* cannot imagine such a time. Indeed, most of us cannot remember when we didn't carry an iPhone or Blackberry, manage the publication process of our articles from anywhere in the world, keep up-to-date with the most recent scientific advances by e-mail alerts, internet searches, and RSS feeds, publish articles in digital journals that never passed through a printing press, and read the newest research articles and reviews online as soon as they are accepted for publication.

Enter the world of 1989, a year of major change, both for the plant publishing world, science, and the world at large. The Iron Curtain came down, the Berlin Wall crumbled, the Cold War ended with the establishment of democratic governments in Eastern Europe, and the National Center for Human Genome Research was established under the direction of James Watson to coordinate and spearhead the United States' efforts in sequencing the human genome. The age of genomics was a dream on the horizon that was just beginning to hatch. It was also the year, 20 years ago this month, that *The Plant Cell* published its first volume. *The Plant Cell* entered the plant research world in January of 1989 with a full-color cover of a cotyledon-specific *in situ* hybridization pattern from John Harada's laboratory at UC Davis. Enter the era of spatial and temporal programs of plant gene expression—one gene at a time! It was also the year that marked the beginning of an explosion in *Arabidopsis* research and its ascendancy as the model organism for plant research, due, in part, to pioneering research from Ralph Quatrano's group at DuPont that showed how T-DNA could be used to tag and isolate genes that control important plant processes [Feldmann et al. (1989). *Science* **243**: 1351–1354]. Indeed, many groundbreaking

discoveries in plant biology using T-DNA-tagged *Arabidopsis* lines would be published in *The Plant Cell* in the decades to follow.

The origins of *The Plant Cell* began 3 years earlier, in 1986, when Charles Arntzen, then President of the American Society of Plant Physiologists (ASPP, now ASPB), asked me to help provide the vision and direction for a new journal that the Society wanted to publish in the area of plant cell and molecular biology. This took me by surprise because I had not yet published an article in a plant-oriented journal and was not active in ASPP, although I was a member. At that time, the major plant journals, *Plant Physiology*, *Planta*, and *Plant Molecular Biology*, were publishing articles in the “old-school” mode with long publication times, black-and-white figures, and, in some cases (e.g., *Plant Physiology*), managing the entire process out of the editor's academic office, as was the custom for society-based journals during that period. By contrast, the trend-setting journals, *Cell*, *Science*, and *Nature*, had centralized editorial offices, professional managing editors, rapid publication times, and published only the most outstanding articles in their areas. I recommended to a committee, consisting of myself, Larry Vanderhoef (now Chancellor of UC Davis), and the late Mel Josephs (then ASPP Executive Director), that ASPP create a journal, called *The Plant Cell*, that would (1) attract the highest-impact articles in the area of plant cell, molecular, and developmental biology (broadly construed), (2) publish articles as rapidly as possible with the highest quality publication standards, including four-color figures and a full-color cover, (3) create a centralized management system to facilitate the publication process, (4) deliver the journal rapidly and inexpensively to scientists around the world, and (5) include reviews, commentaries, editorials, relevant news, and special issues dedicated to timely topics to make the journal appealing to a wide readership. Most critically, my most important recommendation, as radical as it was at the time (and it was radical!), was to raise the bar of excellence for publishing plant research articles to a new level and set publication standards, both in scientific impact and production quality, that would last well into the future. Simply put, publish only the most exciting plant research articles rapidly and do it elegantly!

It took some arm-twisting to convince me to be the Founding Editor of *The Plant Cell*, 30 months of planning and organizing, and the dedication of an extraordinary group of individuals to publish the first issue of *The Plant Cell* in January, 1989. Looking at a recent issue of *The Plant Cell*, I am reminded vividly of what was accomplished during that time period, and I am amazed that I had the energy to lead the effort. I had a large research group and several grants and was teaching two undergraduate courses to life science majors and nonscience students. Then again, I was not approaching my 65th birthday as I am today! I designed the cover and format for *The Plant Cell*; visited the publisher and printer (then

Waverly Press) to ensure that the article, figures, and printing were of the highest quality; helped create a centralized editorial office at ASPP headquarters and attract professionals to run the daily operations of the journal; set up an editorial board and supplied members of the board with fax machines and FedEx accounts to make decisions on articles as fast as possible; created an operating budget; and, most importantly, convinced authors to publish their articles in *The Plant Cell*. I also established a review process, which was new for the plant world at that time, that allowed editorial board members to send only the highest-impact articles out for review. This, of course, was very controversial and did not endear me to authors because of the high rejection rates, but was one of the major factors helping to establish *The Plant Cell* as *the* place to publish the best plant research in our area of focus. This strategy was validated 2 years later, in 1991, when the first impact factors were published for *The Plant Cell*, indicating that it was the highest ranked plant journal and was in the top 10 of all biology-oriented journals, including *Cell*, *Science*, *Nature*, and *PNAS*. The rest is history.

Today, *The Plant Cell* still remains the highest ranked plant journal, a remarkable record that has been in place continuously for the past 20 years. As I had hoped, the journal has evolved in many ways, keeping pace with all of the novel advances in both the scientific and publishing worlds. I am proud that the vision for *The Plant Cell* that was put in place almost a generation ago is still alive, healthy, and thriving. It is also clear from my current vantage point that the publication bar set many years ago by *The Plant Cell* has had a major influence on other plant-oriented journals, such as *Plant Physiology*, *The Plant Journal*, and others.

No effort to create a journal such as *The Plant Cell* and maintain its excellence over a generation of time could be successful without the creativity, energy, and support of many individuals,

most of whom are too numerous to name individually in this short essay, as well as a succession of dedicated Editors, Editorial Boards, and supporting Editorial Staff who work behind the scenes to make it all happen. Nevertheless, it is important for me to thank and mention some of the pioneers who helped create *The Plant Cell* during its first years and get the journal off to a successful start: Mel Josephs, Jody (Carlson) Moore (Founding ASPP Publications Director), Annette Kessler (Founding Editorial Manager who is still at her desk to this day), Jack Shannon (ASPP Publications Committee Chair), and, of course, Judy Grollman (Founding Managing Editor). Judy's energy, talents, and dedication pushed everyone, including authors, editorial board members, and me, to turn around the highest quality articles possible at warp speed, many times in only 60 days! I was also grateful to have a distinguished Founding Editorial Board, including my close friends Brian Larkins and Ralph Quatrano, Founding Associate Editors (and subsequent Editors), who ran political cover for me with ASPP when I went over budget and/or irritated too many authors by rejecting their articles; Machi Dilworth and Becky Chasan, Founding News and Views Editors; and Rob Horsch, Nam-Hai Chua, Sam Levings, and Bill Timberlake, the Founding Coeditors who provided outstanding scientific leadership in their respective fields. Finally, my heartfelt thanks go out to those of you in the plant world for publishing your most exciting research discoveries in *The Plant Cell* because you believe that it is *the* place to publish your best work. Without your support over the past 20 years, the success of *The Plant Cell* would not have been achieved.

Happy Birthday, *The Plant Cell*, 20 years young.

Robert B. Goldberg
Founding Editor

The original promotional brochure announcing the debut of The Plant Cell has been reproduced on the following pages. It previewed what the cover and pages of The Plant Cell would look like when it was first published in January 1989. The sample cover contained a phloem-specific mRNA localization pattern from Bob Goldberg's lab at UCLA during that time period. As indicated in Bob Goldberg's editorial, the cover of Volume 1, Issue 1, was taken from an experiment by John Harada's lab at UC Davis.

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