

New ventures in scientific publication

This month's issue of *Functional Plant Biology* announces the launch of a new experimental product – a wiki on methods and protocols for environmental studies. This project is described in the following article by Lawren Sack *et al.*, 'A unique web resource for physiology, ecology and the environmental sciences: *PrometheusWiki*'. (*FPB*, 37, 687–693, 2010). The article can also be found by entering the doi (digital object identifier) 10.1071/FP10097 into the Search bar of Google.

The methods described in *PrometheusWiki* are essential tools for ecophysiologists, plant biologists and crop physiologists. They also provide the most up-to-date and reliable methods for molecular geneticists identifying quantitative trait loci for abiotic stress tolerance, and for molecular biologists using phenotypic screens for mutants, or quantifying the effect of a particular gene on a plant's response to the environment.

PrometheusWiki (Protocols, methods, explanations and updated standards Wiki) is a web-based, free-content resource project based on volunteer contributions. The idea originated in California from the perceived need to update a well used resource of ecophysiologists, affectionately known as 'the pink book': *Plant Physiological Ecology: Field Methods and Instrumentation* by Pearcy *et al.* (1989). The project was developed by a working group of the Vegetation Function Network (<http://www.vegfunction.net/>) and is supported and hosted by CSIRO PUBLISHING. The wiki is found at <http://www.publish.csiro.au/prometheuswiki>.

A wiki is a website that allows users to add and update content using their own web browser. Wikis are formed by a collaborative effort of the site visitors. The term 'wiki' comes from the Hawaiian language meaning 'fast'. Scientific communication moves fastest when we use common standards and units, and describe protocols that can be reproduced, validated and improved upon by others. The wiki technology enables contributions from research groups across the world to be quickly and easily published. The intent of this project is to create a constructive flow of expertise among groups that moves the field towards standardisation using 'best practices' and improves the efficiency of research effort by promoting communication with respect to methods and protocols.

PrometheusWiki is an ongoing project to which anybody can contribute, and it differs from a paper-based reference source in important ways. *PrometheusWiki* is continually updated, with the creation or updating of protocols on novel research areas within hours, rather than months or years as for the traditional scientific publication process.

Contributions can be made directly onto the wiki, and any off-the-record questions and comments can be made to any of the editorial board listed on the website, including myself. The Editor-in-Chief is Dr Adrienne Nicotra, from the Australian National University. The inaugural editors are drawn from North America and Australia, and over time the editorial board will be expanded or replaced by scientists from other continents.

The two main features of *PrometheusWiki* are that it is free, and it is peer reviewed. Like other wikis, it is both 'open access'

and without publication charges for authors. Uniquely, it is both open to comment and correction, as well as being editorially moderated, a feature made possible using TikiWiki software. When consensus is achieved on a given protocol, a pdf with a DOI will be created, with authors and date attributed, which then becomes a 'gold leaf standard' which itself cannot be changed (although a live version on the protocol continues to evolve). With time and the advancement of knowledge and of instrumentation, a new version of the protocol could be created in addition to the original edition.

Methods, protocols, units and standards covered by *PrometheusWiki* that are of most interest to readers of *FPB* fall in the following topics:

- Growth and architecture
- Gas exchange
- Water relations and hydraulic conductivity
- Tissue chemistry
- Soils and rhizosphere
- Imaging technologies
- Experimental treatments for abiotic stress
- Basic statistics for biologists

This month also marks the on-line publication of *Plants in Action*, an award-winning resource text for undergraduate and postgraduate scholars written by the community of the Australian Society of Plant Scientists. The first edition was published in 1999 by Macmillan Australia, and now is being republished electronically in preparation for revision. It is currently being placed on the server of the University of Queensland, under the guidance of Associate Professor Susanne Schmidt. Chapters will be updated gradually over time by the original authors and new contributors. The project's status will be shown on the website of the Australian Society of Plant Scientists (www.asps.org.au). *Plants in Action* will not be a wiki, as it will be modified only by authors and editors, but will share the common values of a wiki in being free to users, able to be periodically updated, and providing a forum for comments, new contributions, and discussions.

Plants in Action will be a source of fundamental principles and biological information that form a background to the methods published by *PrometheusWiki*. Links between the two sites will provide an unrivalled resource for researchers, teachers and students.

Digital publication of various types is fast becoming a more common form of publication than the traditional hard copy book. At least one of the large publishing houses is planning to publish 'digital text books' in which authors are able to update the contents. It may not be long before most journals publish manuscripts only on-line, and not on the printed page. This will save costs, and relieve libraries of building more shelving space.

Functional Plant Biology is pleased to support the introduction of *PrometheusWiki* to the community of plant scientists. I will personally find it extremely useful for my own research, and also in reviewing and editing papers submitted for

publication. In the words of the instigators of this innovative and exciting project, which will assure universal access to the best methodology and encourage collaboration across fields, 'PrometheusWiki will depend on your contributions and feedback on an ongoing basis. We thank you in advance for your contributions to this new resource'.

Dr Rana Munns
Editor-in-Chief
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