Phytogen March 2018

ASPS employment opportunities

18 March 2018

Hello ASPS members,

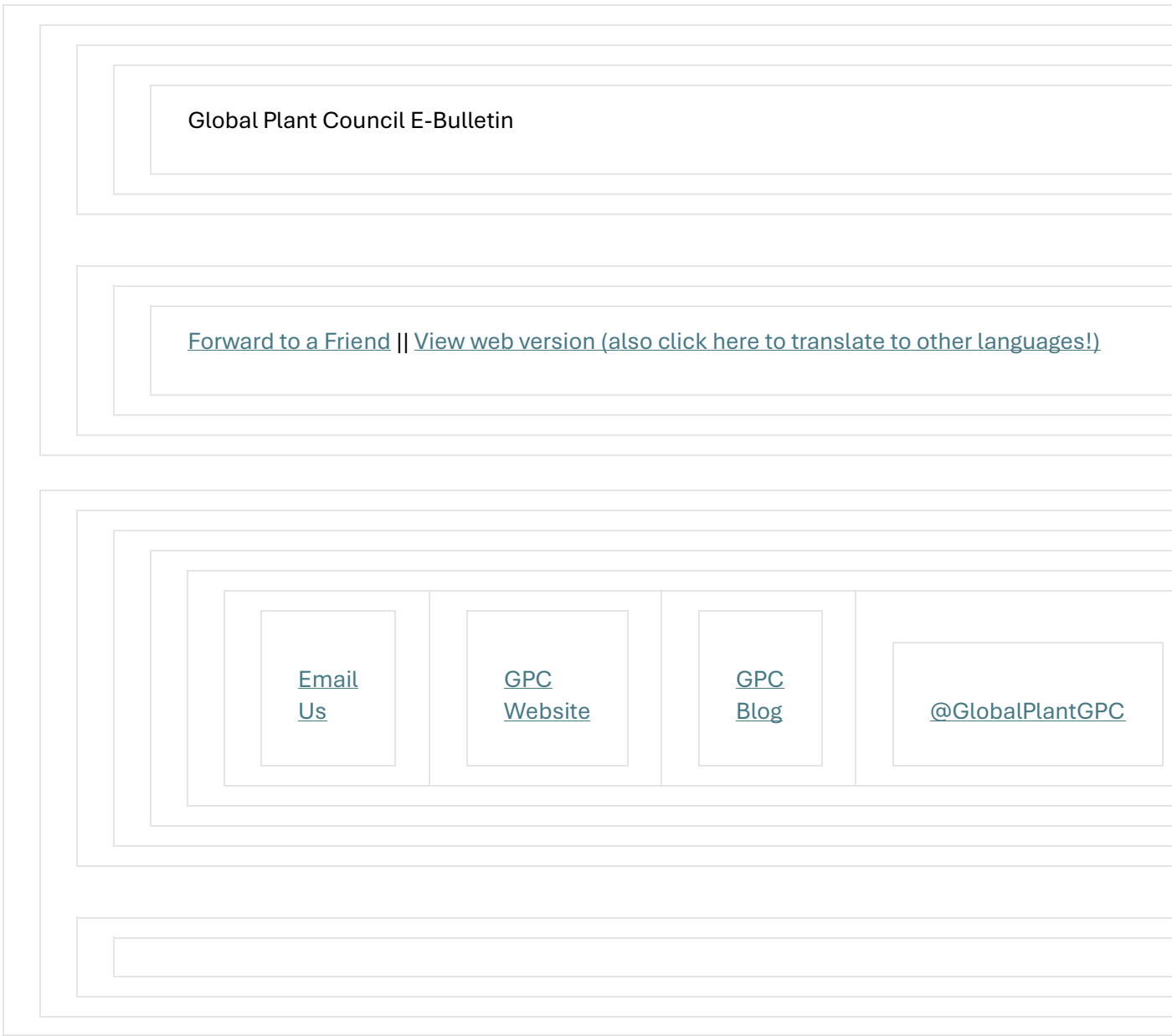
We have several new employment opportunities that have been posted on our job board.

Global Plant Council Feb E-bulletin and employment opportunities

07 March 2018

Hello ASPS members,

We have several new employment opportunities available here.



E-Bulletin /
February 2018

This month, the *Journal*
highlighting the latest ir
when and how to die.

If you are planning to at
of any of our Member O
using the code: **GC927**
plant scientists!

Abstract submission fo
our mission of facilitati
please consider selecti
registration!

Latest News /
View more...

If you have news you would like us to share on our website, please contact sarah@globalplantcouncil.org

This month 50 new break

New *Journal of Experime*
The underlying metabolic
fundamental to survival.
question is at the heart o

Tropical trees use unique
Tropical trees in the Ama

according to a new study
living cells around their x

Venus flytraps don't eat t
While most people are fa
don't know about their bi
pollinate the rare plants i
these pollinator species.

When did flowers origina
Flowering plants likely or
research.
The study, published in N
suggested by previous m
record.

Events /
View more...

If you have a conference, meeting, workshop, training course or other event coming up, we can include it in our Events calendar! Please email sarah@globalplantcouncil.org

Plant Biology Europe 201
18–21 June 2018. Copenl

5th International Rice Co
14–17 October 2018. Mar

ASA and CSSA 2018 mee
04–07 November 2018. B

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Please contact us (info@globalplantcouncil.org) to find out how your organization can join the

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GPC seeks to bring plant sc
problems we face.

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Congratulations to ASPS member Graham Farquhar 2018 senior Australian

01 March 2018

Graham Farquhar – Senior Australian 2018

Graham started 2018 with yet another award on Australia Day – Senior Australian for 2018. For those of you unfamiliar with Graham, he has previously won the Prime Minister's prize for Science in 2015, the Macfarlane Burnett medal from the AAS in 2016 and the Kyoto prize in 2017, to name the most recent. These awards are in recognition of his work that has led to wheat varieties with improved water use efficiency and improved representation of climate change trends associated with evaporation. Plants and water feature in both.

Australia has a significant grain growing industry reliant on rainfall rather than irrigation. Annual rainfall is low and variable between years and plays a major role in setting the potential yield that farmers can achieve. Together with colleagues, Graham developed two theoretical frameworks: firstly, a mathematical model describing photosynthesis based around the biochemical properties of the enzyme Rubisco (Farquhar, von Caemmerer & Berry, 1980) and secondly, equations describing what determines the stable isotopic composition of plants (Farquhar, O'Leary & Berry, 1982). There are two stable isotopic forms for carbon, 12C and 13C, with about 1% of the CO2 in the atmosphere containing 13C. Graham realised that carbon isotope discrimination could provide a way of capturing information about how much water a plant chose to spend in order to gain carbon. It turns out that the 13C/12C ratio in plant material is linearly related to the ratio of carbon gained in photosynthesis to water lost during transpiration. The measurement of the 13C/12C ratio of plant material allowed the identification of contrasting wheat lines and a trait that could be selected. Collaboration with the CSIRO plant breeder Richard Richards led to the release of commercial cultivars with greater yield under water limiting conditions for which they shared the Rank Prize in 2014. The carbon isotope theory has proved useful in a number of ways, in agriculture, ecophysiology and global flux models.

With regard to climate change, Graham's interest in crop water use extended to larger environmental scales and he realised that some model predictions arising from climate change were misleading. Rather than atmospheric warming leading to an increase in potential evaporation, observations from instruments used by the Bureau of Meteorology and by farmers to schedule irrigation suggested the opposite trend (Roderick and Farquhar 2002).

Graham conducts his research at the Australian National University. He has been a strong supporter of Functional Plant Biology, publishing much of his stable isotope work there and encouraging others to do so.

Farquhar GD, von Caemmerer S, Berry JA. 1980. A biochemical model of photosynthetic CO2 assimilation in leaves of C3 species. Planta 149: 78-90.

Farquhar GD, O'Leary MH, Berry JA. 1982. On the relationship between carbon isotope discrimination and the intercellular carbon dioxide concentration in leaves. Australian Journal of Plant Physiology 9: 121-137.

Roderick ML, Farquhar GD. 2002. The cause of decreased pan evaporation over the past 50 years. Science 298: 1410-1411.