

# Brief CV of Dr Jean W. H. Yong ("John")



## PERSONAL INFORMATION

### Contacts

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Lab Name : Global Climate Change & Eco-Physiology Lab

### Education

**B. Sc.** [Botany and Zoology] National University of Singapore, 1992  
**B. Sc. (Honours)** [Botany] NUS, 1993, C. S. Hew FLS  
**M. Sc.** [Botany] NUS, 1996, C. S. Hew FLS  
**Ph.D.** [Plant Sciences] Environmental Biology Gp, Res. Sch. Biol. Sci., Aust. National Uni, 2001, Graham D. Farquhar FAA FRS, S. Chin Wong, D. Stuart Letham FAA FRNZ

### Work Experiences

Dec 1986 – Jun 1989 National Service (SAF Pilot trainee & Infantry Officer [Lieutenant])  
May 1993 – Oct 1993 Research worker, National University of Singapore (NUS)  
Jul 1993 – Oct 1995 Tutor II, NUS  
May 1996 – Jun 1996 Research Assistant, NUS  
Dec 2000 – Jan 2001 Visiting Fellow, Research School of Biological Sciences, Aust Natl University  
Feb 2001 – Apr 2001 Teaching Fellow, Nanyang Technological University (NTU), Singapore  
Apr 2001 – present Assistant Professor, NTU  
Oct 2001 – May 2005 Resident Counsellor, NTU Hall 6, NTU  
Nov 2003 – Mar 2004 US Fulbright Scholar, Watson Inst. Intl Studies, Brown University, Providence, RI.  
Jan 2005 – present Director (Non-executive & Indept.), GuangZhao Ind. Forest Biotech. Ltd.  
Jun 2005 – Jun 2007 Hall Fellow, NTU Hall 6, NTU  
Jul 2006 Visiting Fellow, Research School of Biological Sciences, Aust Natl University  
Jul 2007 Visiting Fellow, Research School of Biological Sciences, Aust Natl University  
Jul 2007– present Senior Hall Fellow, NTU Hall 6, NTU

## A. TEACHING

### Teaching Award

**2006 Nanyang Award (Excellence In Teaching), NTU.**

**2006 NIE-NTU Excellence In Teaching Commendation** (Teaching period 2003 to 2005)

**2004 NIE-NTU Excellence In Teaching Commendation** (Teaching period 2001 to 2003)

## B. RESEARCH

### Research Interests

1. Green life sciences: Water-treatment & phytoremediation, Bio-fuel plants' selection & development, plant adaptations to arid & saline lands ("Greening the desert").
2. Plant growth regulators & esp. CYTOKININS (purines) – developing a CE-LC-MS approach for rapid analyses.
3. Plant industry (plant tissue culture, *in vitro* CO<sub>2</sub> enrichment for growth acceleration, mistletoe & orchid biology), conservation of tropical biodiversity (with a focus on mangroves, orchids, ferns and mistletoes).
4. Are mangroves a source or sink for CO<sub>2</sub>? Are mangroves better than rainforests for C sequestration in view of the dwindling freshwater supplies in South East Asia?
5. Preparing Singapore for climate change: What should Singapore do post-Kyoto Protocol?

## **Research Awards**

**2007 Research Associate**, Institute of Advanced Studies, Nanyang Technological University, Singapore (Aug 2007 to Aug 2010)  
**2007 Visiting Fellowship** (Env. Biology), Research School of Biological Sciences, Australian National University, Australia (July 2007)  
**2006 Research Outcome Award & Recognition [ROAR]**, Nanyang Technological University, Singapore  
**2006 Visiting Fellowship** (Env. Biology), Research School of Biological Sciences, Australian National University, Australia (July 2006)  
**2003-2004 US Fulbright Fellowship** (Env. Sci.), Brown University, Providence, Rhode Island, USA. (Period: Nov 03-Mar 04)  
**1998 Australian Society of Plant Physiologists Prize**, Adelaide, Australia  
**1993 Fraser & Neave Book Prize**, Natl. Uni. Singapore, Singapore. Citation **"For the student who distinguished himself in Botany"**

## **Selected Recent Publications** (Three books and 50 articles in refereed journals/book chapters)

- Ong E.S., Heng M.Y., Tan S.N., Yong J.W.H., Koh H. and Hew C.S. 2007. **Determination of gastrodin and vanillyl alcohol in *Gastrodia elata* Blume (Orchidaceae) by pressurized liquid extraction at room temperature.** JOURNAL OF SEPARATION SCIENCE (GERMANY), in press
- Ge L.Y., Tan S., Yong J.W.H., Tan S.N. 2006. **CE for cytokinin analyses: a review.** ELECTROPHORESIS (U.S.), 27: 4779-4791.
- Ge L.Y., Yong J.W.H., Tan S.N., Yang X.H., Ong E.S. 2006. **Analysis of some cytokinin nucleotides in coconut water using CEMS after SPE.** JOURNAL OF CHROMATOGRAPHY A (NETHERLANDS), 1133: 322-331.
- Ge L.Y., Yong J.W.H., Tan S.N., Ong E.S. 2006. **Determination of cytokinins in coconut water using a capillary zone electrophoresis-tandem mass spectrometry.** ELECTROPHORESIS (U.S.), 27: 2171-2181
- Yong J.W.H., Wong S.C., Letham D.S., Hocart C.H., Farquhar G.D. 2005. **Some observations of potato plants overexpressing an *ipt* gene: leaf physiology and the response to CO<sub>2</sub> enrichment.** 2<sup>nd</sup> International Symposium of Auxins and Cytokinins in Plant Development. BIOLOGIA PLANTARUM (CZECH REPUBLIC), 49: S32
- Sheue C.R., Yong J.W.H., Yang Y.P. 2005. **The *Bruguiera* (Rhizophoraceae) species in the mangroves of Singapore, especially on the new record and the rediscovery.** TAWANIA (TAIWAN), 50:251-260.
- Ge L.Y., Yong J.W.H., Tan S.N., Yang X.H., Ong E.S. 2005. **Analysis of positional isomers of hydroxylated aromatic cytokinins by MECC.** ELECTROPHORESIS (U.S.), 26: 1769-1777.
- Ang S.L.P., Yong J.W.H. 2005. **A protocol for *in vitro* germination and sustainable growth of two tropical mistletoes.** PLANT CELL TISSUE AND ORGAN CULTURE (NETHERLANDS), 80: 221-228.
- Ge L.Y., Yong J.W.H., Tan S.N., Yang X.H., Ong E.S. 2004. **Analysis of some cytokinins in coconut (*Cocos nucifera* L.) water by MECC after SPE.** JOURNAL OF CHROMATOGRAPHY A (NETHERLANDS), 1048: 119-126.
- Hew C.S., Yong J.W.H. 2004. **THE PHYSIOLOGY OF TROPICAL ORCHIDS IN RELATION TO THE INDUSTRY.** Second Edition. World Scientific Press, Singapore, New Jersey, London. ISBN 981-238-801-X. 370 pages.
- Sheue C.R., Liu H.Y., Yong J.W.H. 2003. ***Kandelia obovata* (Rhizophoraceae), a new mangrove species from Eastern Asia.** TAXON (AUSTRIA), 52: 287-294.
- Gan K.S., Wong S.C., Yong J.W.H., Farquhar G.D. 2003. **Evaluation of models of leaf water <sup>18</sup>O enrichment using measurements of spatial patterns of vein xylem, leaf water and dry matter in maize leaves.** PLANT CELL ENVIRONMENT (U.K.), 26: 1479-1495.
- Gan K.S., Wong S.C., Yong J.W.H., Farquhar G.D. 2002. **<sup>18</sup>O patterns of vein xylem, leaf water and dry matter in cotton leaves.** PLANT PHYSIOLOGY (U. S.), 130: 1008-1021.
- Tantikanjana T., Yong J.W.H., Letham D.S., Griffith M., Hussain M., Ljung K., Sandberg G., Sundaresan V. 2001. **Control of axillary bud initiation & shoot architecture in *Arabidopsis* by the *SUPERSHOOT* gene.** GENES & DEVELOPMENT (U. S.), 15: 1577-1588.
- Yong J.W.H., Wong S.C., Letham D.S., Hocart C.H., Farquhar G.D. 2000. **Effects of elevated [CO<sub>2</sub>] and nitrogen nutrition on cytokinins in the xylem sap and leaves of cotton.** PLANT PHYSIOLOGY (U. S.), 124: 767-779.

### ***Research achievement with local significance***

Together with the newly appointed NTU adjunct Prof C. S. Hew, we have published recently a joint NUS-NTU Orchid Physiology book (2<sup>nd</sup> Edition) that has kept Singapore at the forefront of global orchid research with tremendous potential to improve and enhance the orchid industry throughout Asia.

### ***Appointment as external assessor; membership on visiting committees***

Member, Sustainable Singapore Project: The Singapore Countryside, its values & sustainable uses, Institute of Policy Studies, 2007

Member, Climate Change Roundtable, Singapore Government, 2005

Member, International Advisory Board, Sembawang GreenWave Environmental Care Programme, Sembawang Shipyard Pte Ltd, SembCorp. 2005 onwards

Scientific advisory member, S'pore Government fact-finding team's trip to the Australian Greenhouse Office, Canberra, Australia. 2002

### ***Invited presentations at scientific meetings/workshops***

**Careers in Science: Money, Fame or Self-fulfillment?** Science 360°: Academia, Industry and Leisure. Eureka Symposium (6 Sep 2006), Republic Polytechnic, Biopolis Matrix Auditorium, Singapore.

**Some observations of potato plants over-expressing an *ipt* gene (leaf physiology and responses to CO<sub>2</sub> enrichment), plus an update of current works in Singapore.** Environmental Biology Series, Robertson Seminar Room (19 Jul 2006), Research School of Biological Sciences, Australian National University, Canberra, Australia.

**Originality and creativity in life science research.** Science Research module lecture series (March 2006), Hwa Chong Institution, Singapore.

**Plants, Climate Change, Water and Biodiversity: Linkages among Environmental Issues.** 3<sup>rd</sup> Climate Change Forum, with Sir David King, UK Chief Scientist, (10 Oct 2005), Energy Asia, Singapore Management University, Singapore.

**Some observations of potato plants overexpressing an *ipt* gene: leaf physiology & the response to CO<sub>2</sub> enrichment.** 2005. 2<sup>nd</sup> International Symposium of Auxins & Cytokinins in Plant Development. Prague, Czech Republic. (July 2005).

**Environmental Issues and Education in Southeast Asia.** 2004. US Fulbright Scholar Lecture Series, (7-8 Jan 2004), Rhode Island School of Design [RISD] and Asian University for Woman, Providence, Rhode Island, USA.

**Environmental and Conservational Issues in Southeast Asia: Problems and Solutions?** 2004. US Fulbright Scholar Lecture Series, Fulbright Occasional Lecturer Program (1-3 Feb 2004), Teikyo Post University, Waterbury, Connecticut, USA.

**Tropical CAM plants, Mistletoes and Cytokinins!** 2004. US Fulbright Scholar Lecture Series, Fulbright Occasional Lecturer Program (Minority Initiative) (16-17 Feb 2004), California State University, San Bernardino, California, USA.

**Teaching Science Through Field trips.** 2004. US Fulbright Scholar Lecture Series, Fulbright Occasional Lecturer Program (Minority Initiative) (18-19 Feb 2004), Los Angeles Valley College, Van Nuys, California, USA.

**Overview of biodiversity research in the Natural Sciences Academic Group.** 2003. The Biodiversity of Singapore Symposium, National University of Singapore, Singapore. (11-12 July, 2003).

**Carbon accounting in Singapore & beyond.** 2002. Science Council of Asia, 2<sup>nd</sup> Conference, KL, Malaysia. (May 2002).

### ***Service as a reviewer***

Plant Cell & Environment (UK), Plant Physiology & Biochemistry (France), Journal of Tropical Ecology (UK), USDA Research Grants (USA), New Phytologists (UK), International Journal of Biological Macromolecules (USA), Plant Molecular Biology (USA), Aquatic Botany (Netherlands).

## **C. SERVICES**

### ***Other services to the University***

Senior Hall Fellow, NTU Hall 6, July 2007 onwards

Hall Fellow, NTU Hall 6, Jun 2005-30 Jun 2007

Resident Counsellor, NTU Hall 6, Oct 2001-May 2005

Member, Safety Committee, August 2001 onwards

Member, NTU-SGH Annual Symposium organizing committee, Jan 2005 onwards

Member, NTU Alumni Day organizing committee, Feb 2005 onwards

### ***Public Service, service to professional bodies/ society/local Industry***

Director (Non-executive and Independent), Guangzhao Industrial Forest Biotechnology Ltd. Jan 2005 onwards

Council member, Fulbright Association of Singapore. Aug 2005 onwards

Invited judge, A\*STAR-Tan Kah Kee's Young Inventors Competition. Annually, from 2001 onwards

Invited judge, Green Wave Environmental Care project competition (SembCorp). Annually, from 2003 onwards

Invited reviewer, 'O' Level Biology Textbooks, Ministry of Education, 2006

Invited trainer, Singapore Biology Olympiad team (SIBIOL), June 2003

Invited judge, MOE-Citisuccess (CitiBank) Project Competition, May 2003

Invited judge, MOE Elementz Science Programme Competition, April 2003

## **D. APPENDIX**

### **Professional Honours- Scholarships Received**

- Singapore Chinese Chamber of Commerce & Industry Foundation Scholarship (1992-93)
- National University of Singapore Research Scholarship (1993-95)
- Tan Kah Kee's Overseas Post-Graduate Scholarship [Singapore] (1996-2000)
- Nanyang Technological University Overseas Graduate Scholarship (1996-2000)
- Australian National University Ph.D. Scholarship (1996-2000)