

## CURRICULUM VITAE

### WILLIAM JOHN LUCAS

#### Degrees:

B.Sc. (Honors Botany; First Class), University of Adelaide, 1971  
Ph.D. (Plant Physiology), University of Adelaide, 1975  
Doctor of Science, University of Adelaide, 1990

#### Professional Positions Held:

University of Toronto	April 1975-Aug. 1977
University of California, Davis, Assistant Prof.	Sept. 1977-1980
University of California, Davis, Associate Prof.	July 1980-1983
University of California, Davis, Professor	July 1983-present
University of California, Davis, Distinguished Professor	May 2003-present
Universität Göttingen, Germany (Guest Prof.)	1984 – 1985
Hebrew University of Jerusalem, Lady Davis Professor	1998
Tokyo Univ. of Agric. & Biotech., Visiting Professor	1999
Nat. Sci. Council, Republic of China, Honorable Visitor,	1999
Francqui Foundation, Belgium, Francqui Chair	2001
Academia Sinica, Taiwan, Visiting Professor	2004

#### Membership in Professional Societies:

American Society of Plant Biologists  
American Association for the Advancement of Science  
American Society for Virology  
Australian Society of Plant Physiologists (Honorary Life Member)

#### Appointments on Editorial Boards:

Plant Physiology Editorial Board (1977-1992)  
Annual Review of Plant Physiology and Plant Molecular Biology Editorial Board  
(1985-1990)  
Protoplasma Editorial Board (1985-2004)  
Planta Editorial Board (1989 - )  
Journal of Theoretical Biology (Associate Editor; 1999 – 2003)  
The Plant Cell (Coeditor, 2003 - )

#### Honors and Awards:

J.G. Wood Memorial Prize – 1971 – University of Adelaide  
Ernest Ayers Scholarship – 1971 – University of Adelaide  
Ena Orrock Lewcock Award – 1971 – University of Adelaide  
John Baggot Medal – 1971 – University of Adelaide  
William Culross Prize – 1975 – University of Adelaide

Professeur honoris causa – 1990 – de l'Université Internationale des Eaux-de-Vie et Boissons Spirituenses, Segonzac, France  
Honorary Life Member – 1994 – Australian Society of Plant Physiologists  
Distinguished Lecturer – 1994 – University of Adelaide  
Martin Gibbs Medal – 1997 – American Society of Plant Biologists  
Distinguished Professor Lecture – 1999 – Boyce Thompson Institute, Cornell University  
French National Academy of Sciences – 2000 – Elected Foreign Member  
Francqui Medal – 2001 – Belgian Francqui Foundation  
Highly Cited Author – 2002 – ISI  
Distinguished Professor – 2003 – University of California, Davis

## **PUBLICATIONS:**

- Lucas, W.J. and F.A. Smith. 1973 The formation of alkaline and acid regions at the surface of *Chara corallina* cells. *J. Exp. Bot.* 24:1-14.
- Lucas, W.J. 1975 Analysis of the diffusion symmetry developed by the alkaline and acid bands which form at the surface of *Chara corallina* cells. *J. Exp. Bot.* 26:271-286.
- Lucas, W.J. 1975 Photosynthetic fixation of <sup>14</sup>carbon by internodal cells of *Chara corallina*. *J. Exp. Bot.* 26:331-346.
- Lucas, W.J. 1975 The influence of light intensity on the activation and operation of the hydroxyl efflux system of *Chara corallina*. *J. Exp. Bot.* 26:347-360.
- Lucas, W.J. 1976 Plasmalemma transport of HCO<sub>3</sub><sup>-</sup> and OH<sup>-</sup> in *Chara corallina*: Non-antiporter systems. *J. Exp. Bot.* 27:19-31.
- Lucas, W.J. 1976 The influence of Ca<sup>2+</sup> and K<sup>+</sup> on H<sup>14</sup>CO<sub>3</sub><sup>-</sup> influx in internodal cells of *Chara corallina*. *J. Exp. Bot.* 27:32-42.
- Lucas, W.J. and Smith, F.A. 1976 Influence of irradiance of H<sup>+</sup> efflux and Cl<sup>-</sup> influx in *Chara corallina*: An investigation aimed at testing two Cl<sup>-</sup> transport models. *Aust. J. Plant Physiol.* 3:443-446.
- Lucas, W.J. 1977 Plasmalemma transport HCO<sub>3</sub><sup>-</sup> and OH<sup>-</sup> in *Chara corallina*: Inhibitory effect of ammonium sulphate. *J. Exp. Bot.* 28:1307-1320.
- Lucas, W.J. 1977 Analogue inhibition of the active HCO<sub>3</sub><sup>-</sup> transport site in the Characean plasma membrane. *J. Exp. Bot.* 28:1321-1336.
- Lucas, W.J. and Dainty, J. 1977 Spatial distribution of functional OH<sup>-</sup> carriers along a Characean internodal cell: Determined by the effect of cytochalasin B on H<sup>14</sup>CO<sub>3</sub><sup>-</sup> assimilation. *J. Memb. Biol.* 32:75-92.

- Lucas, W.J. and Dainty, J. 1977  $\text{HCO}_3^-$  influx across the plasmalemma of *Chara corallina*. Divalent cation requirement. *Plant Physiol.* 60:862-867.
- Lucas, W.J., Ferrier, J.M., and Dainty, J. 1977 Plasmalemma transport of  $\text{OH}^-$  in *Chara corallina*: Dynamics of activation and deactivation. *J. Memb. Biol.* 32:49-73.
- Lucas, W.J., Spanswick, R.M., and Dainty, J. 1978  $\text{HCO}_3^-$  influx across the plasmalemma of *Chara corallina*. Physiological and biophysical influence of 10mM  $\text{K}^+$ . *Plant Physiol.* 61:487-493.
- Lucas, W.J., Tyree, M.T., and Petrov, A. 1978 Characterizations of photosynthetic  $^{14}\text{C}$  carbon assimilation by *Potamogeton lucens* L. *J. Exp. Bot.* 29:1409-1421.
- Lucas, W.J. 1979 Alkaline band formation in *Chara corallina*: Due to  $\text{OH}^-$  efflux or  $\text{H}^+$  influx. *Plant Physiol.* 63:248-254.
- Ferrier, J.M., Morvan, C., Lucas, W.J. and Dainty, J. 1979 Plasmalemma voltage in *Chara corallina*. *Plant Physiol.* 63:709-714.
- Ferrier, J.M. and Lucas, W.J. 1979 Plasmalemma transport of  $\text{OH}^-$  in *Chara corallina*. II. Further analysis of the diffusion system associated with  $\text{OH}^-$  efflux. *J. Exp. Bot.* 30:705-718.
- Lucas, W.J. and Alexander, J.M. 1980 Sulfhydryl group involvement in plasmalemma transport of  $\text{HCO}_3^-$  and  $\text{OH}^-$  in *Chara corallina*. *Plant Physiol.* 65:274-280.
- Lucas, W.J. and Ferrier, J.M. 1980 Plasmalemma transport of  $\text{OH}^-$  in *Chara corallina*. II. Further studies on transport substrate and directionality. *Plant Physiol.* 66:46-50.
- Franceschi, V.R. and Lucas, W.J. 1980 Structure and possible function(s) of charasomes; complex plasmalemma-cell wall elaborations present in some characean species. *Protoplasma* 104:253-271.
- Lucas, W.J. and Nuccitelli, R. 1980  $\text{HCO}_3^-$  and  $\text{OH}^-$  transport across the plasmalemma of *Chara*: spatial resolution obtained using extracellular vibrating probe. *Planta* 150:120-131.
- Lucas, W.J. and Shimmen, T. 1981 Intracellular perfusion and cell centrifugation studies on plasmalemma transport processes in *Chara corallina*. *J. Memb. Biol.* 58:227-237.
- Franceschi, V.R. and Lucas, W.J. 1981 The glycosome of *Chara*: ultrastructure, development, and composition. *J. Ultrastructural Res.* 75:218-228.
- Lucas, W.J. and Alexander, J.M. 1981 Influence of turgor pressure manipulation on plasmalemma transport of  $\text{HCO}_3^-$  and  $\text{OH}^-$  in *Chara corallina*. *Plant Physiol.* 68:553-559.

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- Lucas, W.J. and Franceschi, V.R. 1981 Characean charasome-complex and plasmalemma vesicle development. *Protoplasma* 107:255-267.
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- Maynard, J.M. and Lucas, W.J. 1982 A reanalysis of the two-component phloem loading system in *Beta vulgaris*. *Plant Physiol.* 69:734-739.
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- Franceschi, V.R. and Lucas, W.J. 1982. The relationship of the charasome to chloride uptake in *Chara corallina*: physiological and histochemical investigations. *Planta* 154:525-537.
- Maynard, J.W. and Lucas, W.J. 1982 Sucrose and glucose uptake into *Beta vulgaris* leaf tissues: A case for general (apoplastic) retrieval systems. *Plant Physiol.* 70:1436-1443.
- Lucas, W.J. and Franceschi, V.R. 1982 Organization of the sieve-element walls of leaf minor veins. *J. Ultrastructural Res.* 81:209-221.
- Keifer, D.W., Franceschi, V.R., and Lucas, W.J. 1982 Plasmalemma chloride transport in *Chara corallina*: Inhibition by 4,4'-diisothiocyano-2, 2'-disulfonic acid stilbene. *Plant Physiol.* 70:1327-1334.
- Kochian, L.V. and Lucas, W.J. 1982 Potassium transport in corn roots. I. Resolution of kinetics into a saturable and linear component. *Plant Physiol.* 70:1723-1731.
- Lucas, W.J. 1982 Mechanism of acquisition of exogenous bicarbonate by internodal cells of *Chara corallina*. *Planta* 156:181-192.
- Kochian, L.V. and Lucas, W.J. 1982 A re-evaluation of the carrier-kinetic approach to transport in roots of higher plants. *What's New in Plant Physiol.* 13:45-48.
- Lucas, W.J. 1983 Photosynthetic assimilation of exogenous HCO<sub>3</sub><sup>-</sup> by aquatic plants. *Ann. Rev. Plant. Physiol.* 34:71-104.
- Lucas, W.J., Keifer, D.W., and Sanders, D. 1983 Bicarbonate transport in *Chara corallina*: Evidence for cotransport of HCO<sub>3</sub><sup>-</sup> with H<sup>+</sup>. *J. Memb. Biol.* 73:263-274.

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- Fisahn, J. and W. J. Lucas. 1990 Inversion of extracellular current and axial voltage profile in *Chara* and *Nitella*. *J. Memb. Biol.* 113:1-8.
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- Fisahn, J. and Lucas, W. J. 1990 Effects of microtubule agents on the spatial and electrical properties of the plasma membrane in *Chara corallina* Planta 182:506-512.
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