

PUBLICATIONS:

- Lucas, W.J. and F.A. Smith. 1973 The formation of alkaline and acid regions at the surface of *Chara corallina* cells. *Journal of Experimental Botany* 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. *Journal of Experimental Botany* 26:271-286.
- Lucas, W.J. 1975 Photosynthetic fixation of 14 carbon by internodal cells of *Chara corallina*. *Journal of Experimental Botany* 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*. *Journal of Experimental Botany* 26:347-360.
- Lucas, W.J. 1976 Plasmalemma transport of HCO_3^- and OH^- in *Chara corallina*: Non-antiporter systems. *Journal of Experimental Botany* 27:19-31.
- Lucas, W.J. 1976 The influence of Ca^{2+} and K^+ on $\text{H}^{14}\text{CO}_3^-$ influx in internodal cells of *Chara corallina*. *Journal of Experimental Botany* 27:32-42.
- Lucas, W.J. and Smith, F.A. 1976 Influence of irradiance of H^+ efflux and Cl^- influx in *Chara corallina*: An investigation aimed at testing two Cl^- transport models. *Australian Journal of Plant Physiology* 3:443-446.
- Lucas, W.J. 1977 Plasmalemma transport HCO_3^- and OH^- in *Chara corallina*: Inhibitory effect of ammonium sulphate. *Journal of Experimental Botany* 28:1307-1320.
- Lucas, W.J. 1977 Analogue inhibition of the active HCO_3^- transport site in the Characean plasma membrane. *Journal of Experimental Botany* 28:1321-1336.
- Lucas, W.J. and Dainty, J. 1977 Spatial distribution of functional OH^- carriers along a Characean internodal cell: Determined by the effect of cytochalasin B on $\text{H}^{14}\text{CO}_3^-$ assimilation. *Journal of Membrane Biology* 32:75-92.
- Lucas, W.J. and Dainty, J. 1977 Bicarbonate assimilation and $\text{HCO}_3^-/\text{OH}^-$ exchange in *Chara corallina*. In: Regulation of Cell Membrane Activities in Plants, p. 43-53, E. Marre and O. Ciferri (Editors), Elsevier/North-Holland Publishing Company, Amsterdam. (Proceedings of the International Workshop held in Pallanza, Italy, 26-29 August 1976).
- Lucas, W.J. and Dainty, J. 1977 HCO_3^- influx across the plasmalemma of *Chara corallina*. Divalent cation requirement. *Plant Physiology* 60:862-867.
- Lucas, W.J. and Dainty, J. 1977 Spatial distribution of functional OH^- transporters along a Characean internodal cell: Determined by the effect of cytochalasin B on $\text{H}^{14}\text{CO}_2^-$ assimilation. In: Exchanges Ioniques Transmembranaires Chez Les Vegetaux, M. Thellier, A. Monnier, M. Demarty, and J.

- Dainty (Editors), Centre National de la Recherche Scientifique Pubs., Paris, P. 289-298. (Proceedings of the International Workshop held at Rouen, France, 5-11 July 1976).
- Lucas, W.J., Ferrier, J.M., and Dainty, J. 1977 Plasmalemma transport of OH⁻ in *Chara corallina*: Dynamics of activation and deactivation. *Journal of Membrane Biology* 32:49-73.
- Lucas, W.J., Spanswick, R.M., and Dainty, J. 1978 HCO₃⁻ influx across the plasmalemma of *Chara corallina*. Physiological and biophysical influence of 10mM K⁺. *Plant Physiology* 61:487-493.
- Lucas, W.J., Tyree, M.T., and Petrov, A. 1978 Characterizations of photosynthetic ¹⁴Carbon assimilation by *Potamogeton lucens* L. *Journal of Experimental Botany* 29:1409-1421.
- Lucas, W.J. 1979 Alkaline band formation in *Chara corallina*: Due to OH⁻ efflux or H⁺ influx. *Plant Physiology* 63:248-254.
- Ferrier, J.M., Morvan, C., Lucas, W.J. and Dainty, J. 1979 Plasmalemma voltage in *Chara corallina*. *Plant Physiology* 63:709-714.
- Ferrier, J.M. and Lucas, W.J. 1979 Plasmalemma transport of OH⁻ in *Chara corallina*. II. Further analysis of the diffusion system associated with OH⁻ efflux. *Journal of Experimental Botany* 30:705-718.
- Lucas, W.J. and Alexander, J.M. 1980 Sulfhydryl group involvement in plasmalemma transport of HCO₃⁻ and OH⁻ in *Chara corallina*. *Plant Physiol.* 65:274-280.
- Lucas, W.J. and Ferrier, J.M. 1980 Plasmalemma transport of OH⁻ in *Chara corallina*. II. Further studies on transport substrate and directionality. *Plant Physiology* 66:46-50.
- Lucas, W.J. 1980 Control and synchronization of HCO₃⁻ and OH⁻ transport during photosynthetic assimilation of exogenous HCO₃⁻. pp 317-330. In: Plant Membrane Transport: Current Conceptual Issues, R.M. Spanswick, W.J. Lucas and J. Dainty (Editors). Elsevier/North Holland, Amsterdam.
- Spanswick, R.M., Lucas, W.J. and Dainty, J. 1980 Plant Membrane Transport: Current Conceptual Issues. Elsevier/North Holland, Amsterdam. (Proceedings of the International Plant Membrane Transport Workshop, held in Toronto, Canada, July 22-27, 1979) 670 p.
- 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 HCO₃⁻ and 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*. *Journal of Membrane Biology* 58:227-237.
- Franceschi, V.R. and Lucas, 1981 The glycosome of *Chara*: ultrastructure, development, and composition. *Journal of Ultrastructural Research* 75:218-228.

- Lucas, W.J. and Alexander, J.M. 1981 Influence of turgor pressure manipulation on plasmalemma transport of HCO_3^- and OH^- in *Chara corallina*. Plant Physiology 68:553-559.
- Lichtner, F.T., Lucas, W.J., and Spanswick, R.M. 1981 Effect of sulfhydryl reagents on the biophysical properties of the plasmalemma of *Chara corallina*. Plant Physiology 68:899-904.
- Lucas, W.J. and Franceschi, V.R. 1981 Characean charasome-complex and plasmalemma vesicle development. Protoplasma 107:255-267.
- Franceschi, V.R. and Lucas, W.J. 1981 The Charasome periplasmic space. Protoplasma 107:269-284.
- Maynard, J.M. and Lucas, W.J. 1982 A reanalysis of the two-component phloem loading system in *Beta vulgaris*. Plant Physiology 69:734-739.
- Keifer, D.W. and Lucas, W.J. 1982 Control of K^+ conductance across the plasmalemma of *Chara corallina*. Plant Physiology 69:781-788.
- 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 Physiology 70:1436-1443.
- Lucas, W.J. and Franceschi, V.R. 1982 Organization of the sieve-element walls of leaf minor veins. Journal of Ultrastructural Research 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 Physiology 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 Physiology 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_3^- 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_3^- with H^+ . J. Membrane Biol. 73:263-274.
- Kochian, L.V. and Lucas, W.J. 1983 Potassium transport in corn roots. II. The significance of the root periphery. Plant Physiol. 73:208-215.

- Lucas, W.J., Wilson, C., and Wright, J.P. 1984 Perturbation of *Chara* plasmalemma transport function by 2[4(2',4'-Dichlorophenoxy)phenoxy] propionic acid. *Plant Physiol.* 74:61-66.
- Pesacreta, T.C. and Lucas, W.J. 1984 The plasma membrane coat and a coated vesicle-associated reticulum: Their structures and possible interrelationship in *Chara corallina*. *J. Cell Biol.* 98:1537-1545.
- Wille, A. and Lucas, W.J. 1984 Ultrastructural and histochemical studies on guard cells. *Planta* 160:129-142.
- Grusak, M.A. and Lucas, W.J. 1984 Recovery of cold-inhibited phloem translocation in sugar beet. I. Experimental analysis of an existing mathematical model. *J. Exp. Bot.* 35:389-402.
- Lucas, W.J. 1984 How are the plasmalemma transport processes of *Chara* regulated? In: Plant Membrane Transport, eds., W.J. Cram, R. Rybova, K. Janacek, and K. Sigler. Academia, Praha, pp. 459-465.
- Kochian, L.V. and Lucas, W.J. 1984 The significance of the linear component for K⁺ influx in corn roots. Ibid., pp. 410-411.
- Pesacreta, T.C. and Lucas, W.J. 1984 Plasma membrane associated extracellular matrix in *Chara corallina*. Ibid., pp. 274-276.
- Lucas, W.J., Wilson, C., and Wright, J.P. 1984 Biophysical effects of Diclofop in the *Chara* plasmalemma. Ibid., pp. 331-332.
- Waaland, S.D. and Lucas, W.J. 1984 An investigation of the role of transcellular ion currents in morphogenesis of *Griffithsia pacifica* Kylin. *Protoplasma* 123:184-191.
- Kochian, L.V. and Lucas, W.J. 1984 Potassium transport in corn roots. III. Perturbation by exogenous NADH and Ferricyanide. *Plant Physiol.* 77:429-436.
- Pesacreta, T.C. and Lucas, W.J. 1984 Presence of partially-coated reticulum in angiosperms. *Protoplasma* 125:173-184.
- Grusak, M.A. and Lucas, W.J. 1985 Cold-inhibited phloem translocation in sugar beet. II. Characterization and localization of the slow-cooling response. *J. Exp. Bot.* 36:745-755.
- Wilson, C., Oross, J.W., and Lucas, W.J. 1985 Sugar uptake into *Allium cepa* leaf tissue: an integrated approach. *Planta* 164:227-240.
- Lucas, W.J. 1985 Bicarbonate utilization by *Chara*: A re-analysis. In: Inorganic Carbon Uptake by Aquatic Photosynthetic Organisms, eds., W.J. Lucas and J.A. Berry, American society of Plant Physiologists, Rockville, MD, pp. 229-254.
- Raven, J.A. and Lucas, W.J. 1985 Energy costs of carbon acquisition. Ibid., pp. 305-324.
- Lucas, W.J. and Berry, J.A. 1985 Inorganic Carbon Uptake by Aquatic Photosynthetic Organisms.

American Society of Plant Physiologists, Monograph Series, Rockville, MD, p. 494.

- Lucas, W.J. 1985 Phloem loading: A metaphysical phenomenon? In: Regulation of Carbon Partitioning in Photosynthetic Tissue, eds., R.L. Heath and J. Preiss. American Society of Plant Physiologists, Monograph Series, Rockville, MD, pp. 254-271.
- Kochian, L.V., Xin-Zhi, J., and Lucas, W.J. 1985 Potassium transport in corn roots. IV. Characterization of the linear component. *Plant Physiol.* 79:771-776.
- Oross, J.W. and Lucas, J.W. 1985 Sugar beet petiole vascular structure: vascular anastomoses and phloem ultrastructure. *Can. J. Bot.* 63:2295-2304.
- Pesacreta, T.C., Bennett, A.B., and Lucas, W.J. 1985 Spectrophotometric and cytochemical analyses of phosphatase activity in *Beta vulgaris* L. *J. Histochem. and Cytochem.* 34:327-338.
- Lucas, W.J. and Ogata, K. 1985 Hydroxyl- and bicarbonate-associate transport processes in *Chara corallina*: Studies on the light-dark regulation mechanism. *J. Exp. Bot.* 36:1947-1958.
- Lucas, W.J., Keifer, D.W., and Pesacreta, T.C. 1986 Influence of culture medium pH on charasome development and chloride transport in *Chara corallina*. *Protoplasma* 130:5-11.
- Lucas, W.J. and Berry, J.A. 1986 Inorganic carbon transport in aquatic photosynthetic organisms. *Physiologia Plantarum* 65:539-543.
- Lucas, W.J. and Kochian, L.V. 1986 Ion transport processes in corn roots: An approach utilizing microelectrode techniques. In: Advanced Agricultural Instrumentation, ed., W. Gensler, Martinus Nijhoff, The Hague, pp 402-425.
- Ferrier, J.M. and Lucas, W.J. 1986 Theory of ion transport and the vibrating probe. In: Ionic Currents in Development, ed. R. Nuccitelli. A.R. Liss, Inc., NY, pp. 45-52.
- Grusak, M.A. and Lucas, W.J. 1986 Cold-inhibited phloem translocation in sugar beet. III. The involvement of the phloem pathway in source-sink partitioning. *J. Exp. Bot.* 36:277-288.
- Ferrier, J.M. and Lucas, W.J. 1986 Ion transport and the vibrating probe. *Biophysics Journal* 49:803-807.
- Wilson, C. and Lucas, W.J. 1986 Kinetic analysis of sugar transport: from yesterday to tomorrow. In: Phloem Transport, eds. J. Cronshaw, W.J. Lucas and R. Giaquinta. Alan R. Liss, New York, pp. 3-15.
- Oross, J.W., Grusak, M.A., and Lucas, W.J. 1986 Regulation of long-distance translocation in sugar beet: Structural aspects. In: Phloem Transport, eds., J. Cronshaw, W.J. Lucas and R. Giaquinta. Alan R. Liss, New York, pp. 477-486.
- Madore, M.A. and Lucas, W.J. 1986 Characterization of the source leaf symplast using Lucifer Yellow CH. In: Phloem Transport, eds., J. Cronshaw, W.J. Lucas and R. Giaquinta. Alan R. Liss, New York, pp.

129-133.

- Pesacreta, T.C. and Lucas, W.J. 1986 Phosphatase activities in *Beta vulgaris* leaves. In: Phloem Transport, eds., J. Cronshaw, W.J. Lucas and R. Giaquinta. Alan R. Liss, New York, pp. 135-144.
- Morrow, D.L. and Lucas, W.J. 1986 (1->3)-8-D-Glucan synthetase from sugar beet. I. Isolation and solubilization. *Plant Physiol.* 81:171-176.
- Cronshaw, J., Lucas, W.J., and Giaquinta, R. 1986 Phloem Transport, Alan R. Liss, N.Y., 650 p.
- Madore, M.A., Oross, J.W., and Lucas, W.J. 1986 Symplastic transport in *Ipomoea tricolor* source leaves. *Plant Physiol.* 82:432-442.
- Lucas, W.J. and Kochian, L.V. 1987 Influence of exogenous NADH on K⁺ and H⁺ transport in corn roots. In: Redox Functions of the Eukaryotic Plasma Membrane, ed., J.M. Ramirez. Consejo Superior de Investigaciones Cientificas, Madrid, pp 177-193.
- Kochian, L.V. and Lucas, W.J. 1987 Investigating root ion transport processes: an integrated experimental approach. In: Redox Functions of the Eukaryotic Plasma Membrane, ed., J.M. Ramirez. Consejo Superior de Investigaciones Cientificas, Madrid, pp 157-173.
- Brechignac, F. and Lucas, W.J. 1987 Photorespiration and internal CO₂ accumulation in *Chara corallina* as inferred from the influence of DIC and O₂ on photosynthesis. *Plant Physiol.* 83:163-169.
- Lucas, W.J. and Brechignac, F. 1987 Photosynthetic response to oxygen and inorganic carbon of low- and high-CO₂-grown cells of *Chara corallina*. *Progress in Photosynthetic Research*, IV.6:341-344.
- Lucas, W.J. 1987 Functional aspects of cells in root apices. In: Root Development and Function: Effects of the Physical Environment, eds., J.V. Lake, D.A. Rose and P.J. Gregory, Society for Experimental Biology Seminar Series, Vol. 30, Cambridge University Press, pp 27-52.
- Madore, M.A. and Lucas, W.J. 1987 Control of photoassimilate movement in source leaf tissues of *Ipomoea tricolor* Cav. *Planta* 171:197-204.
- Morrow, D.L. and Lucas, W.J. 1987 (1->3)-8-D-Glucan synthase from sugar beet. II. Product inhibition by UDP. *Plant Physiol.* 84:565-567.
- Newman, I.A., Kochian, L.V., Grusak, M.A., and Lucas, W.J. 1987 Fluxes of H⁺ and K⁺ in corn roots: characterization and stoichiometries using ion-selective microelectrodes. *Plant Physiol.* 84:1177-1184.
- Wilson, C. and Lucas, W.J. 1987 Influence of internal sugar levels on apoplasmic retrieval of exogenous sucrose in source leaf tissue. *Plant Physiol.* 84:1088-1095.
- Lucas, W.J. and Wilson, C. 1987 Influence of mannose on the apoplasmic retrieval systems of source leaves.

Plant Physiol. 85:423-429.

- Lucas, W.J. and Madore, M.A. 1988 Recent advances in sugar transport. In: The Biochemistry of Plants: A Comprehensive Treatise, Volume 14: Carbohydrates, ed., J. Preiss, Academic Press, New York, pp. 35-84.
- Kochian, L.V. and Lucas, W.J. 1988 Potassium transport in roots. *Advances in Botanical Research*. Vol 15: 93-178.
- Wilson, C. and Lucas, W.J. 1988 Wounding and the regulation of apoplasmic retrieval in source leaf tissue of *Spinacia oleracea* L. *J. Exp. Bot.* 39:529-542.
- Lucas, W.J. and Kochian, L.V. 1988 Mechanisms of ion transport in plants: K⁺ as an example. In: Plasma Membrane Oxidoreductases in Control of Animal and Plant Growth, eds., F.L. Crane, H. L w and D.J. Morrø, Plenum, New York, pp. 219-232.
- Lucas, W.J. and Sanders, D. 1989 Ion transport in *Chara* Cells. *Methods in Enzymology* 174(28):443-479.
- Madore, M.A. and Lucas, W.J. 1989 Transport of photoassimilates between leaf cells. In: Transport of Photoassimilates, eds., D.A. Baker and J. Milburn, Longman, pp. 49-78.
- Gallie, D.R., Lucas, W.J., and Walbot, V. 1989 Visualizing mRNA expression in plant protoplasts: factors influencing efficient mRNA uptake and translation. *The Plant Cell* 1:301-311.
- Lucas, W.J., Brechignac, F., Mimura, T., and Oross, J.W. 1989 Charasomes are not essential for photosynthetic utilization of exogenous HCO₃⁻ in *Chara corallina*. *Protoplasma* 151:106-114.
- Fisahn, J., McConnaughey, T., and Lucas, W.J. 1989 Oscillations in extracellular current, external pH and membrane potential and conductance in the alkaline bands of *Nitella* and *Chara*. *J. Exp. Bot.* 40: 1185-1193.
- Kochian, L.V., Shaff, J.E., and Lucas, W.J. 1989 High-affinity K⁺ uptake in maize roots: a lack of coupling with H⁺ efflux. *Plant Physiol.* 91:1202-1211.
- Lucas, W.J. and Fisahn, J. 1989 Oscillations and inversions in the extracellular current profiles of *Chara* and *Nitella*. In: Plant Membrane Transport, eds., J. Dainty, E. Marre, M.I. DeMichelis, F. Rasi-Caldogno, Elsevier, Amsterdam, pp25-29.
- Wolf, S., Deom, C. M., Beachy, R. N., and Lucas, W. J. 1989 Movement protein of tobacco mosaic virus modifies plasmodesmatal size exclusion limit. *Science* 246:377-379.
- Fisahn, J. and W. J. Lucas. 1990 Inversion of extracellular current and axial voltage profile in *Chara* and *Nitella*. *J. Membr. Biol.* 113:1-8.
- Robards, A. W., Jongsma, H., Lucas, W J., Pitts, J., and Spray, D. 1990 Parallels in cell-to-cell junctions in

plants and animals. Springer-Verlag, Berlin, 283 p.

- Lucas, W. J., Wolf, S., Deom, C. M., Kishore, G. M., and Beachy, R. N. 1990 In: Parallels in Cell-to-Cell Junctions in Plants and Animals, eds., A.W. Robards, H. Jongsma, W.J. Lucas, J. Pitts, D. Spray, Springer-Verlag, Berlin, pp 261-272.
- Robards, A.W. and Lucas, W. J. 1990 Plasmodesmata. *Ann. Rev. Plant Physiol. Plant Mol. Biol.* 41:369-419.
- Lucas, W. J., Lansing, A., deWet, J. R., and Walbot, V. 1990 Introduction of foreign DNA into walled plant cells via liposomes injected into the vacuole: a preliminary study. *Physiol. Plant.* 79:184-189.
- Fisahn, J. and Lucas, W. J. 1990 Application of asymmetric alternating voltage pulse series for investigation of the action potential in *Chara*. *Plant & Cell Physiol.* 31:155-157.
- Deom, C. M., Schubert, K., Wolf, S., Holt, C., Lucas, W. J., and Beachy, R. N. 1990 Molecular characterization and biological function of the movement protein of tobacco mosaic virus in transgenic plants. *Proc. Natl. Acad. Sci. USA.* 87:3284-3288.
- 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.
- Deom, C. M., Wolf, S., Holt, C. A., Lucas, W. J., and Beachy, R. N. 1991 Altered function of the tobacco mosaic virus movement protein in a hypersensitive host. *Virology* 180:251-256.
- Kochian, L. V. and Lucas, W. J. 1991 Do plasmalemma oxidoreductases play a role in plant mineral ion transport? In: *CRC Series Oxidoreductases at the Plasma Membrane: Relation to Growth and Development, Volume Plants*, eds F.L. Crane, D.J. Morre and H. Low, pp. 189-205.
- Mimura, T., Frost-Shartzner, S. A., and Lucas, W. J. 1991 Influence of protein synthesis inhibitors on the extracellular current pattern and electrophysiological properties of internodal cells of *Chara corallina* *Canadian J Botany* 69: 1109-1115.
- Fisahn, J. and Lucas, W. J. 1991 Autonomous local area control over membrane transport in *Chara* internodal cells. *Plant Physiology* 95:1138-1143.
- Lucas, W. J. and Wolf, S. 1991 Plasmodesmata function probed using transgenic tobacco plants. In: *Phloem Transport and Assimilate Compartmentation*, eds, J.-L. Bonnemain, S. Delrot, W.J. Lucas, J. Dainty, Ouest Editions-Presses Academiques, Paris, pp 106-115.
- Bonnemain, J.-L., Delrot, S., Lucas, W. J., and Dainty, J. 1991 *Phloem Transport and Assimilate Compartmentation*. Ouest Editions-Presses Academiques, Paris, 344pp.
- Berna, A., Gafny, R., Wolf, S., Lucas, W. J., Holt, C. A., Beachy, R. N. 1991 The TMV movement protein: Role of the C-terminal 73 amino acids in subcellular localization and function. *Virology* 182:682-689.

- Wolf, S., Deom, C. M., Beachy, R. N., and Lucas, W. J. 1991 Plasmodesmatal function is probed using transgenic tobacco plants that express a virus movement protein. *Plant Cell* 3:593-604.
- Fisahn, J., and Lucas, W. J. 1992 Direct measurement of the reversal potential and current-voltage characteristics in the acid and alkaline regions of *Chara corallina*. *Planta* 186:241-248.
- Fisahn, J., Hansen, U.-P., and Lucas, W. J. 1992 Reaction kinetic model of a proposed plasma membrane two-cycle H⁺-transport system of *Chara corallina*. *Proc. Natl. Acad. Sci.* 89:3261-3265.
- Lucas, W. J. 1992 Spatial and temporal control of ion transport at the plasma membrane of *Chara corallina*. In: *Oscillations and Morphogenesis*, ed., L. Rensing, Marcel Dekker, New York, pp 413-425.
- Anderson, J. A., Huprikar, S. S., Kochian, L. V., Lucas, W. J., and Gaber, R. F. 1992 Functional expression of a probable *Arabidopsis thaliana* potassium channel in *Saccharomyces cerevisiae*. *Proc. Natl. Acad. Sci.* 89:3736-3740.
- Ding, B., Haudenschild, J., Hull, R. J., Wolf, S., Beachy, R. N., and Lucas, W. J. 1992 Secondary plasmodesmata are specific sites of localization and function of the tobacco mosaic virus movement protein. *Plant Cell* 4:915-928.
- Frost-Shartzter, S. A., Fisahn, J., and Lucas, W. J. 1992 Simultaneous measurement of extracellular current and membrane potential of *Chara corallina* internodal cells during light-induced modulation of H⁺ transport. *C. R. Acad. Sci. Paris* 315:247-254.
- Kochian, L. V., Schaff, J. E., Knjhtreiber, W., Jaffe, L. F., and Lucas, W. J. 1992 Use of an extracellular vibrating ion-selective microelectrode system for the quantification of K⁺, H⁺, and Ca²⁺ fluxes in maize roots and maize suspension cells. *Planta* 188: 601-610.
- Schachtman, D. P., Schroeder, J. I., Lucas, W. J., Anderson, J. A., and Gaber, R. F. 1992 Expression of an inward-rectifying potassium channel by the *Arabidopsis KATI* cDNA. *Science* 258:1654-1658.
- Lucas, W. J., Olesinski, A., Hull, R. J., Haudenschild, J., Deom, C. M., Beachy, R. N., and Wolf, S. 1993 Influence of the tobacco mosaic virus 30-kDa movement protein on carbon metabolism and photosynthate partitioning in transgenic tobacco plants. *Planta* 190:88-96.
- Ding, B., Haudenschild, J. S., Willmitzer, L., and Lucas, W. J. 1993 Development of secondary plasmodesmata is arrested in tobacco expressing a yeast derived invertase gene. *The Plant Journal* 4:179-189.
- Lucas, W. J. 1993 Process of virus systemic infection studied using microinjection procedures. In: *Genetic Engineering, Molecular Biology and Tissue Culture for Crop Pest and Disease Management*, ed., P. Vidhyasekaran, pp 3-15, CRC Press, Dehli.
- Moussatos, V. V., Lucas, W. J., and Gilchrist, D. G. 1993 Characterization of physiological changes in AAL-toxin-induced necrosis in *Lycopersicon esculentum* Mill. II. Timing and rate of sucrose transport

- associated with *Asc* locus sensitivity or resistance to AAL-toxin. *Physiological and Molecular Plant Pathology* 42:359-371.
- Lucas, W. J., and Wolf, S. 1993 Plasmodesmata: the intercellular organelle of green plants. *Trends in Cell Biology* 3:308-315.
- Lucas, W. J., Ding, B., and van der Schoot, C. 1993 Plasmodesmata and the supracellular nature of plants. *Tansley Review #58. New Phytologist* 125:435-476.
- Lapidot, M., Gafny, R., Ding, B., Wolf, S., Lucas, W. J., and Beachy, R. N. 1993 Dysfunctional movement protein of tobacco mosaic virus that partially modifies the plasmodesmata and limits virus spread in transgenic plants. *Plant Journal* 4:959-970
- Lucas, W. J. 1993 Viral movement proteins and macromolecular trafficking through plasmodesmata. In: "Plant Signals in Interaction with Others." J. Schultz, and I Raskin, eds. *Proceedings of 1993 Penn State Symposium in Plant Physiology, ASPP*, pp 79-92.
- Fujiwara, T., Giesman-Cookmeyer, D., Ding, B., Lommel, S. A., Lucas, W. J. 1993 Cell-to-cell trafficking of macromolecules through plasmodesmata potentiated by the red clover necrotic mosaic virus movement protein. *Plant Cell* 5:1783-1794.
- Kochian, L. V., Garvin, D. F., Shaff, J. E., Chilcott, T. C., and Lucas, W. J. 1993 Towards an understanding of the molecular basis of plant K⁺ transport: characterization of cloned K⁺ transport cDNAs. *Plant and Soil* 155:115-118.
- Franceschi, V. R., Ding, B., and Lucas, W. J. 1994 Mechanism of plasmodesmata formation in characean algae in relation to evolution of intercellular communication in higher plants. *Planta* 192:347-358.
- Noeiry, A. O., Lucas, W. J., and Gilbertson, R. L. 1994 Two Proteins of a plant DNA virus coordinate nuclear and plasmodesmal transport. *Cell* 76:925-932.
- Wolf, S., and Lucas, W. J. 1994 Virus movement proteins and other molecular probes of plasmodesmata function. In: Use of Transgenic Plants and Mutants to Study Whole Plant Physiology, ed., M. Stitt, Special Issue of *Plant, Cell and Environment* 17:573-585.
- Sanger, M., Passmore, B., Falk, B., Bruening, G., Ding, B., and Lucas, W. J. 1994 Symptom severity of beet western yellows virus strain ST9 is conferred by the ST9-associated RNA and is not associated with virus release from the phloem. *Virology* 200:48-55.
- Waigmann, E., Lucas, W. J., Citovsky, V., and Zambryski, P. 1994 Direct functional assay for tobacco mosaic virus cell-to-cell movement protein and identification of a domain involved in increasing plasmodesmal permeability. *Proc. Natl Acad. Sci. (USA)* 91:1433-1437.
- Cleland, R. E., Fujiwara, T., and Lucas, W. J. 1994 Plasmodesmal-mediated cell-to-cell transport in wheat roots is modulated by anaerobic stress. *Protoplasma* 178:81-85.

- Lucas, W. J., and Gilbertson, R. L. 1994 Plasmodesmata in relation to viral movement within leaf tissues. *Annual Review of Phytopathology* 32:387-411.
- Van der Schoot, C., and Lucas, W. J. 1995 Microinjection and the study of tissue patterning in plant apices. In: *Methods in Plant Molecular Biology*, eds., P. Maliga, D.F. Klessig, A.R. Cashmore, W. Gruissem, J.E. Varner, Cold Spring Harbor Press. pp173-189.
- Karrer, E. E., Lincoln, J. E., Hogenhout, S., Bennett, A. B., Bostock, R. M., Martineau, B., Lucas, W. J., Gilchrist, D. G., and Alexander, D. 1995 In situ isolation of mRNA from individual cells: creation of cell-specific cDNA libraries. *Proc. Natl. Acad. Sci. USA* 92:3814-3818.
- Van der Schoot, C., Dietrich, M., Storms, M., Verbeke, J. A., and Lucas, W. J. 1995 Establishment of cell-to-cell communication pathway between separate carpels during gynoecium development. *Planta* 195:450-455.
- Ding, B., Qiubo, L., Nguyen, L., Palukaitis, P., and Lucas, W. J. 1995 Cucumber mosaic virus 3a protein potentiates cell-to-cell trafficking of CMV RNA in tobacco plants. *Virology* 207:345-353.
- Madore, M. A., and Lucas, W. J. 1995 Carbon Partitioning and Source-Sink Interactions in Plants. *Current Topics in Plant Physiology* Volume 13, pp 287.
- Wolf, S., Olesinski, A. A., Balachandran, S., and Lucas, W. J. 1995 Movement protein expression and carbohydrate partitioning. In: *Carbon Partitioning and Source-Sink Interactions in Plants*, M.A. Madore and W.J. Lucas, eds. *Current Topics in Plant Physiology* 13:117-129.
- Olesinski, A. A., Lucas, W. J., Galun, E., and Wolf, S. 1995 Pleiotropic effects of TMV-MP on carbon metabolism and export in transgenic tobacco plants. *Planta* 197:118-126.
- Balachandran, S., Hull, R. J., Vaadia, Y., Wolf, S., and Lucas, W. J. 1995 Tobacco mosaic virus movement protein-induced change in carbon partitioning originates from the mesophyll and is independent of change in plasmodesmal size exclusion limit. *Plant Cell & Environment* 18:1301-1310.
- Chilcott, T. C., Frost-Shartzner, S., Iverson, M. W., Garvin, D. F., Kochian, L. V., and Lucas, W. J. 1995 Potassium transport kinetics of *KATI* expressed in *Xenopus* oocytes: A proposed molecular structure and field effect mechanism for membrane transport. *C.R. Acad. Sci. Paris* 318:761-771.
- Fleurat-Lessard, P., Bouche-Pillon, S., Leloup, C., Lucas, W. J., Serrano, R., and Bonnemain, J.-L. 1995 Absence of plasma membrane H⁺-ATPase in plasmodesmata located in pit-fields of the young reactive pulvinus of *Mimosa pudica* L. *Protoplasma* 188:180-185.
- Fisahn, J., and Lucas, W. J. 1995 Spatial organization of transport domains and subdomain formation in the plasma membrane of *Chara corallina*. *J. Membrane Biology* 147:275-281.
- Lucas, W. J. 1995 Plasmodesmata: intercellular channels for macromolecular transport in plants. *Current Opinion in Cell Biol.* 7:673-680.

- Lucas, W. J., Bouche-Pillon, S., Jackson, D. P., Nguyen, L., Baker, L., Ding, B., and Hake, S. 1995 Selective trafficking of KNOTTED1 and its mRNA through plant plasmodesmata. *Science* 270:1980-1983.
- Chilcott, T. C., Lucas, W. J., Franceschi, V. R., and Coster, H. G. L. 1996 Novel method for *in vivo* studies of plasmodesmata in *Chara corallina* using impedance spectroscopy. *C.R. Acad. Sci. Paris* 319:17-27.
- Rout, J. R., and Lucas, W. J. 1996 Characterization and manipulation of embryogenic response from in-vitro-cultured immature inflorescence of rice (*Oryza sativa* L.). *Planta* 198:127-138.
- Olesinski, A. A., Almon, E., Navot, N., Galun, E., Lucas, W. J., and Wolf, S. 1996 Tissue specific expression of tobacco mosaic virus movement protein in transgenic potato plants alters plasmodesmal function and carbohydrate partitioning. *Plant Physiology* 111:541-550.
- Gilbertson, R. L., and Lucas, W. J. 1996 How do plant viruses traffic on the 'vascular highway'? *Trends in Plant Science* 1:260-268.
- Ding, B., and Lucas, W. J. 1996 Secondary Plasmodesmata: Biogenesis, Special Functions and Evolution. In: Membranes: Specialized Functions in Plant Cells, eds., M. Smallwood, P. Knox, D. Bowles, BIOS Scientific Publishers Ltd., Oxford pp489-506.
- Mezitt, L. A., and Lucas, W. J. 1996 Plasmodesmal cell-to-cell transport of proteins and nucleic acids. *Plant Molecular Biology* 32: 251-273.
- Smart, C. J., Garvin, D. F., Prince, J. P., Lucas, W. J., and Kochian, L. V. 1996 The molecular basis of potassium nutrition in plants. *Plant and Soil* 187: 81-89.
- Wang, H.L., Gilbertson, R.L., and Lucas, W.J. 1996 Plant infection domains of bean dwarf mosaic virus in *Phaseolus vulgaris* and *Nicotiana benthamiana*. *Phytopathology* 86:1204-1214.
- Nguyen, L., Lucas, W.J., Ding, B., and Zaitlin, M. 1996 Viral RNA trafficking is inhibited in replicase-mediated resistant transgenic tobacco plants. *Proc. Natl. Acad. Sci. USA* 93: 12643-12647.
- Lucas, W.J., Balachandran, S., Park, J., and Wolf, S. 1996 Plasmodesmal companion cell-mesophyll communication in the control over carbon metabolism and phloem transport: insights gained from viral movement proteins. *J. Experimental Botany* 47: 1119-1128.
- Wolf, S., and Lucas, W.J. 1997 Plasmodesmal-mediated plant communication network: Implications for controlling carbon metabolism and resource allocation. In: *A Molecular Approach to Primary Metabolism in Higher Plants*, eds., C. Foyer, P Quick, Taylor & Francis, London pp 219-236.
- Balachandran, S., Hull, R.J., Martins, R.A., Vaadia, Y., and Lucas, W.J. 1997 Influence of environmental stress on biomass partitioning in transgenic tobacco plants expressing the movement protein of tobacco mosaic virus. *Plant Physiology* 114: 475-481.
- Lucas, W.J. 1997 Application of microinjection techniques to plant nutrition. *Plant and Soil* 196: 175-189.

- Rojas, M.R., Zerbini, F.M., Allison, R.F., Gilbertson, R.L., and Lucas, W.J. 1997 Capsid protein and helper component-proteinase function as potyvirus plasmodesmal movement proteins. *Virology* 237: 283-295.
- Balachandran, S., Xiang, Y., Schobert, C., Thompson, G.A., and Lucas, W.J. 1997 Phloem sap proteins of *Cucurbita maxima* and *Ricinus communis* have the capacity to traffic cell to cell through plasmodesmata. *Proc. Natl. Acad. Sci. USA* 94:14150-14155.
- Almon, E., Horowitz, M., Wang, H.-Li, Lucas, W.J., Zamski, E., Wolf, S. 1997 Phloem-specific expression of the tobacco mosaic virus movement protein alters carbon metabolism and partitioning in transgenic potato plants. *Plant Physiology* 115:1599-1607.
- Kragler, F., Lucas, W.J., and Monzer, J. 1998 Plasmodesmata: dynamics, domains and patterning. *Annals Botany* 81: 1-10.
- Jorgensen, R.A., Atkinson, R.G., Forster, R.L.S., and Lucas, W.J. 1998 An RNA-based information superhighway in plants. *Science* 279: 1486-1487.
- Sudarshana M.R., Wang, H.L., Lucas, W.J., and Gilbertson, R.L. 1998 Dynamics of bean dwarf geminivirus cell-to-cell and long-distance movement in *Phaseolus vulgaris* revealed using the green fluorescent protein. *Molecular Plant-Microbe Interactions*. 11: 277-291.
- Ishiwatari, Y., Fujiwara, T., McFarland, K.C., Nemoto, K, Hayashi, H., Chino, M., and Lucas, W.J. 1998 Rice phloem thioredoxin h has the capacity to mediate its own cell-to-cell transport through plasmodesmata. *Planta* 205: 12-22.
- Wang, H. L., Wang, Y., Giesman-Cookmeyer, D., Lommel, S.A., and Lucas, W.J. 1998 Plant viral movement protein mutations restrict host range and identify an intercellular barrier to long-distance movement. *Virology* 245: 75-89.
- Lough, T.J., Shash, K., Hofstra, K.R., Xoconostle-Cázares, B., Beck, D.L., Balmori, E., Forster, R.L.S., and Lucas, W.J. 1998 Molecular dissection of the mechanism by which potyvirus triple gene block proteins mediate cell-to-cell transport of infectious RNA. *Molecular Plant-Microbe Interactions* 11: 801-814
- Kragler, F., Monzer, J., Shash, K., Xoconostle-Cazares, B., and Lucas, W.J. 1998 Cell-to-cell transport of proteins: Requirement for unfolding and characterization of binding to a putative plasmodesmal receptor. *Plant Journal* 15: 367-381.
- Zhu, T., Lucas, W.J., and Rost, T.L. 1998 Directional cell-to-cell communication in *Arabidopsis* root apical meristem: I. Ultrastructural and functional analysis. *Protoplasma* 203: 35-47.
- Schobert, C., Baker, L., Szederkényi, J., Grossmann, P., Komor, E., Hayashi, H., Chino, M. and Lucas, W.J. 1998. Identification of immunologically related proteins in sieve-tube exudate collected from monocotyledonous and dicotyledenous plants. *Planta* 206: 245-252.

- Zhu, T., O'Quinn, R.L., Lucas, W.J., and Rost, T.L. 1998. Directional cell-to-cell communication in *Arabidopsis* root apical meristem: II. Dynamics of plasmodesmatal formation. *Protoplasma* 204: 84-93.
- Rojas, M.R., Noueir, A.O., Lucas, W.J., and Gilbertson, R.L. 1998 Bean dwarf mosaic geminivirus movement proteins recognize DNA in a form- and size-specific manner. *Cell* 95: 105-113.
- Xoconostle-Cázares, B. Xiang, Y., Ruiz-Medrano, R., Wang, H.-L., Monzer, J., Yoo, B.-C., McFarland, K.C., Franceschi, V.R., and Lucas, W.J. 1999. Plant paralog to viral movement protein potentiates transport of mRNA into the phloem. *Science* 283:94-98.
- Wang, H.-L., Sudarshana, M. R., Gilbertson, R. L., and Lucas, W. J. 1999. Analysis of cell-to-cell and long-distance movement of bean dwarf mosaic geminivirus-green fluorescent protein reporter in host and Non-host species: Identification of sites of resistance. *Molecular Plant-Microbe Interactions* 12:345-355.
- Lucas, W.J. 1999. Plasmodesmata and the cell-to-cell transport of proteins and nucleoprotein complexes. *Journal of Experimental Botany* 50:979-987.
- Lucas, W.J., and Wolf, S. 1999. Connections between virus movement, macromolecular signaling and assimilate allocation. *Current Opinion Plant Biology* 2:192-197.
- Ruiz-Medrano, R., Xoconostle-Cázares, B. and Lucas, W. J. 1999. Phloem long-distance transport of *CmNACP* mRNA: implications for supracellular regulation in plants. *Development* 126: 4405-4419.
- Lee, J.-Y., Yoo, B.-C., and Lucas, W. J. 2000. Parallels between nuclear-pore and plasmodesmal trafficking of information molecules. *Planta* 210:177-187.
- Schobert, C., Lucas, W.J., Franceschi, V.R., and Frommer, W.B. 2000. Intercellular transport and phloem loading of sucrose, oligosaccharides and amino acids. *Advances in Photosynthesis*, Vol. 9, *Photosynthesis: Physiology and Metabolism*, eds. R.C. Leegood, T.D. Sharkey and S. von Caemmerer, pp. 249-274.
- Schobert, C., Gottschalk, M., Kovar, D.R., Staiger, C.J., Yoo, B.-C., and Lucas, W.J. 2000. Characterization of profilin and actin in sieve-tube exudate from *Ricinus communis* L. *Plant Molecular Biology* 42:719-730.
- Kragler, F., Monzer, J., Xoconostle-Cázares, B., and Lucas, W. J. 2000. Peptide antagonists of the plasmodesmal macromolecular trafficking pathway. *EMBO Journal* 19:2856-2868.
- Lough, T. J., Emerson, S. J., Netzler, N., Sutherland, P., Carr, F., Lucas, W. J., and Forster, R. L. S. 2000. Cell-to-cell movement of potexviruses: evidence for a ribonucleoprotein complex involving the coat protein and the first triple gene block protein. *Molecular Plant-Microbe Interactions* 13:962-974.

- Chávez-Bárceñas, A. T., Valdéz-Alarcón, J. J., Martínez-Trujillo, M., Chen, L., Xoconostle-Cázares, B., Lucas, W. J., and Herrera-Estrella, L. (2000) Tissue specific and developmental pattern of expression of the rice *sps1* gene. *Plant Physiology* 124:641-653.
- Yoo, B.-C., Aoki, K., Xiang, Y., Campbell, L. R., Hull, R. J., Xoconostle-Cázares, B., Monzer, J., Lee J.-Y., Ullman, D. E., and Lucas, W. J. 2000. Characterization of *Cucurbita maxima* phloem serpin-1 (CmPS-1): a developmentally regulated elastase inhibitor. *Journal of Biological Chemistry* 275:35122-35128.
- Garrido-Ramirez, E. R., Sudarshana, M. R., Lucas, W. J., and Gilbertson, R. L. 2000. Bean dwarf mosaic geminivirus BV1 nuclear export factor is an avirulence determinant in *Phaseolus vulgaris*. *Molecular Plant-Microbe Interactions* 13:1184-1194.
- Xoconostle-Cázares, B., Ruiz-Medrano, R., and Lucas, W. J. 2000. CmPP36, a protein involved in Fe metabolism, requires proteolytic processing for entry into the phloem translocation pathway. *Plant Journal* 24:735-747.
- Gilbertson, R.L., Ruiz-Medrano, R., Sudarshana, M.R., and Lucas, W.J. 2001. Virus movement. In: *Encyclopedia of Plant Pathology*, Volume 2, 1116-1125, O. C. Maloy, T. D. Murray, eds., Wiley, New York.
- Ruiz-Medrano, R., Xoconostle-Cázares, B., Lucas, W. J. 2001. The phloem as a conduit for inter-organ communication. *Current Opinion in Plant Biology* 4:202-209.
- Lee, J.-Y., and Lucas, W. J. 2001. Phosphorylation of viral movement proteins: regulation of cell-to-cell trafficking. *Trends in Microbiology* 9:5-8.
- Provencher, L. A. M., Miao, L., Sinha, N., and Lucas, W. J. 2001. *Sucrose export defective1* encodes a novel protein implicated in chloroplast to nucleus signaling. *Plant Cell* 13:1127-1141.
- Lough, T. J., Emerson, S. J., Lucas, W. J. and Forster, R. L. S. 2001. *Trans*-complementation of long-distance movement of *White clover mosaic virus* triple gene block (TGB) mutants: phloem-associated movement of TGBp1. *Virology* 288:18-28.
- Lucas, W. J., Yoo, B.-C., and Kragler, F. 2001. RNA as a long-distance information macromolecule in plants. *Nature Reviews Cell & Molecular Biology* 2:849-857.
- Rojas, M. R., Jiang, H., Salati, R., Xoconostle-Cázares, B., Sudarshana, M. R., Lucas, W. J., and Gilbertson, R. L. 2001. Functional analysis of proteins involved in movement of the monopartite begomovirus, *Tomato yellow leaf curl virus*. *Virology* 291:110-125.
- Yoo, B.-C., Lee, J.-Y., and Lucas, W. J. 2002. Analysis of the complexity of protein kinases within the phloem sieve tube system: Characterization of *Cucurbita maxima* calmodulin-like domain protein kinase1. *J. Biol. Chem.* 277:15325-15332.

- Haywood, V., Kragler, F., and Lucas, W. J. 2002. Plasmodesmata: Pathways for protein and ribonucleoprotein signaling. *Plant Cell* 14:S303-S325.
- Foster, T. M., Lough, T. J. Emerson, S. J., Lee, R. H., Bowman, J. L., Forster, R. L. S., and Lucas, W. J. 2002. A surveillance system regulates selective entry of RNA into the shoot apex. *Plant Cell* 14:1497-1508.
- Aoki, K., Kragler, F., Xoconostle-Cázares, B., and Lucas, W. J. 2002. A subclass of plant heat shock cognate 70 chaperones carries a motif that facilitates trafficking through plasmodesmata. *Proc. Natl. Acad. Sci. USA* 99:16342-16347.
- Lee, J.-Y., Yoo, B.-C., Rojas, M., Gomez Ospina, N., Staehelin, L. A., and Lucas, W. J. 2003. Selective trafficking of non-cell-autonomous proteins mediated by NtNCAPP1. *Science* 299:392-396.
- Shimmen, T., Yonemura, S., Negoro, M., and Lucas, W.J. 2003. Studies on alkaline band formation in *Chara corallina*: ameliorating effect of Ca²⁺ on inhibition induced by osmotic shock. *Plant Cell Physiol.* 44:957-960.
- Gilbertson, R. L., Sudarshana, M., Hao, J., Rojas, M. R., and Lucas, W. J. 2003. Limitations on geminivirus genome size imposed by plasmodesmata and viral-encoded movement protein: insights into DNA trafficking. *Plant Cell* 15:2578-2591
- Yoo, B.-C., Kragler, F., Varkonyi-Gasic, E., Haywood, V., Archer-Evans, S., Lee, Y. M., Lough, T. J., and Lucas, W. J. 2004. A systemic small RNA signaling system in plants. *Plant Cell* 16:1979-2000.
- Lucas, W. J. and Lee, J.-Y. 2004. Plasmodesmata as a supracellular control network in plants. *Nature Review Mol. Cell Biol.* 5:712-726.
- Haywood, V., Yu, T.-S., Huang, N.-C. and Lucas, W. J. 2005. Phloem long-distance trafficking of *GIBBERELIC ACID INSENSITIVE* RNA regulates leaf development. *Plant Journal* 42:49-68.
- Rojas, M. R., Hagan, C., Lucas, W. J., and Gilbertson, R. L. 2005. Exploiting chinks in the plant's armor: Evolution and emergence of geminiviruses. *Annu. Rev. Phytopathol.* 43: 361-394.
- Lee, J.-Y., Taoka, K., Yoo, B.-C., Ben-Nissan, G., Kim, D.-J. and Lucas, W. J. 2005. Plasmodesmal-associated proein kinase in tobacco and *Arabidopsis* recognizes a subset of non-cell-autonomous proteins. *Plant Cell* 17:2817-2831.
- Gilbertson, R. L., Rojas, M. R., and Lucas, W. J. 2005. Plasmodesmata and the phloem: conduits for local and long-distance signaling. *Annual Plant Reviews* 18:162-187.
- Lucas, W. J. 2005. Plant viral movement proteins: Agents for cell-to-cell trafficking of viral genomes. *Virology* 344:169-184.

- Lough, T. J. and Lucas, W. J. 2006. Integrative plant biology: role of phloem long-distance macromolecular trafficking. *Annu. Rev. Plant Biol.* 57:203-232.
- Lough, T. J., Lee, R. H., Emerson, S. J., Forster, R. L. S. and Lucas, W. J. 2006. Functional analysis of the 5' untranslated region of potexvirus RNA reveals a role in viral replication and cell-to-cell movement. *Virology* 351:455-465.
- Seo, Y.-S., Rojas, M. R., Lee, J.-Y., Jeon, J.-S., Ronald, P., Lucas, W. J., and Gilbertson, R. L. 2006. A viral resistance gene from common bean functions across plant families and is up-regulated in a non-virus-specific manner. *Proc. Natl. Acad. Sci. U.S.A.* 103:11856-11861.