Jenny C. Mortimer BSc (Hons), MRes, PhD.

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EDUCATION AND RESEARCH EXPERIENCE

2014- **Director of Plant Systems Biology.** Joint BioEnergy Institute (JBEI), Lawrence Berkeley National Lab, USA
Engineering plants for improved biofuels and bioproducts.

2013-14 **RIKEN FPR Research Fellow**. Centre for Sustainable Resource Science, Yokohama, Japan.
Based in Biomass Engineering group, with Prof. Taku Demura.
Physiological roles of sphingolipid glycosylation in Arabidopsis.

2010-13 **Research Associate, BBSRC Sustainable Bioenergy Centre (BSBEC).**
Department of Biochemistry, University of Cambridge, UK, with Prof. Paul Dupree.
Biosynthesis and depolymerisation of glucuronoarabinoxylan (GAX).

2010 **Research Associate, Renewall (EU FP7 funded).**
Department of Biochemistry, University of Cambridge, UK, with Prof. Paul Dupree.
Improving plant cell walls for use as a renewable industrial feedstock.

2007-10 **Research Associate (BBSRC funded).**
Department of Biochemistry, University of Cambridge, UK, with Prof. Paul Dupree.
The function and specificity of the Golgi nucleotide sugar transporters (GONST) in Arabidopsis.

2008 **PhD, Plant Physiology (BBSRC funded).** University of Cambridge, UK, Dept. Plant Sciences and Downing College. Plant annexins: calcium-binding peroxidases; supervisor, Dr Julia Davies. (Defended 2007).

2003 **MRes Bioinformatics, Distinction (EPSRC funded).** University of Exeter, UK (research project, La Trobe University, Australia with Dr Dave Edwards).

2002 **BSc (Hons) Biology II.i.** University of Bristol, UK

Publications:

- Sawake S, Tajima N, Mortimer JC, Lao J, Ishikawa T, Yu X, Yamanashi Y, Yoshimi Y, Kawai-Yamada M, Dupree P, Tsumuraya Y, Kotake T. KONJAC1 and 2 are Key Factors for Generation of GDP-Mannose and Affect L-Ascorbic Acid and Glucomannan Biosynthesis in Arabidopsis (Plant Cell, Accepted, Nov 2015).
- **Mortimer JC**, Blanc NF, Yu X, Anders N, Tryfona T, Sorieul M, YZ Ng, Zhang Z, Stott K, Dupree P (2015). A novel xylan in Arabidopsis primary cell walls is synthesised by GUX3, IRX9L, IRX10L and IRX14. Plant J., 83:413-426.
- Rogowski A, Briggs JA, **Mortimer JC**, Tryfona T, Terrapon N, Lowe EL, Baslé A, Day AM, Zheng H, Rogers TE, Yadav MP, Henrissat B, Martens EC, Dupree P, Gilbert HJ, Bolam DN (2015). Glycan complexity dictates microbial resource allocation in the large intestine, Nature Commun., 6: 7481.
- Dupree R, Simmons TJ, **Mortimer JC**, Patel D, Iugu D, Brown S, Dupree P (2015). Probing the Molecular Architecture of Plant Secondary Cell Walls Using Two- and Three-Dimensional ^{13}C Solid-State NMR Spectroscopy Reveals Distinct Xylan Conformations. Biochemistry, 54: 2335-2345. [**ACS Editors' Choice article**]
- Rautengarten C, Ebert B, Moreno I, Temple H, Herter T, Lik B, Doñas D, Moreno A, Saéz-Aguayo S, Blanco MF, **Mortimer JC**, Schultink A, Reiter WD, Dupree P, Scheller H, Orellana A (2014). The Golgi localized bi-functional UDP-Rhamnose/UDP-Galactose transporter family of Arabidopsis. Proc Natl Acad Sci USA, 111:11563-11568.
- Rogowski A, Baslé A, Farinas CS, Solovyova A, **Mortimer JC**, Dupree P, Gilbert HG, Bolam DN (2014). Evidence that GH115 alpha-glucuronidase activity, which is required to degrade plant biomass, is dependent on conformational flexibility. JBC, 289:53.
- Richards SL, Laohavisit A, **Mortimer JC**, Shabala L, Swarbreck SM, Shabala S, Davies JM (2014). Annexin 1 regulates the H_2O_2-induced calcium signature in *Arabidopsis thaliana* roots. Plant J., 77:136.
- Goue N, **Mortimer JC**, Zhang Z, Josserand M, Dupree P, Kakegawa K, Demura T (2013). Secondary cell wall characterization in a BY-2 inductive system. Plant Cell Tiss. Org., 115:223-232.

- Li X, Jackson P, Rubtsov DV, Blanc NMF, **Mortimer JC**, Turner SR, Krogh KB, Johansen KS, Dupree P (2013). Development and application of a high throughput carbohydrate profiling technique for analysing plant cell wall polysaccharides and polysaccharide hydrolases. Biotech. Biofuels, 6:94.
- **Mortimer JC**, Yu X, Albrecht S, Sicilia F, Huichalaf M, Ampuero D, Murphy AM, Matsunga T, Michaelson L, Matunaga T, Kurz S, Stephens E, Baldwin TC, Ishii T, Napier J, Weber APM, Handford MG, Dupree P (2013). Abnormal glycosphingolipid mannosylation triggers salicylic-acid mediated responses in Arabidopsis. Plant Cell, 25: 1881-1894.
- Van Acker R, Vanholme R, Storme V, **Mortimer JC**, Dupree P, Boerjan W (2013). Perturbation of lignin biosynthesis in *Arabidopsis thaliana* affects secondary cell wall composition and saccharification yield. Biotech. Biofuels, 6:46.
- Bromley JR, Busse-Wicher M, Tryfona T, **Mortimer JC**, Zhang Z, Brown D, Dupree P (2013). GUX1 and GUX2 glucuronyltransferases decorate distinct domains of glucuronoxylan with different substitution patterns, Plant J. 74: 423–434.
- Wang Y, **Mortimer JC**, Davis J, Dupree P, Keegstra K (2013). Identification of an additional protein involved in mannan biosynthesis. Plant J. 73: 105-117.
- Laohavisit A, Shang Z, Rubio L, Cuin T, Véry AA, **Mortimer JC**, Macpherson N, Yang Y, Coxon KM, Battey NH, Brownlee C, Park O, Schroeder JI, Sentenac H, Shabala S, Webb AAR, Davies JM. (2012) *Arabidopsis thaliana* Annexin 1 forms the radical-activated plasma membrane Ca^{2+}-permeable channel in root cell growth. Plant Cell. 24:1522-1533.
- Anders N, Wilkinson MD, Lovegrove A, Freeman J, Tryfona T, Pellny TK, Weimar T, **Mortimer JC**, Stott K, Baker JM, Defoin-Platel M, Shewry P, Dupree P, Mitchell RAC (2012). Glycosyl transferases in family 61 mediate arabinofuranosyl transfer onto xylan in grasses. Proc Natl Acad Sci USA, 109: 989-993.
- **Mortimer JC**, Miles GP, Brown DM, Zhang Z, Segura M, Weimar T, Yu X, Seffen K, Stephens E, Turner SR, Dupree P. (2010) Branches are absent from xylan in Arabidopsis *gux* mutants: Potential for the simplification of lignocellulosic biomass. Proc Natl Acad Sci USA. 107: 17409-17414.
- Yamaguchi, Goue N, Igarashi H, Ohtani M, Nakano Y, **Mortimer JC**, Nishikubo N, Kubo M, Katayama Y, Kakegawa K, Dupree P, Demura T. (2010) Vascular related NAC domain6 (VND6) and VND7 effectively induce transdifferentiation into xylem vessel elements under control of an induction system. Plant Physiol. 153: 906-14.
- Goubet F, Barton CJ, **Mortimer JC**, Yu X, Zhang Z, Miles GP, Seffen K, Richens J, Liepman A, Dupree P. (2009) Synthesis of glucomannan in Arabidopsis stems and in early embryogenesis by AtCSLA proteins. Plant J. 60: 527-538. Featured article.
- Laohavisit A, **Mortimer JC**, Demidchik VD, Coxon K, Stancombe M, Macpherson N, Brownlee C, Hofmann A, Webb AAR, Midema H, Battey NH, Davies JM. (2009) *Zea mays* annexins modulate cytosolic free Ca^{2+}, plasma membrane Ca^{2+} transport and have peroxidase activity. Plant Cell 21: 479-493.
- Demidchik VD, Lin S, Shin R, Thompson E, Rubio L, Laohavisit A, **Mortimer JC**, Chivasa S, Slabas A, Glover B, Schachtman D, Shabala S, Davies J. (2009) Plant extracellular ATP signalling by plasma membrane NADPH oxidase and calcium channels. Plant J. 58: 903-918. Featured article.
- **Mortimer JC**, Coxon K, Laohavisit A, Davies JM. (2009) Heme-independent soluble and membrane-associated peroxidase activity of a *Zea mays* annexin preparation. Plant Sig. Behav. 4: 428-430.
- Ridlova G, **Mortimer JC**, Maslen S, Dupree P, Stephens E. (2008) Isotope tagging and normal-phase liquid chromatography mass spectrometry for the relative quantitation of polysaccharides. Rapid Commun. Mass Spectrom. 22: 2723-2730.
- **Mortimer JC**, Laohavisit A, Miedema H, Davies JM. (2008) Voltage, reactive oxygen species and calcium. Plant Sig. Behav. 3: 1393.
- **Mortimer JC**, Laohavisit A, Macpherson N, Webb AAR, Brownlee C, Battey NH, Davies JM. (2008) Annexins: multi-functional components of growth and adaptation. J. Ex. Bot. 59(3): 533-544.

- Macpherson N, Takeda S, Shang Z, Dark A, **Mortimer JC**, Brownlee C, Dolan L, Davies JM. (2008) NADPH oxidase involvement in cellular integrity. Planta, 227:1415-1418.
- **Mortimer JC**, Batley J, Love CG, Logan E, Edwards D, (2005). Simple sequence repeat (SSR) and GC distribution in the *A. thaliana* genome. J. Plant Biotech. 7: 17-25.