

Jenny C. Mortimer

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Australia *Website:* www.mortimerlab.org
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POSITION **Associate Professor, University of Adelaide, Australia**
Affiliate Staff Scientist, Lawrence Berkeley National Laboratory, USA

RESEARCH INTERESTS Plant cell wall biosynthesis, sustainable bioenergy, glycosylation, transporters, glycolipids, synthetic biology, plant physiology, plant-microbe interactions, spacehort.

EDUCATION

University of Cambridge, UK

Ph.D., Plant Physiology, 2008

BBSRC funded. Advisor: Dr Julia Davies

University of Exeter, UK

MRes., Bioinformatics, 2003. Distinction. EPSRC funded.

University of Bristol, UK

BSc(hons), Biology, II.i, 2002

RESEARCH EXPERIENCE

University of Adelaide Australia,

- Associate Professor of Plant Synthetic Biology 2020-2021-
- Adjunct Associate Professor 2020-

Lawrence Berkeley National Laboratory, Berkeley, CA, USA

- Affiliate Staff Scientist 2014-2021-
- Staff Scientist (Career) 2018-20
- Research Scientist (Career) 2014-18

Joint BioEnergy Institute (JBEI), Emeryville, CA, USA

- Acting Vice-President, Life-Cycle and TechnoEconomic Analysis and Agronomy Division 2019
- Deputy Vice-President, Feedstocks Division 2016-20
- Director of Plant Systems Biology, Feedstocks Division 2014-

Centre for Sustainable Resource Science, RIKEN, Yokohama, Japan

RIKEN FPR Fellow

“Physiological roles of sphingolipid glycosylation in plants”

BBSRC Sustainable Bioenergy Centre (BSBEC), Department of Biochemistry, University of Cambridge, Cambridge, UK

2010-13
Postdoctoral Research Associate; Supervisor: Prof. Paul Dupree

“Biosynthesis and depolymerization of glucuronoarabinoxylan (GAX)”

Department of Biochemistry, University of Cambridge, Cambridge, UK 2010

Postdoctoral Research Associate; Supervisor: Prof. Paul Dupree

“Cell wall analysis of Renewall program biomass”

Renewall Postdoctoral Research Fellowship (EU funded)

Department of Biochemistry, University of Cambridge, Cambridge, UK 2007-10

Postdoctoral Research Associate; Supervisor: Prof. Paul Dupree

“The function and specificity of the Golgi nucleotide sugar transporters (GONST) in *Arabidopsis*” (BBSRC funded)

Department of Plant Sciences, University of Cambridge, Cambridge, UK 2003-07

Ph.D. Research Project; Supervisor: Dr Julia Davies

“Plant annexins: calcium-binding peroxidases” (BBSRC funded)

Department of Primary Industries Victoria, Melbourne, Australia 2003

Masters Research Project; Supervisor: Dr Dave Edwards.

“Simple Sequence Repeat Distribution in the *Arabidopsis thaliana* genome” (DPI funded)

Department of Biological Sciences, University of Bristol, Bristol, UK 2001

BSc Honours project; Supervisor: Prof. Keith Stobart

“Use of laevulinic acid to investigate chlorophyll biosynthesis in barley”

CURRENT FUNDING

- **US Department of Energy**, The Joint BioEnergy Institute (JBEI). \$125M. PI: Prof. Jay Keasling, I am named co-PI (Principal Investigator). 10/2017-09/2022
- **IARPA – FELIX** (Finding Engineering-Linked Indicators). Developing test cases for performers. ~\$1M. PI: Prof. Sue Celniker, I am named co-PI. 06/2018-10/2021
- **US Department of Energy**, O-Acetylation and Methylation Engineering of Plant Cell Walls for Enhanced Biofuel Production. \$2.5M. PI: Dr. Kolby Jardine, I am named co-PI 10/2018-09/2023
- **US Department of Energy BER, m-CAFEs**: Microbial Community Analysis and Functional Evaluation in Soils Science Focus Area. PIs Trent Northen, Adam Deutschbauer, \$3M. I am named Co-PI. 10/2019-09/2022
- **US Department of Energy**, High-throughput determination of a subcellular metabolic network map of plants. \$2.4M. PI: Prof. Sue Rhee, I am named co-PI. 10/2019-09/2022
- **LBNL LDRD**, Roots 2.0: Reimagining root biochemistry for optimized plant-microbe interactions. \$675K. PI. 10/2019-09/2021
- **US Department of Energy Environmental Molecular Science Laboratory**, Exploring the native cell wall nanoarchitecture of engineered bioenergy crops via multi-dimensional solid-state NMR. PI. (Equipment and technical support, estimated in kind support of ~\$115K). 10/2020-09/2022

PAST FUNDING

- **LBNL**, Aquatic Park Ecosystem Mesocosm (EcoPOD) Technology Development. ~\$900K. Co-PI. 10/2017-09/2020
- **US Department of Energy Environmental Molecular Science Laboratory**, Applying multi-dimensional solid state NMR to explore the nanoarchitecture of native and engineered plant cell walls. PI. (Equipment and technical support, estimated in kind support of ~\$115K). 10/2018-09/2020
- **LBNL LDRD**, Identifying bioactive compounds across the tree of life: from bacteria, to plants, to human organoids. PI: Dr. Mina Bissel; I was named Co-PI (0.05 FTE), 0.5 RA. 10/2016-09/2018
- **US Department of Energy, The Joint BioEnergy Institute (JBEI)**. PI: Prof Jay Keasling. 100% FTE, plus 5 FTE in my group. 10/2014-09/2017
- **Molecular foundry (LBNL)** –to use equipment such as the MALDI at the foundry. PI. In kind cost of ~\$15K 2016-17
- **RIKEN FPR fellowship grant** – Competitive award for which I independently wrote the grant. 1,000,000 ¥ annual research budget, plus my salary and travel money. Three-year duration. [Only utilized 1 year, due to JBEI move]. 2013-14
- **Travel awards: Biochemical Society (£700)**, the **Perham/Dixon fund** (Biochemistry Dept, Cambridge, up to £1000), and the **Gordon Research Conference (GRC) committee (£380)** to attend the GRC and the related symposium on Plant Lipids (2013); **Cambridge Philosophical Society** and **Downing College** (two awards from each) to attend meetings during my PhD (total value ~£800; from 2003-2006). 2003-06
- **BBSRC** and **EPSRC** M.Res. and Ph.D. scholarships, to cover tuition fees and living costs. 2002-06

PENDING FUNDING

- **ARC Discovery project DP22** Unravelling plant mechanisms that sense and respond to salt stress. Chief Investigator (CI)
- **ARC Discovery project DP22** Hormonal regulation of mitochondrial stress signalling is tissue-specific Co-CI
- **ARC Training Centre** for Accelerated Future Crop Development. Co-CI
- **ARC Centre of Excellence “Plants for Space”**. Co-CI
- **AgriFood & Wine FAME Strategy Grant “Controlled Environment Agriculture”**. CI

CONFERENCE and OTHER INVITED SEMINARS

- Science under COVID: Diversity Panel Session, Plant Cell Wall Biology 2021 (virtual) 2021
- Mapping the spatial and temporal dynamics of plant root colonization by a synthetic rhizobacterial community in a fabricated ecosystem. ASM World Microbe Forum (virtual) [Invited Speaker] 2021
- Learning to Engineer Plant Glycans, University of Western Australia Seminar Series. (virtual) [Invited Speaker] 2021
- Learning to Engineer Plant Glycans, JBEI Seminar Series (virtual) [Invited Speaker] 2021

- Learning to Engineer Plant Glycans, La Trobe University Seminar Series (virtual) [**Invited Speaker**] 2021
- Learning to Engineer Plant Glycans, Waite Research Institute Seminar Series. Adelaide, Australia. [**Invited Speaker**] 2021
- Learning to Engineer Plant Glycans, 7th Leibniz Plant Biochemistry Symposium. (virtual). [**Invited Speaker**] 2021
- A systems approach to testing the impact of gene-environment interactions on an engineered crop. International Plant Systems Biology Conference. Virtual. [**Invited Speaker**] 2021
- Using fabricated ecosystems to bridge the lab-field scale gap. DOE Genomic Sciences PI Meeting (virtual) [**Invited Speaker**] 2021
- Using fabricated ecosystems to bridge the lab-field scale gap. DOE Genomic Sciences PI Meeting (virtual) [**Invited Speaker**] 2020
- Predictable Engineering of Plants for a Sustainable Future, Australian National University, Canberra, Australia (virtual) [**Invited Speaker**] 2020
- Engineering plants: where can it take us? Secretary of Energy's Advisory Board on Space [**Invited Speaker**] 2020
- Tools for sorghum tissue culture. Inter-BRC workshop on plant transformation. 2020
- Sweet green tales: efforts to unravel the complexities of plant polysaccharides" PMB, UC Berkeley, CA [**Invited speaker**] 2020
- Sweet green tales: efforts to unravel the complexities of plant polysaccharides, University of Adelaide, Australis [**Invited speaker**] 2020
- WEF code of Ethics, XV Cell Wall Meeting, Cambridge, UK [**Invited Session Chair** "Ethics in Plant Biology"] 2019
- Re-engineering biology for a sustainable future. Rakuten, San Mateo, CA. [**Invited Speaker**] 2019
- Engineered plant cell walls for improved biomass: exploring the effects on cell wall nanoarchitecture using solid state NMR. ACS, Orlando FL, [**Invited Speaker**] 2019
- Plant sphingolipid glycosylation, and its role in plant-microbe interactions. Institute for Integrative Biology, UC Riverside. [**Invited Speaker**] 2019
- The Plant Cell Wall: a renewable feedstock and plant-microbe interface, DOE BER Advisory Committee Meeting, Washington DC, April 26th 2019 2019
- Engineering biomass crops for improved biorefinery characteristics. Switchgrass Workshop, Noble Foundation, Ardmore, OK. [**Invited Speaker**] 2019
- JBEI biomass analytical capabilities. Switchgrass Workshop, Noble Foundation, Ardmore, OK. [**Invited Speaker**] 2019
- The plant cell wall-plasma membrane interface. ALS-U Biosciences workshop, LBNL, Berkeley CA. [**Invited Speaker**] 2019
- Enhancing Public Trust In Science: An International Code of Ethics for Scientific Research. AAAS Policy Forum, Washington DC [**Invited Speaker**]. 2018
- Developing a Code of Ethics for Scientists'. iCLEM [JBEI high school research program], 2018
- Plant sphingolipid glycosylation, and its role in plant-microbe interactions and cell wall biosynthesis; Hokkaido University, Japan [**Invited Speaker**]. 2018

- Science and suitcases - a personal view of a 4-continent scientific career; Hokkaido University, Japan [**Invited Speaker**]. 2018
- The Joint BioEnergy Institute: Engineering Biology for the BioEconomy, Technical University, Delft, Netherlands, May 8th 2018 [**Invited Speaker**]. 2018
- Sweet Green Tales", University of Leiden, Netherlands, May 9th 2018 [**Invited Speaker**]. 2018
- The Joint BioEnergy Institute: Engineering Biology for the BioEconomy", Lignocellulosic Biorefinery Network (LBNNet), Cheshire, UK, May 17th [**Invited Speaker**]. 2018
- Riddle of the Sphinx: how plant sphingolipid glycosylation impacts membrane organization, plant-microbe interactions and cellulose biosynthesis. Departmental Seminar, University of Nevada, Reno [**Invited Speaker**]. 2018
- GONST3 is a putative GDP-L-Galactose Transporter. The 6th International Conference on Plant Cell Wall Biology, Dalian, China. 2017
- Building a great plant cell wall: engineering plant biomass as a feedstock for biofuels and bioproducts, 14th Systems Biology Workshop, La Trobe University, Melbourne, Australia, [**Invited Speaker**]. 2017
- Riddle of the Sphinx: how sphingolipid glycosylation might impact membrane organization, plant-microbe interactions and cellulose biosynthesis, 14th Systems Biology Workshop, La Trobe University, Melbourne, Australia, [**Invited Speaker**]. 2017
- GDP-sugar transporters - an update. University of Melbourne, Australia [**Invited Speaker**]. 2017
- Sphingolipid glycosylation in plants: some implications for cellulose biosynthesis. ACS 2017 annual meeting - Cellulose Biosynthesis session, San Francisco, USA [**Invited speaker; Awarded "Best Presentation" of the session**]. 2017
- Unravelling plant glycan biosynthesis and assembly. Plant Genome Expression Center (PGEC), USDA, Berkeley, CA, USA [**Invited Speaker**]. 2017
- Progress towards optimized lignocellulosic feedstocks for bioenergy and the bioeconomy. Genomic Sciences Program Annual Meeting [**Invited speaker, Plenary**]. 2017
- Lignocellulose biosynthesis and nano-architecture. Biosciences Area Annual Retreat. Berkeley, CA 2017
- Untangling sphingolipid glycosylation and Function. 10th Georgia Glycoscience Symposium and 2016 Plant Polysaccharide Workshop, Athens GA, USA [**Invited speaker**]. 2016
- Identification of a putative sphingolipid ManT that is required for normal cellulose deposition in Arabidopsis. ASPB, Austin TX, USA. 2016
- Identification of a putative sphingolipid ManT that is required for normal cellulose deposition in Arabidopsis. XIVth Cell Wall Meeting, Chania, Greece. 2016
- Untangling Golgi Glycosylation. Dept Plant Science, UC Davis [**Invited speaker**]. 2016
- Unravelling Plant Sugar Biosynthesis and Assembly. BSE Divisional Seminar, LBNL. 2016

- Driving the Future: Advanced Biofuels R&D at the Joint BioEnergy Institute, 2016 2016
NorCal AIChE Symposium on Environment and Biotechnology, Lafayette, CA [**Invited speaker, Keynote**].
- Breaking down the walls - exploring plant biomass as a feedstock for renewable fuels, 2016
Lawrence Livermore National Lab Seminar Series [**Invited speaker**].
- GIPC biosynthesis and function, Pan American Plant Membrane Workshop, San Pedro 2016
de Atacama, Chile. [**Invited speaker**].
- Xylan Biosynthesis, Andres Bello University, Santiago, Chile. 2015
- Characterizing novel polysaccharide structures: primary wall xylan as an example. BESC 2015
Biomass Characterization Workshop, Athens GA, USA.
- Plant cell walls, membranes and immunity: a story of sugars. [**Invited seminar**]. Nara 2015
Institute of Science and Technology (NAIST), Japan.
- Plant Cells – The Green Factories of the Future? Yokohama City University Summer 2014
School “Proteins – Nature’s Robots”. [**Invited Speaker**]
- Breaking down walls: unexpected outcomes in the quest for improved biomass. [**Invited 2014
seminar**]. Graduate School of Science and Engineering, Saitama University, Japan.
- AtGONST1 - using a sugar transporter to investigate sphingolipid glycosylation. Plant 2014
Cell Wall Researchers' Network, Mt Tsukuba, Japan.
- The function of GONST1, a GDP-Mannose transporter: new insights into glycolipids and 2014
immunity. Biochemistry Department Research Day, University of Cambridge, UK.
- The function of GONST1, a GDP-Mannose transporter. UK-Japan Joint Meeting on Cell 2013
Biology, University of Cambridge, UK.
- Lignocellulosic bioenergy. Bioenergy-Optoelectronics Meeting, Cavendish Lab, 2013
University of Cambridge, UK [**Invited seminar**].
- Cell-wall biosynthesis and Golgi-resident sugar nucleotide transporters in Arabidopsis. 2013
Invited seminar, Temasek Institute, Singapore.
- Riddle of the Sphinx: Sphingolipid glycosylation - a possible role in plant immunity? 2013
[**Invited seminar**]. Department of Plant Sciences, University of Cambridge, UK.
- Xylan synthesis and deconstruction. BSBEC annual meeting, Crewe, UK. 2012
- A mutant in the Golgi GDP-Man transporter GONST1 has a constitutively active biotic 2012
stress response. Fourth Conference on Biosynthesis of Plant Cell Walls, Japan.
- Oligosaccharide structure determination using enzymatic profiling. Denmark-Japan-UK 2012
Joint meeting: Plant cell wall polysaccharides and acting enzymes, Japan.
- BSBEC cell wall sugars program meeting - update on progress every six months. 2010-13
- High-throughput analysis of xylan structure in lignin biosynthetic mutants. Renewall 2011
Meeting, Dundee, UK.
- Breaking down the (cell) walls: simplifying xylan in Arabidopsis. Invited seminar, 2011
Department of Plant Sciences, University of Cambridge, UK.
- Arabidopsis *gux* mutants: potential for simplification of lignocellulosic biomass. 2011
Renewall Meeting, Porto, Portugal.
- Mannan biosynthesis: a target for biofuel production. Invited seminar, Department of 2011
Plant Sciences, University of Cambridge, UK.

- The function of CslA proteins. Third conference on the Biosynthesis of Plant Cell Walls, Asilomar, USA. 2010
- Mannan biosynthesis: a target for biofuel production. Invited seminar, Department of Biological Sciences, University of Bristol, UK. 2008

SELECTED PEER-REVIEW ACTIVITIES

- Joint Genome Institute (JGI) Community Science Program panel reviewer. 2017-20
- **EMSL Proposal Review Panel**, Biosystem Dynamics and Design panel reviewer. Pacific Northwest National Lab, WA, USA (bi-annual). Panel Co-Chair (2019-) 2015-
- Ad hoc grant reviewer for DFG (German Research Foundation), BBSRC (UK) and La Trobe University (Australia) grant proposal process 2015-
- **Editor** at Plant Cell Physiology
- **Associate Editor** at the Plant Methods Journal (BMC) and the Experimental Biology and Medicine 2017-
- **Review Editor** for Frontiers in Plant Science, Frontiers in Plant Genetics 2016-
- Manuscript Reviewer for Current Opinion in Plant Biology, Plant Physiology, Biomass and Bioenergy, Nature Communications, Nature Biotechnology, PNAS, Journal of Experimental Botany, Molecular Plant, PLOS One etc. 2015-

SELECTED HONOURS AND AWARDS

- **Young Scientist** at the **World Economic Forum** Annual Meeting of New Champions, Tianjin, China (2016) and Dalian, China (2017) (nominated as part of global cohort of 50 scientists under 40). Activities included organization of an Innovator Hub on Green Chemistry and the BioEconomy, development of an "[Ethics in science](#)" framework and a Press Briefing "Young, talented and fighting for science". 2016-17
- **Treherne Studentship** (Prize for academic excellence in biological sciences, Downing College; University of Cambridge). Accompanied by £1500 pa. 2016-
- **Frank Smart Scholar** (Annual prize for outstanding graduate research; Plant Sciences; University of Cambridge). Accompanied by £1000 pa for research costs. 2005-07
- Research Associate, Corpus Christi College, University of Cambridge, UK 2004-06

TEACHING AND MENTORING EXPERIENCE

- **Supervisor of postdoctoral researchers (10) and research assistants (4)** 2014-
- **Supervisor of Visiting Masters students** (9; University of Groningen, Netherlands; University of Clermont-Ferrand, France; Agroparistech, France). 2014-
- **Graduate student examinations:** PhD (1; University of Melbourne); MPhil 1(1; University of Cambridge). 2021-
- **Day to day supervisor of graduate students** (4 PhD, 1 MPhil, University of Cambridge) 2010-13
- Trained in experimental techniques, provided experimental advice, proof read thesis drafts; held mock-vivas; assisted with university procedures.

- **Supervisor of final year undergraduate honors** research projects (8) and **summer students** (8; including 3 funded by Biochemical Society). (University of Cambridge, UC Berkeley, San Francisco State University) 2007-
- Designed initial projects, introduced students to project background.
- Trained students in experimental techniques and design; assisted students in analysis, interpretation and criticism of data, as well as in scientific writing.
- **Graduate Lecturing**, including as an invited guest lecturer for Cell Wall Biology course, UC Davis, CA and an invited guest lecturer for Comparative Biochemistry seminar series, UC Berkeley, CA. 2016-
- **Undergraduate lecturing** and exam marking for final year (Part II) B.A. Plant and Microbial Sciences, Plant Metabolism Option, University of Cambridge 2009-
- **Exam assessor** for Part 1A Biology of cells, University of Cambridge (~300 scripts). 2013
- Supervisor for final year (Part II) B.A. Plant and Microbial Sciences, Bioenergy Option 2009-10
- Practical demonstrator, Natural Sciences Tripos 1A Biology of Cells, University of Cambridge. 2003-05
- Trained academic and industrial visitors, as well as new postdocs, students and technicians in plant biochemistry techniques. 2003-
- Formal **mentor** for postdocs at LBNL (i.e. non-line management through official program) 2018-20

PATENTS AND INDUSTRIAL EXPERIENCE

- Patent filed - Use of Cholinium Lysinate as a Broad Spectrum Herbicide (inventor **JC Mortimer**, R Herbert, A. Mukhopadhyay, T. Eng). Application number: 62/842,737 2019
- **Patent awarded:** contributed to **findings** and submission of PCT/GB2008/050830 "Modified xylan production" (inventors: Dupree P, Miles GP), and **part of revenue share agreement.** 2008
- **SUNLIBB network** – EU- Brazil network of scientists and industry aiming to improve production of sustainable liquid biofuels from biomass refining. 2012-13
- **RENEWAL network** – EU FP7 network of scientists and industry aiming to understand cell wall biosynthesis and deconstruction with a view to industrial uses. 2008-13
- **BSBEC – BBSRC funded Bioenergy Centre.** The cell wall sugars program that I was funded under included multiple academic and industrial partners, including Novozymes, as well as collaborations across other BSBEC programs. 2010-13
- **Lab technician** for **Zylepsis Ltd.**, a biotechnology company which specialized in **nutraceuticals** and **biocatalysis** in Ashford, Kent, UK. 1998-99

SELECTED PUBLIC OUTREACH, COMMUNICATION AND SERVICE

- Faculty Research Integrity Advisor (RIA) 2021-
- Institute for Mineral and Energy Resources, Advisory Committee 2021-
- Organising Committee, Plant Cell Walls 2022 2021-
- Scientific Organising Committee, Plant Cell Wall Biology 2021 2021
- LA Public library – STEM careers panel as part of Women’s history month (virtual) 2021

- Berkley Lab Diversity, Equity and Inclusion Committee – Project Sunshine (data gathering for pay equity) 2018-19
- Chair of search for EGSB Division Director, member of other directorate level searches e.g. Head of the Research Compliance Office 2019-20
- Berkeley Lab Conflict of Interest Advisory Committee (voting member) 2018-20
- Co-author of World Economic Forum “Code of Ethics for Researchers” (2018) (<https://widgets.weforum.org/coe/>). Highlighted globally, including in 2018 Nature Editorial (555:5).
- Represented Berkeley Lab at ARPA-E innovation showcase, Washington DC 2017
- Represented Berkeley Lab at “National Lab Day”, Capitol Hill 2017
- Member of Berkeley Lab Biosciences Area/Environmental Genomics and Systems Biology supergroup – bimonthly meeting to discuss funding opportunities between the two areas. 2016-18
- Member of JBEI technology transfer committee – monthly meeting to discuss issues surrounding JBEI IP. 2016-20
- Member of JBEI research committee – bi-weekly meeting to discuss issues surrounding governance, budget and research direction at JBEI. 2016-20
- Member of mCAFES steering committee – monthly meeting to discuss program goals, progress 2019-
- Member of JBEI search committees e.g. Director of Life Cycle Analysis, Education Program Manager; advisory committee for implementation of Microsoft Sharepoint as JBEI’s operational software; safety committee; building evacuation team (BET). 2016-
- Member of JBEI outreach committee – responsible for designing, coordinating and delivering JBEI’s outreach program with local high schools, colleges, community groups and museums. 2015-20
- Member of JBEI grassroots software development committee – selecting software tools developed by JBEI researchers for further development by the informatics team. 2014-20
- Provide tours of JBEI to visiting groups from schools, universities, politicians and international trade delegations. 2016-20
- Involved in JBEI social media program e.g. Twitter Ambassador. 2014-
- RIKEN Yokohama and YCU open day – assisted in the exhibition “Cellulose in Every Day Life”. 2014
- Postdoc Research Day, University of Cambridge, UK – Invited guest on careers panel. 2014
- Key Challenge Event (<http://goo.gl/6sQiaq>) – presented my research to the agricultural sector NIAB (National Institute of Agricultural Botany) Innovation Farm. 2014
- Fascination of Plants day (fascinationofplantsday.org/) – Organized the University of Cambridge bioenergy contribution for this international festival. 2013
- Cambridge Science Festival (www.cambridgesciencefestival.org). Included organizing the Biochemistry Department contribution to the Cambridge Science Festival, “Living Energy” in 2011, and assisting with plant science and bioenergy displays each year. 2003-13
- Media: e.g. featured in YouTube video for the BBSRC explaining the work described in Mortimer et al. 2010 for a non-specialized audience (<http://goo.gl/VF61B>). 2006-12

- Cambridge Bioenergy Initiative (www.bioenergy.cam.ac.uk) - Helped to establish, and continued to participate in, the Cambridge Bioenergy Initiative, a university wide forum for academics and local industry involved in any aspect of bioenergy research. 2010-13
- Regular presentation of work at group meetings, as well as annual departmental seminars and posters at international scientific meetings. 2008-

SOCIETY MEMBERSHIP

- Biochemical Society 2003-
- American Society for Plant Biologists (ASPB) 2011-
- Society for Glycobiology 2014-20
- American Chemical Society 2018-20

PEER-REVIEWED PUBLICATIONS (see [Google Scholar](#) for complete list)

[* = corresponding author; † = equal contribution, bold = Mortimer lab member]

Under Review/Under Revision:

- **Mortimer JC***, Gilliham M*. SpaceHort: Redesigning Plants to Support Space Exploration and On-Earth Sustainability (Current Opinion in Biotechnology, submitted)
- **Silva N**, Thomas JB, Dahlberg J, Rhee SY*, **Mortimer JC***. Progress and challenges in sorghum biotechnology, a multi-purpose feedstock for the bioeconomy (J. Experimental Botany, submitted)

Accepted or Published

2021

- Cole B, Bergmann D, Blaby-Haas C, Blaby IK, Bouchard KE, Brady SM, Ciobanu D, Coleman-Derr D, Leiboff S, **Mortimer JC**, Nobori T, Rhee SY, Schmutz J, Simmons BA, Singh AK, Sinha N, Vogel JP, O'Malley RC, Visel A, Dickel DE (2021). Plant Single-Cell Solutions for Energy and the Environment. *Communications Biology* (Accepted)
- Moore WM, Chan C, Ishikawa T, Rennie EA, Wipf HML, Benites VT, Kawai-Yamada M, **Mortimer JC**, Scheller HV. Reprogramming sphingolipid glycosylation is required for endosymbiont persistence in *Medicago truncatula*. *Current Biology* 31: 2374-2385. e4 doi.org/10.1016/j.cub.2021.03.067
- Demirer G, **Silva T**, Jackson C, Thomas J, Ehrhardt E, Rhee S, **Mortimer JC***, Landry M (2021). Nanotechnology to advance CRISPR/Cas genetic engineering of plants. *Nature Nanotechnology* 16 (3), 243-250 doi.org/10.1038/s41565-021-00854-y
- **Jing B**, Ishikawa T, Soltis NE, Inada N, Liang Y, **Murawska GM**, **Fang L**, **Anderberhan F**, **Pidatala R**, Yu X, Baidoo EEK, Kawai-Yamada M, Loque D, Kliebenstein DJ, Dupree P, **Mortimer JC***. The *Arabidopsis thaliana* nucleotide sugar transporter GONST2 is a functional homolog of GONST1. *Plant Direct* 3: e00309. doi.org/10.1002/pld3.309
- Verhertbruggen Y, Boudier A, Vigouroux J, Alvarado C, Geairon A, Guillon F, Wilkinson MD, Stritt F, Pauly M, Lee MY, **Mortimer JC**, Scheller HV, Mitchell RAC, Voiniciuc C, Saulnier S, Chateigner-Boutin AL (2021) The TaCslA12 gene expressed in the wheat grain endosperm synthesizes wheat-

like mannan when expressed in yeast and Arabidopsis. *Plant Sciences* 302: 110693, doi: 10.1016/j.plantsci.2020.110693.

- Cassim AM, Navon Y, **Gao Y**, Decossas M, Fouillen L, Grélard A, Nagano M, Lambert O, Bahammou D, Van Delft P, Maneta-Peyret L, Simon-Plas F, Heux L, Fragneto G, **Mortimer JC**, Deleu M, Lins L, Mongrand S (2021). Biophysical analysis of the plant-specific GIPC sphingolipids reveals multiple modes of membrane regulation. *JBC* 296, 100602. doi:0.1101/2020.10.01.313304
- **Dewhirst RA**, Lei J, Afseth CA, Casthana C, Wistrom CM, **Mortimer JC**, Jardine K (2021) Are Methanol-Derived Foliar Methyl Acetate Emissions a Tracer of Acetate-Mediated Drought Survival in Plants? *Plants* 10:411

2020

- **Gao Y**, Lipton AS, Wittmer Y, Murray DT, **Mortimer JC*** (2020) A grass-specific cellulose-xylan interaction dominates in sorghum secondary cell walls. *Nature Communications*, 11:6081, doi: 10.1038/s41467-020-19837-z. Summary from the LBNL/PNNL communications team here.
- Hori C, Yu X, **Mortimer JC**, Sano R, Matsumoto T, Kikuchi J, Demura T, Ohtani M (2020) Impact of abiotic stress on the regulation of cell wall biosynthesis in *Populus trichocarpa*. *Plant Biotechnology* 37:273-83, doi: 10.5511/plantbiotechnology.20.0326a
- Mason, P J, Furtado A, Marquardt A, Hodgson-Kratky K, Hoang Nam V, Botha FC, Papa G, **Mortimer JC**, Simmons B, Henry RJ (2020) Variation in sugarcane biomass composition and enzymatic saccharification of leaves, internodes and roots. *Biotechnology for biofuels* 13 (1), 1-19, doi: 10.1186/s13068-020-01837-2
- **Gao Y**, **Mortimer JC***. Unlocking the architecture of native plant cell walls via solid-state nuclear magnetic resonance. *Methods in Cell Biology* vol 160: 121-142, eds Anderson CT, Haswell E, Dixit R, doi: 10.1016/bs.mcb.2020.05.001
- Baral NR, Dahlberg J, Putnam D, **Mortimer JC**, Scown CD (2020). Supply Cost and Life-Cycle Greenhouse Gas Footprint of Dry and Ensiled Biomass Sorghum for Biofuel Production. *ACS Sustainable Chem. Eng.* 8 (42), 15855-15864 doi: abs/10.1021/acssuschemeng.0c03784
- Hori C, Yu C, **Mortimer JC**, Sano R, Matsumoto T, Kikuchi J, Demura T, Ohtani M. Impact of abiotic stress on the regulation of cell wall biosynthesis in *Populus trichocarpa*. *Plant Biotechnology*, 37:273-283, doi: 10.5511/plantbiotechnology.20.0326a
- Dewhirst RA, Mortimer JC, Jardine KJ. Cell wall esters facilitate forest responses to climate (*Trends in Plant Science*, 25: 729-732, doi: 10.1016/j.tplants.2020.05.011
- Eng T, **Herbert RA**, Martinez U, Wang B, Chen J, Brown B, Deutschbauer A, Bissell M, **Mortimer JC***, Mukhopadhyay A* (2020) Iron Supplementation Eliminates Antagonistic Interactions Between Root Associated Bacteria. *Frontiers in Microbiology* 11, 1742, doi: 10.3389/fmicb.2020.01742
- Vejlupekova Z, Warman C, **Sharma R**, Scheller HV, **Mortimer JC**, Fowler JE (2020) No evidence for transient transformation via pollen magnetofection in several monocot species. *Nature Plants* 6: 1323–1324, doi: 10.1101/2020.05.01.071266
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