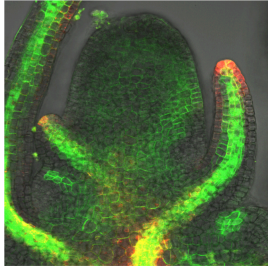


# Robyn Maree Johnston

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## The Elshire Group Limited

152 Turitea Road, RD 2  
Palmerston North 4472  
New Zealand

Website: <https://www.elshiregroup.co.nz>

## Current Position

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Founding Scientist, The Elshire Group Limited

## Positions Held

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2015 - 2019	Researcher, NSF Grant "Ligule development in the proximal-distal axis of the maize leaf"
2014 - 2015	Postdoctoral Fellow, AgResearch, Grasslands, Palmerston North
2010 - 2014	Postdoctoral Associate, Scanlon Lab, Cornell University
2007 - 2009	Postdoctoral Fellow, Jackson Lab, Cold Spring Harbor Laboratory

## Education

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2007	PhD (Plant Biology), Massey University, Palmerston North
2003	Bachelor of Science (Plant Biology), Massey University, Palmerston North

## Research expertise

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- Developmental genetics
- Experimental design, including transcriptomics experiments
- Characterisation of developmental processes and mutant phenotypes
- Fieldwork: field planning, planting, genotyping, controlled pollinations

## Technical expertise

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- Laboratory Design and Setup
- Molecular biology
- Protocol development
- Laser microdissection RNA-seq

- Histology
- Microscopy: confocal, light microscopy, SEM
- RNA in situ hybridisation
- Immunolocalisation

## Scientific Community Participation

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- Founding member Palmerston North Bioinformatics Meeting
- Founding member Genomics for Aotearoa New Zealand (GFANZ)
- Lecturer, Massey University, Plant Development (2015, 2016)
- Manuscript review: Plant Cell and Plant Physiology
- Organising committee, Palmerston North Plant Biology Meeting series (2015, 2016)
- Instructor, laser microdissection and molecular biology techniques, Cornell University
- Trainer, visiting postdocs in laser microdissection RNA-seq, Cornell University
- Mentor, Cold Spring Harbor Laboratory summer intern programme

## Publications

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- 2023 Satterlee, J.W., Evans, L.J., Conlon, B.R., Conklin, P., Martinez-Gomez, J., Yen, J.R., Wu, H., Sylvester, A.W., Specht, C.D., Cheng, J., Johnston, R., Coen, E., Scanlon, M.J. (2023) A *Wox3*-patterning module organizes planar growth in grass leaves and ligules. *Nature Plants* 9:5, 720-732.
- 2022 Kong, W., Nabukalu, P., Cox, S., Johnston, R., Scanlon, M.J., Robertson, J.S., Goff, V.H., Pierce, G.J., Lemke, C., Compton, R., Reeves, J., Paterson, A.H. (2022) Unraveling the genetic components of perenniality: Toward breeding for perennial grains. *Plants, People, Planet* 4:4, 367-381.
- 2021 Richardson, A.E., Cheng, J., Johnston, R., Kennaway, R., Conlon, B.R., Rebocho, A.B., Kong, H., Scanlon, M.J., Hake, S., Coen, E. (2021) Evolution of the grass leaf by primordium extension and petiole-lamina remodeling. *Science* 374:6573, 1377-1381.
- 2021 Leiboff, S., Strable, J., Johnston, R., Federici, S., Sylvester, A.W., Scanlon, M.J. (2021) Network analyses identify a transcriptomic proximodistal prepatterning in the maize leaf primordium. *New Phytologist* 230:1, 218-227.
- 2020 Conklin, P.A., Johnston, R., Conlon, B.R., Shimizu, R., Scanlon, M.J. (2020) Plant homeodomain proteins provide a mechanism for how leaves grow wide. *Development* 147:20, dev193623.
- Paterson, A.H., Kong, W., Johnston, R., Nabukalu, P., Wu, G., Poehlman, W.L., Goff, V.H., Isaacs, K., Lee, T., Guo, H., Zhang, D., Sezen, U.U., Kennedy, M., Bauer, D., Feltus, F.A., Weltzien, E., Rattunde, H.F., Barney, J.N., Barry, K., Cox, T.S.,

- 2020 Scanlon, M.J.(2020) The evolution of an invasive plant, *Sorghum halepense* L. ('Johnsongrass'). *Frontiers in Genetics* 11, 317.
- 2019 Knauer, S., Javelle, M., Li, L., Li, X., Ma, X., Wimalanathan, K., Kumari, S., Johnston, R., Leiboff, S., Meeley, R., Schnable, P.S., Ware, D., Lawrence-Dill, C., Yu, J., Muehlbauer, G.J., Scanlon, M.J., Timmermans, M.C.P.(2019) A high-resolution gene expression atlas links dedicated meristem genes to key architectural traits. *Genome Research* 29:12, 1962-1973.
- 2017 Johnston, R., Sylvester, A.W., Scanlon, M.J. (2017) Experimental design and laser microdissection RNA-seq: lessons from an analysis of maize leaf development. *The Journal of Visualized Experiments* 121, e55004, doi:10.3791/55004.
- 2015 Johnston, R., Leiboff, S., Scanlon, M.J. (2015) Ontogeny of the sheathing leaf base in maize (*Zea mays*). *New Phytologist* 205(1): 306-15.
- 2015 B.H., Kolbe, A., Sakai, H., Jackson, D. (2015) A maize glutaredoxin gene, *abphyl2*, regulates shoot meristem size and phyllotaxy. *Plant Cell* 27:121-13.
- 2014 Johnston, R., Wang, M., Sun, Q., Sylvester, A.W., Hake, S., Scanlon, M.J. (2014) Transcriptomic analyses indicate that maize ligule development recapitulates gene expression patterns that occur during lateral organ initiation. *Plant Cell* 26:4718-32.
- 2010 Johnston, R., Candela, H., Hake, S., Foster, T. (2010) The maize milkweed *pod1* mutant reveals a mechanism to modify organ morphology. *Genesis* 48, 416-423.
- 2009 Lee, B.\*, Johnston, R.\*, Yang, Y., Gallavotti, A., Kojima, M., Travencolo, B., Costa, L., Sakakibara, H. Jackson, D. (2009) Studies of aberrant phyllotaxy1 mutants of maize indicate complex interactions between auxin and cytokinin signalling in the shoot apical meristem. *Plant Physiology* 150, 205-216. \*These authors contributed equally to the paper
- 2008 Candela, H., Johnston, R., Gerhold, A., Foster, T. Hake, S. (2008) The milkweed *pod1* gene encodes a KANADI protein that is required for abaxial/adaxial patterning in maize leaves. *Plant Cell* 20, 2073-2087.
- 2004 Foster, T., Hay, A., Johnston, R., Hake, S. (2004) The establishment of axial patterning in the maize leaf. *Development* 131:16, 3921-3929.
- 2003 Foster, T., Johnston, R., Seleznyova, A. (2003) A morphological and quantitative characterisation of early floral development in apple (*Malus x domestica* Borkh.). *Annals of Botany* 92:2, 199-206.

## Talks

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- 2019 Strable, J., Leiboff, S., Johnston, R., Federici, S., Hake, S., Sylvester, A., Scanlon, M. (2019) "Formation of the maize blade-sheath boundary: evidence for a prepattern". Maize Genetics Conference, St. Louis, Missouri, USA
- 2018 Johnston, R. (2018) "Samples to Sequence". Non-Model Genomics Workshop, Wellington, New Zealand

- 2017 Winter, D., Johnston, R., Elshire, R., Dzierzon, H., Draper, J. (presented by R. Johnston) (2017) "Report from the Bioinformatics Computational Science Workshop". MapNet, Palmerston North, New Zealand
- 2015 Johnston, R. (2015) "Before the ligule; probing the early stages of maize leaf development". Palmerston North Plant Biology Meeting, Palmerston North, New Zealand
- 2015 Johnston, R. (2015) "Regulation of condensed tannin accumulation in Trifolium". AgResearch Science Conference, Palmerston North, New Zealand
- 2013 Johnston, R. (2013) "Dissecting the Ligule; a transcriptomic analysis of maize leaf proximal-distal patterning". Invited seminar Plant Gene Expression Center, Albany, CA
- 2012 Johnston, R. (2012) "Making a rhizome, shaping a leaf: transcriptomic analyses of developmental processes". Invited seminar Plant and Food Research, Palmerston North, New Zealand
- 2012 Johnston, R., Scanlon, M. (2012) "NARROW SHEATH and auxin function in initiation of the sheathing leaf base in maize". Grass Group Meeting, Cornell University, Ithaca, NY
- 2006 Johnston, R., Foster, T., and Hake, S. (2006) "Characterisation of mutants that disrupt axial patterning of the maize leaf". Merinet Plant Development Meeting, Auckland, New Zealand
- 2005 Johnston, R., Foster, T. and Hake, S. (2005) "The role of milkweed pod1 in maize leaf patterning". Merinet Plant Development Meeting, Dunedin, New Zealand