

Robyn Maree Johnston

Academic Qualifications

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

Professional Positions Held

- 2015-present Founding Scientist, The Elshire Group Ltd, Palmerston North
2014-present 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

Research expertise

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

Technical expertise

- Histology
- Microscopy: confocal, light microscopy, SEM
- RNA *in situ* hybridisation
- Immunolocalisation
- Laser capture microdissection
- Molecular biology
- Embryo culture (maize)

Scientific Community Participation

- Lecturer, Massey University, Plant Development (2015, 2016)
- Manuscript review: *Plant Cell* and *Plant Physiology*
- Organising committee, Palmerston North Plant Biology Meeting series (2015 - present)
- Taught laser microdissection and molecular biology techniques to students, Cornell University
- Trained visiting postdocs in laser microdissection RNA-seq, Cornell University
- Mentor, Cold Spring Harbor Laboratory summer intern programme

Publications

Johnston, R., Scanlon, M.J. Experimental design and laser microdissection RNA-seq: lessons from an analysis of maize leaf development. *The Journal of Visualized Experiments* (Manuscript under review).

Johnston, R., Leiboff, S., Scanlon, M.J. (2015) Ontogeny of the sheathing leaf base in maize (*Zea mays*). *New Phytologist* 205(1): 306-15.

Yang, F., Bui, H.T., Pautler, M., Llaca, V., **Johnston, R.**, Lee, B.H., Kolbe, A., Sakai, H., Jackson, D. (2015) A maize glutaredoxin gene, *abphyl2*, regulates shoot meristem size and phyllotaxy. *Plant Cell* 27:121-131.

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.

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.

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

- 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.
- Foster, T., Hay, A., **Johnston, R.**, Hake, S. (2004) The establishment of axial patterning in the maize leaf. *Development* 131:16, 3921-3929.
- 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

- Johnston, R. (2015) "Before the ligule; probing the early stages of maize leaf development". *Palmerston North Plant Biology Meeting*, Palmerston North, New Zealand
- Johnston, R. (2015) "Regulation of condensed tannin accumulation in *Trifolium*". *AgResearch Science Conference*, Palmerston North, New Zealand
- Johnston, R. (2013) "Dissecting the Ligule; a transcriptomic analysis of maize leaf proximal-distal patterning". Invited seminar *Plant Gene Expression Center*, Albany, CA
- Johnston, R. (2012) "Making a rhizome, shaping a leaf: transcriptomic analyses of developmental processes". Invited seminar *Plant and Food Research*, Palmerston North, New Zealand
- 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
- 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
- Johnston, R., Foster, T. and Hake, S. (2005) "The role of *milkweed pod1* in maize leaf patterning". *Merinet Plant Development Meeting*, Dunedin, New Zealand

Awards

- 2004 Top Achiever Doctoral Scholarship, Foundation for Research, Science and Technology
- 2003 Massey University Doctoral Scholarship
- 2003 New Zealand Federation of Graduate Women Scholarship
- 2003 J P Skipworth Scholarship (Plant Biology)
- 2003 Goodman Family Scholarship (College of Sciences)
- 2002 Massey Scholarship (College of Sciences)
- 2002 J P Skipworth Scholarship (Plant Biology)