Richard Scott Poethig

Education
B.A., 1974; College of Wooster, Wooster, OH
M. S., 1977; Ph.D., 1981; Yale University, New Haven, CT

Employment

1981	Postdoctoral fellow with Dr. P.B. Green, Stanford University
1981-1983	Postdoctoral fellow with Dr. E. H. Coe, University of Missouri
1983-1989	Assistant Professor, University of Pennsylvania
1989-1996	Associate Professor, University of Pennsylvania
1996-	Professor, University of Pennsylvania
2002-2007	Paul C. Williams Family Chair, University of Pennsylvania
2008-2014	Patricia M. Williams Chair, University of Pennsylvania
2014-	John B. and Margaret H. Fassitt Chair, University of Pennsylvania

Honors and Fellowships
Phi Beta Kappa, 1974
NSF Predoctoral Fellowship, 1975-1979
Nicholas Prize in Experimental Biology, Yale University, 1981
Pelton Award, Botanical Society of America, 1993
Fellow, American Association for the Advancement of Science, 2002
Lindback Award for Distinguished Teaching, 2011
G.E. Blackman Lecture, Oxford University, 2013
Member, U.S. National Academy of Sciences, 2014
Christopher Clavius Award, St. Joseph's University, 2017

Professional Activities
Review Panels and Scientific Advisory Committees
USDA-CRGO, Plant Growth and Development, 1988-1991
NSF Developmental Mechanisms Program, Committee of Visitors, 1993
DOE Energy Bioscience Program, program review committee, 1994
NSF Faculty Fellows Review Committee, 1996
NSF Developmental Mechanisms Program, 1998, 2001, 2003, 2004, 2007, 2008, 2009
Member, Advisory Committee, NSF Maize Gene Discovery Project, 2000-2003
NSF Plant Genome Program, 2005
Chair, Advisory Committee, NSF Maize Sequencing Project, 2003-2005
Member, North American Arabidopsis Steering Committee, 2007-2011
Life Sciences Research Foundation, 1988-present
Member, NIH Development 1 Study Section 2016 – present
Member, NSF IOS Committee of Visitors, 2018

Editorial Boards
International Journal of Plant Sciences, 1991-1998
Development, 1989-1998
The Plant Journal, 1991- 2003
Annual Review of Cell and Developmental Biology, 1999-2004
Developmental Biology, 2001-2011, (Associate Editor; 1993-1995)
Wiley Interdisciplinary Reviews in Developmental Biology, Associate Editor (2011-2016)
Genetics, Associate Editor (2012-2018)

Research Interests

I am interested in developmental timing—in particular, the mechanism of the transition between juvenile and adult phases of shoot development in plants (vegetative phase change). All plants undergo this transition, but it is only obvious in species in which these phases are distinguished by major differences in leaf shape and shoot architecture (e.g. English ivy, juniper, *Acacia*, *Eucalyptus*). I initially studied this problem in corn, but have spent most of my career working on the genetic mechanism of vegetative phase change in *Arabidopsis thaliana*. Some of the genes we identified in *Arabidopsis* have led in unexpected directions, including studies of leaf polarity, developmental timing during embryogenesis, nuclear-cytoplasmic transport, and the molecular biology of small RNA biogenesis and function. However, I have always returned to the mechanism of vegetative phase change because it is one of the most important unsolved problems in plant development.

Our most significant discovery is that vegetative phase change is regulated by an evolutionarily conserved miRNA, miR156, that regulates a plant-specific group of transcription factors known as SPL genes. During the juvenile phase of development, the expression of these transcription factors is repressed by the presence of high levels of miR156. The transition to the adult phase occurs when the level of miR156 declines, leading to an increase in the expression of its SPL targets. In addition to working out the molecular mechanism of this process in *Arabidopsis*, we are studying the evolution and functional significance of vegetative phase change in *Acacia*. Recently we found that a mutation in a single MIR156 gene is responsible for the evolution of nearly 40 species of "juvenilized" *Acacia* species. This discovery provides a dramatic example of the importance of developmental timing in organismal evolution, and demonstrates that simple genetic changes can have a profound role in this process.

Publications

Green, P. B. and R. S. Poethig (1982) Biophysics of the extension and initiation of plant organs. In: *Developmental Order: Its Origin and Regulation* (S. Subtelny and P.B. Green, eds.), A.R. Liss, NY, pp. 485-509

Coe, E. H. and R. S. Poethig (1982) Genetic factors affecting plant development. In: *Maize for Biological Research*. (W.F. Sheridan, ed.), Plant Mol. Biol. Assn., Virginia, pp. 295-300.

Poethig, R. S. (1982) Maize: the plant and its parts. In: *Maize for Biological Research*. (W.F. Sheridan, ed.), Plant Mol. Biol. Assn., Virginia, pp. 9-18.

Poethig, R. S. (1984) The cellular parameters of leaf morphogenesis in maize and tobacco. In: *Contemporary Problems in Plant Anatomy* (R.A. White and W.C. Dickison, eds.), Academic Press, NY pp. 235-259.

Poethig, R. S. (1984) Patterns and problems in angiosperm leaf morphogenesis. In: *Pattern Formation* (S. Bryant and G. Malacinski, eds.), MacMillan Co., NY, pp. 413-432.

Poethig, R. S. and I. M. Sussex (1985) The developmental morphology and growth dynamics of the tobacco leaf. Planta 165: 158-169.

Poethig, R. S. and I. M. Sussex (1985) The cellular parameters of leaf development in tobacco: a clonal analysis. Planta 165: 170-184.

Poethig, R. S. (1985) Homeotic mutations in maize. In: *Plant Genetics*. (M. Freeling, ed) UCLA Symp.Mol.Cell Biol. 35: 33-43.

Poethig, R. S., E. H. Coe, Jr. and M. M. Johri (1986) Cell lineage patterns in maize embryogenesis: a clonal analysis. Developmental Biology 117: 392-404.

Poethig, R. S. (1987) Clonal analysis of cell lineage patterns in plants. Amer. J. Bot. 74: 581-594.
Poethig, R. S. (1988) Heterochronic mutations affecting shoot development in maize. Genetics 119: 959-973.
Poethig, R.S. (1988) A non-cell-autonomous mutation regulating juvenility in maize. Nature: 336: 82-83.
McDaniel, C. N. and R. S. Poethig (1988) Cell-lineage patterns in the shoot apical meristem of the germinating maize embryo. Planta 175: 13-22.
McDaniel, C.N. and R.S. Poethig. (1989) From here to there in maize: a fate map of the shoot apical meristem of the germinating corn embryo. In: *The Molecular Basis of Plant Development*, (R. Goldberg, ed.), UCLA Symp. Cell Mol. Biol.(NS) 92: 3-11
Poethig, R.S. (1989) Genetic modifiers of heterochronic mutations in maize. In: *The Molecular Basis of Plant Development,* (R. Goldberg, ed.), UCLA Symp. Cell Mol. Biol.(NS) 92:25-35.
Poethig, S. (1989) Genetic mosaics and cell lineage analysis in plants. Trends Genet. 5: 273-277.
Becraft, P.W., D.K. Bongard-Pierce, A. W. Sylvester, R. S. Poethig and M. Freeling (1990) The *liguleless-1* gene acts tissue specifically in maize leaf development. Dev. Biol. 141:220-232.
Poethig, R.S., C.N. McDaniel and E. H. Coe, Jr. (1990) The cell lineage of the maize shoot. In: *The Genetics of Pattern Formation* (A. Mahowald, ed.), Wiley-Liss, New York. pp. 197-208.
Poethig, R.S. (1990) Phase change and the regulation of shoot morphogenesis in plants. Science 250: 923-930.
Dudley, M. and R.S. Poethig. (1991) The effect of a heterochronic mutation, *Teopod 2*, on the cell lineage of the maize shoot. Development 111: 733-739
Dolan, L. and R. S. Poethig. (1991) Genetic analysis of leaf development in cotton. Development (Suppl) 1: 39-46
Bassiri, A., E. E. Irish, and R. S. Poethig (1992) Heterochronic effects of *Tp2* on the growth and photosensitivity of the maize shoot. Plant Cell 4: 497-504
Dudley, M. and R. S. Poethig (1993) The heterochronic *Teopod1* and *Teopod2* mutations of maize are expressed non-cell-autonomously. Genetics 133: 389-399
Conway, L. and R. S. Poethig (1993) Heterochrony in plant development. Sem. Dev. Biol. 4: 65-72.
Dudley, M. and R. S. Poethig (1993) Clonal analysis in plants. In: *Cellular Interactions in Development: Practical Approach Series*. (D. Hartley, ed) Oxford U. Press. pp. 59-75.
Dolan, L., K. Janmaat, V. Willemsen, P. Linstead, R. S. Poethig, K. Roberts and B. Scheres (1993) The cellular organization of the *Arabidopsis* root. Development 119: 71-84
Barton, M. K. and R. S. Poethig (1993) Formation of the shoot apical meristem in *Arabidopsis thaliana*: an analysis of development in the wild type and in the *shoot meristemless* mutant. Development 119: 823-831
Poethig, R. S. (1993) The maize shoot. In: *The Maize Handbook* (V. Walbot and M. Freeling, eds), Springer-Verlag, pp. 11-17.
Evans, M.M.S., H. Passas and R. S. Poethig (1994) Heterochronic effects of *glossy15* mutations on epidermal cell identity in maize. Development 120: 1971-1981
Dolan, L., P. Linstead, R. S. Poethig, K. Roberts (1994) The contribution of chimeras to the understanding of root meristem organization. In: *Shape and Form in Plants and Fungi* (D. Ingham, ed.), Academic Press, London pp. 195-208.
Dolan, L., C. M. Duckett, C. Grierson, P. Linstead, K. Schneider, E. Lawson, C. Dean, R. S. Poethig, K. Roberts (1994) Clonal relationships and cell patterning in the root epidermis of Arabidopsis. Development 120: 2465-2474.
Telfer, A. and R. S. Poethig (1994) Leaf development in *Arabidopsis* In: *Arabidopsis* (C. Sommerville and E. Meyerowitz, eds). pp. 379-401, Cold Spring Harbor Press, Mongraph 27.
Poethig, R. S. and E. J. Szymkowiak (1995) Clonal analysis of leaf development in maize. Maydica 40: 67-76

Evans, M. M. S. and R. S. Poethig (1995) Gibberellins promote vegetative phase change and reproductive maturity in maize. Plant Physiology 108: 475-487.
Lawson, E. and R. S. Poethig (1995) Shoot development in plants: time for a change. Trends Genet. 11: 263-268.
Bongard-Pierce, D., M. M. S. Evans, and R. S. Poethig (1996) Heteroblastic features of leaf anatomy in maize and their genetic regulation. Intl. J. Plant Sci. 157:331-340
Telfer, A., K. M. Bollman and R. S. Poethig (1997) Phase change and the regulation of trichome distribution in *Arabidopsis thaliana*. Development 124: 645-654
Poethig, R. S. (1997) Leaf morphogenesis in flowering plants. Plant Cell 9: 1077-1087
Conway, L. J. and R. S. Poethig (1997) Mutations of *Arabidopsis* that transform leaves into cotyledons. Proc. Natl. Acad. Sci. 94: 10209-10214.
Evans, M. M. S. and R. S. Poethig (1997) *vp8* accelerates the rate of seedling growth and delays vegetative phase change in maize. Plant J. 12: 769-779.
Dolan, L. and R. S. Poethig (1998) Clonal analysis of leaf development in cotton. Amer. J. Bot. 85: 315-321.
Dolan, L. and R. S. Poethig (1998) The Okra leaf shape mutation in cotton is active in all cell layers of the leaf. Amer. J. Bot.85: 322-327.
Telfer, A. and R. S. Poethig (1998) *HASTY*: a gene that regulates the timing of shoot maturation in *Arabidopsis thaliana*.. Development: 1889-1898.
Kerstetter, R. and R. S. Poethig (1998) The regulation of leaf identity during shoot development. Ann. Rev. Cell Dev. Biol. 14: 373-398
Orkwiszewski, J. A. J., and R. S. Poethig (2000) Phase identity of the maize leaf is determined after leaf initiation. Proc. Natl. Acad. Sci. 97:10631-10636
Poethig, R. S. 2001. Life with 25,000 genes. Genome Res. 11:313-316
Berardini, T. Z., K. Bollman and R. S. Poethig (2001) Regulation of vegetative phase change in Arabidopsis thaliana by cyclophilin 40. Science 291: 2405-2407
Kerstetter, R., K. Bollman, Taylor, R. A., Bomblies, K. and R. S. Poethig (2001) *KANADI* regulates organ polarity in Arabidopsis thaliana. Nature 411: 706-709
Vega, S., M. Sauer, J. A. J. Orkwiszewski, and R. S. Poethig (2002) The *early phase change* gene in maize. Plant Cell: 133-147
Long J.A., S.Woody, S. Poethig, E. M. Meyerowitz , and M. K Barton (2002) Transformation of shoots into roots in Arabidopsis embryos mutant at the *TOPLESS* locus. Development 129: 2797-2806
Moss, E. G. and R. S. Poethig (2002) MicroRNAs: Something new under the sun. Current Biology 12: R688-690.
Bollman, K. M., Aukerman, M. J., Park, M. Y., Hunter, C., Berardini, T. Z., and R. S. Poethig. (2003) *HASTY*, the Arabidopsis ortholog of *exportin 5*/*MSN5*, regulates phase change and morphogenesis. Development 130: 1493-1504.
Hunter, C. and R. S. Poethig (2003) miSSING LINKS: miRNAs and plant development. Cur. Op. Cell Dev. Biol. 13: 372-378.
Hunter, C., Aukerman, M.J., Sun, H., Fokina, M., and R. S. Poethig (2003) *PAUSED* encodes the Arabidopsis exportin-t ortholog. Plant Physiol. 132: 2135-2143
Poethig, R. S. (2003) Phase change and the regulation of developmental timing in plants. Science 301: 334-436.
Hunter, C., Sun, C., and R. S. Poethig (2003) The Arabidopsis heterochronic gene *ZIPPY* is an ARGONAUTE family member. Curr. Biol. 13: 1734-1739
Peragine, A., Yoshikawa, M., Wu, G., Albrecht, H. L. and R. S. Poethig (2004) *SGS3* and *SGS2*/*SDE1*/*RDR6* are required for juvenile development and the production of trans-acting siRNAs in Arabidopsis. Genes & Dev. 18: 2368-2379
Park, M. Y., Wu, G., Gonzalez-Sulser, A., Vaucheret, H. and R. S. Poethig (2005) Nuclear processing and export of microRNAs in Arabidopsis. Proc. Natl. Acad. Sci. 102: 3691-3696
Willmann, M. R. and R. S. Poethig (2005) Time to grow up: the temporal role of small RNAs in plants. Curr. Op. Plant Biol. 8: 548-552.

Yoshikawa, M., Peragine, A., Park, M. Y. and R. S. Poethig (2005) A pathway for the biogenesis of trans-acting siRNAs in Arabidopsis. Genes & Dev. 19: 2164-2175.

Martin-Trillo, M., Lazaro, A., Poethig, R. S., Gomez-Mena, C., Pinero, M.A., Martinez-Zapater, J. M., and J. A. Jarillo. (2006) *EARLY IN SHORT DAYS 1* (*ESD1*) encodes ACTIN-RELATED PROTEIN 6 (AtARP6), a putative component of chromatin remodelling complexes that positively regulates *FLC* accumulation in Arabidopsis**.** Development 133: 1241-1252

Xu, L., Yang, L., Limin, P., Li, Q., Ling, Q., Wang, H., Poethig, R. S. and H. Huang. (2006) Genetic interaction between the *AS1-AS2* and *RDR6-SGS3-AGO7* pathways for leaf morphogenesis. Plant Cell Physiol. 47: 853-863.

Hunter, C, M. Willmann, G. Wu, M. Gutierrez-Nava and R. S. Poethig (2006). Trans-acting siRNA-mediated repression of ETTIN and ARF4 regulates heteroblasty in Arabidopsis. Development 133: 2973-2981.

Wu, G and R. S. Poethig (2006). Temporal regulation of shoot development in Arabidopsis by *miR156* and its target *SPL3*. Development 133: 3539-3547

Lu, V., Kulkarni, K., Souret, F. F., Muthu R., Shivakundan Singh Tej, V., Poethig, R. S., Henderson, I. R., Jacobsen, S. E., Wang, W., Green, P. J., and B. Meyers. (2006). microRNAs and other small RNAs enriched in the Arabidopsis RNA-dependent RNA polymerase-2 mutant. Genome Research 16: 1276-1288.

Dodd, A., Jakobsen, M., Baker, A., Telzerow, A., Hou, S-W, Laplaze, L., Barot , L., Poethig. R.S., Haseloff, J., and A. Webb (2006) Time of day modulates low temperature Ca^{2+} signals in Arabidopsis. Plant J. 48: 962-973.

Poethig, R. S., A. Peragine, M. Yoshikawa, C. Hunter, M. Willmann and G. Wu (2006). The function of RNAi in plant development. Cold Spring Harbor Symp. Quant. Biol. 71: 165-170.

Willmann, M. R. and R. S. Poethig (2007). Conservation and evolution of miRNA regulatory programs in plant development. Curr. Op. Plant Biol. 10:503-511.

Reinhardt B., Hänggi E., Müller S., Bauch M., Wyrzykowska J., Kerstetter R., Poethig R. S., Fleming A. J. (2007). Restoration of DWF4 expression to the leaf margin of a *dwf4* mutant is sufficient to restore leaf shape but not size: the role of the margin in leaf development. Plant J. 52: 1094-1104.

Parizot B., Laplaze L., Ricaud L., Boucheron-Dubuisson E., Bayle V., Bonke M., De Smet I., Poethig R.S., Helariutta Y., Haseloff J., Chriqui D., Beeckman T., Nussaume L. (2008). Diarch symmetry of the vascular bundle in Arabidopsis root encompasses the pericycle and is reflected in distich lateral root initiation. Plant Physiol 146: 140-148.

Mlotshwa S., Pruss G.J., Peragine A., Endres M.W., Li J., Chen X., Poethig R.S., Bowman L.H., Vance V.(2008). DICER-LIKE2 plays a primary role in transitive silencing of transgenes in Arabidopsis. PLoS ONE 3:e1755

Wu, G., Lin, W-c, Huang T., Poethig R. S., Springer,P. S., and R. A. Kerstetter (2008). KANADI1 regulates adaxial-abaxial polarity in Arabidopsis by directly repressing the transcription of *ASYMMETRIC LEAVES2*. Proc. Natl. Acad. Sci. 105: 16392-16397 (Poethig, Springer and Kerstetter share corresponding authorship).

Bender J, Benfey P, Bergmann D, Borevitz J, Coruzzi G, Dangl J, Dean C, Ecker J, Estelle M, Glazebrook J, Grant S, Guerinot ML, Gutierrez R, Long J, Nordborg M, Poethig S, Raikhel N, Schmitt J, Schnittger A, Vidal M. (2008). 2020 vision for biology: the role of plants in addressing grand challenges in biology. Mol. Plant. 1: 561-563.

Meyers B.C., Axtell M. J., Bartel B., Bartel D. P., Baulcombe D., Bowman J. L., Cao X., Carrington JC, Chen X, Green PJ, Griffiths-Jones S, Jacobsen SE, Mallory AC, Martienssen

R. A., Poethig R. S., Qi Y., Vaucheret H., Voinnet O., Watanabe Y., Weigel D., Zhu J. K. (2008). Criteria for annotation of plant microRNAs. Plant Cell 20: 3186-3190.

Gardner, M. J., Baker, A. J., Assie, J-M, Poethig, R. S., Haseloff, J. P., and A. A. R. Webb (2009). GAL4 GFP enhancer trap lines for the analysis of stomatal guard cell development and gene expression. J. Exp. Botany 60:213-226.

Smith M. R., Willmann M. R., Wu G., Moller B., Weier D. and R. S. Poethig (2009). Cyclophilin40 is required for miRNA activity in Arabidopsis. Proc. Natl. Acad. Sci. 106: 5424-5429.

Wu G., Park, M. Y., Conway S. R., Wang J-W., Weigel D. and R. S. Poethig (2009). The sequential action of miR156 and miR172 regulates developmental timing in Arabidopsis. Cell 138: 750-759.

Yamaguchi A., Wu M-F, Yang L., Wu G., Poethig R. S., and D. Wagner (2009). The microRNA-regulated SBP-box transcription factor SPL3 is a direct upstream activator of *LEAFY*, *FRUITFULL*, and *APETALA1*. Dev. Cell 17: 268-278.

Poethig, R.S. (2009). Small RNAs and developmental timing in plants. Curr. Op. Gen. Dev. 19: 374-378.

Gillmor C. S, Park M. Y. , Smith M. R. , Pepitone R., Kerstetter R. A. , and R. S. Poethig (2010). The MED12-MED13 module of mediator regulates the timing of embryo patterning in Arabidopsis. Development 137: 113-122

Earley, K. W., Smith, M. R., Weber, R., Gregory, B. D. and R. S. Poethig (2010) An endogenous F-box protein regulates *ARGONAUTE1* in Arabidopsis. Silence 1: 15.

Poethig, R. S. (2010). The past, present, and future of vegetative phase change. Plant Physiol. 154: 541-544.

Baskin T. I. , Peret B., Baluška F. , Benfey P. N., Bennett M., Forde B. G., Gilroy S., Helariutta Y., Hepler P.K., Leyser O., Masson P.H., Muday G.K., Murphy A. S., Poethig S., Rahman A,. Roberts K., Scheres B., Sharp R. E. , Somerville C. (2010). Shootward and rootward: peak terminology for plant polarity. Trends Plant Sci. 15: 593-594.

Yang, L., Conway, S. R. and R. S. Poethig (2011). Vegetative phase change is mediated by a leaf-derived signal that represses the transcription of miR156. Development 138: 245-249

Willmann, M. R. and R. S. Poethig (2011) The effect of the floral repressor *FLC* on the timing and progression of vegetative phase change in Arabidopsis. Development 138: 677-685

Wang, J-W., Park, M. Y., Wang, L-J., Koo, Y., Chen, X-Y., Weigel, D. and R. S. Poethig (2011). MiRNA control of vegetative phase change in trees. PLoS Genetics 7:e1002012

Earley, K. W. and R. S. Poethig (2011). Binding of the Cyclophilin 40 ortholog SQUINT to HSP90 protein is required for SQUINT function in Arabidopsis. J. Biol. Chem. 286: 38184-38189.

Yang, L. and R. S. Poethig (2012). Mutations in the GW-repeat protein SUO reveal a developmental function for miRNA-mediated translational repression in Arabidopsis. Proc. Natl. Acad. Sci 109:315-320.

Yoshikawa M., Iki T., Tsutsui Y., Miyashita K., Poethig R. S., Habu Y., Ishikawa M. (2013). 3' fragment of miR173-programmed RISC-cleaved RNA is protected from degradation in a complex with RISC and SGS3. Proc. Natl. Acad. Sci. 110: 4117-4122.

Yang, L., Xu, M., Koo, Y., He, J., and R. S. Poethig (2013). Sugar promotes vegetative phase change in *Arabidopsis thaliana* by repressing the expression of *MIR156A* and *MIR156C*. eLife 2:e00260

Poethig, R. S. (2013). Vegetative phase change and shoot maturation in plants. In: Current Topics in Developmental Biology 105: 125-152

Hudson, C. J., Freeman, J. S., Jones, R. C., Potts, B. M., Wong, M.M., Weller, J. L., Hecht, V. F., Poethig, R. S., and R. E. Vaillancourt. (2014). Genetic control of heterochrony in *Eucalyptus globulus*. G3 8: 1235-1245.

Gillmor, C. S, Silva-Ortega, C. O., Willmann, M. R., Buendîa-Monreal, M., and R. S. Poethig (2014). The *Arabidopsis* Mediator CDK8 module genes *CCT* (*MED12*) and *GCT* (*MED13*) are global regulators of developmental phase transitions. Development 141:4580-4589

Wu, G., Rossidivito, G., Hu, T., Berlyand, Y., and R. S. Poethig (2015). Traffic lines: new tools for genetic analysis in *Arabidopsis thaliana*. Genetics 200:35-45

Fouracre, J. P. and R. S. Poethig (2016) The role of small RNAs in vegetative shoot development. Curr. Op. Plant Biol. 29:64-72.

Xu, M., Hu, T., Smith, M. R. and R. S. Poethig (2016). Epigenetic regulation of vegetative phase change in *Arabidopsis*. Plant Cell 28: 28-41.

Xu, M., Hu, T., Zhao, J., Park, M-Y, Earley, K.W., Wu, G., Yang, L., R. S. Poethig (2016). Developmental functions of miR156-regulated *SQUAMOSA PROMOTER BINDING PROTEIN-LIKE* (*SPL*) genes in *Arabidopsis thaliana*. PLoS Genetics 8: e1006263

Poethig, R. S. (2016). Ian Sussex: simple tools, clever experiments and new insights into plant development. Development 143: 3224-3225.

Ioannidi E, Rigas S, Tsitsekian D, Daras G, Alatzas A, Makris A, Tanou G, Argiriou A, Alexandrou D, Poethig S, Hatzopoulos P, Kanellis AK. (2016). Trichome patterning control involves TTG1 interaction with SPL transcription factors. Plant Mol. Biol. 92: 675-687.

Xu, Y., Guo C., Zhou, B., Li, C., Wang H., Zheng B., Ding H., Zhu Z., Peragine A., Cui Y., Poethig, S. and G. Wu (2016). Regulation of Vegetative Phase Change by SWI2/SNF2 Chromatin Remodeling ATPase BRAHMA. Plant Physiol. 172: 2416-2428.

Guo, C., Xu Y., Shi, M., Lai, Y., Wu, X., Wang, H., Zhu, Z., Poethig, R. S., and G. Wu (2017) Repression of miR156 by miR159 regulates the timing of the juvenile-to-adult transition in Arabidopsis. Plant Cell 29:1293-1304.

Xu, M., Hu, T., and R. S. Poethig (2018). *ACTIN-RELATED PROTEIN6* promotes the transcription of *MIR156A* and *MIR156C* by mediating H3K4me3 deposition. Development 145: dev152868. doi:10.1242/dev.152868

He, J, Xu, M., Willmann, M. R., McCormick, K., Hu, T., Yang, L., Starker, C. G., Voytas, D. F., Meyers, B. C., and R. S. Poethig (2018). Threshold-dependent repression of SPL gene expression by miR156/miR157 controls vegetative phase change in *Arabidopsis thaliana*. PLoS Genetics 14(4): e1007337.

Fouracre, J. P. and R. S. Poethig (2019). A role for the shoot apical meristem in the specification of juvenile leaf identity in *Arabidopsis*. Proc. Natl. Acad. Sci. 116: 10168-10177

Leichty, A. R. and R. S. Poethig (2019) Development and evolution of age-dependent defenses in ant-acacias. Proc. Natl. Acad. Sci. 116: 15596-15601