

CURRICULUM VITAE

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Position and Education:

7. 2014 – present: Senior Vice President
Director, Forage Improvement Division
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4. 2014 – 7.2014: Professor and Interim Director
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The Samuel Roberts Noble Foundation
Ardmore, Oklahoma
1. 2010 – 12.2013: Professor and Associate Director
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1. 2004 – 12. 2009: Associate Professor
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3. 1998 – 12. 2003: Assistant Professor
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Ardmore, Oklahoma
10. 1995 – 3. 1998 Victorian Public Service Officer Band 4
Research Scientist
Plant Biotechnology Center
Agriculture Victoria
Department of Natural Resources and Environment
Melbourne, Australia
2. 1991 – 9. 1995: Post-doctoral Fellow

Department of Prof. Ingo Potrykus
Institute of Plant Sciences
Swiss Federal Institute of Technology, ETH Zürich
Switzerland

3. 1988 – 12. 1990: Ph.D Student in the Department of Agronomy
Beijing Agricultural University, China
Ph.D Degree (Dr. Agri., Dec 15, 1990)
9. 1981 – 7. 1987: Undergraduate and Graduate Student in the Department of
Agronomy, Hebei Agricultural University, China
Bachelor Degree (July 15, 1985)
MSc Degree (Oct 26, 1987)

Professional Activities

Distinguished Scientist awarded by the Society for In Vitro Biology.
Associate Editor, Plant Cell Reports
Associate Editor, Crop Science
Associate Editor, In Vitro Cellular and Developmental Biology – Plant
Editorial Board, Plant Biotechnology Journal
Member of the Scientific Committee for the 13th International Association of Plant
Biotechnology Congress (2014, Melbourne, Australia)
Program Chair for the Plant Biotechnology section of the 2013 In Vitro Biology
Conference
Member of International Organizing Committee for the International Symposium of
Molecular Breeding of Forage and Turf.
Panel member of several USDA and DOE programs.
Invited speaker at many national and international conferences.
Examiner of 7 Ph. D theses for La Trobe University, Melbourne, Australia.
Member of Society for In Vitro Biology, Crop Science Society of America and American
Society of Plant Biologists.

Referred Journal Publications:

Chai M, Zhou C, Molina I, Fu C, Nakashima J, Li, G, Zhang W, Park J, Tang Y, Jiang Q
and Wang Z-Y (2016) A Class II KNOX gene, KNOX4, controls seed physical
dormancy. Proc. Natl. Acad. Sci. USA 113:6997-7002.

DeBruyn JM, Bevard DA, Essington ME, McKnight JY, Schaeffer, SM, Baxter HL,
Mazarei M, Mann DG, Dixon RA, Chen F, Wang Z-Y, Stewart CN (2016) Field grown
transgenic switchgrass (*Panicum virgatum* L.) with altered lignin does not affect soil
chemistry, microbiology and carbon storage potential. GCB Bioenergy (in press).

Niu L, Fu C, Lin H, Wu Y, Wang Z-Y and Tadege M (2016) Control of floral transition in the bioenergy crop switchgrass. *Plant Cell and Environment*. DOI: 10.1111/pce.12769

Baxter HL, Mazarei M, Fu C, Cheng Q, Turner GB, Sykes RW, Decker SR, Windham MT, Davis MF, Dixon RA, Wang Z-Y and Stewart CN (2016) Time course field analysis of COMT-downregulated switchgrass: lignification, recalcitrance, and rust susceptibility. *Bioenergy Research*. DOI 10.1007/s12155-016-9751-1.

Wu Z, Cao Y, Yang R, Qi T, Hang Y, Lin H, Zhou G, Wang Z-Y and Fu C (2016) Switchgrass SBP-box transcription factors *PvSPL1* and *2* function redundantly to initiate side tillers and affect biomass yield of energy crop. *Biotechnol Biofuels* (2016) 9:101. DOI 10.1186/s13068-016-0516-z

Baxter HL, Alexander LW, Mazarei M, Haynes, E, Turner GB, Sykes RW, Decker SR, Davis MF, Dixon RA, Wang Z-Y and Stewart CN (2015) Hybridization of downregulated-COMT transgenic switchgrass lines with field selected switchgrass for improved biomass traits. *Euphytica* 209: 341-355.

Yang J, Worley E, Torres-Jerez I, Miller R, Wang M, Fu C, Wang Z-Y, Tang Y and Udvardi M (2015) *PvNAC1* and *PvNAC2* are associated with leaf senescence and nitrogen use efficiency in switchgrass. *Bioenergy Research* 8:868–880.

Zhou C, Han L, Li G, Chai M, Fu C, Cheng X, Wen J, Tang Y, and Wang Z-Y (2014) STM/BP-like KNOXI is uncoupled from ARP in the regulation of compound leaf development in *Medicago truncatula*. *Plant Cell* 26:1464-1479.

Zhang C, Han L, Slewinski TL, Sun J, Zhang J, Wang Z-Y and Turgeon R (2014) Symplastic phloem loading in poplar. *Plant Physiology* 166:306-313.

Baxter H, Mazarei M, Labbe N, Kline L, Cheng K, Windham M, Mann D, Fu C, Ziebell A, Robert R, Rodriguez M, Davis M, Mielenz J, Dixon RA, Wang Z-Y, Stewart CN Jr. (2014) Two-year field analysis of reduced recalcitrance transgenic switchgrass. *Plant Biotechnology Journal* 12:914-924.

Guo Z, Tan J, Zhuo C, Wang C, Xiang B and Wang Z-Y (2014) Abscisic acid, H₂O₂ and nitric oxide interactions mediated cold-induced S-adenosylmethionine synthetase in *Medicago sativa* subsp. *falcata* that confers cold tolerance through up-regulating polyamine oxidation. *Plant Biotechnology Journal* 12:601-612.

Yee KL, Rodriguez M, Thompson OA, Fu C, Wang Z-Y, Davidson BH, Mielenz JR (2014) Consolidated bioprocessing of transgenic switchgrass by an engineered and evolved *Clostridium thermocellum* strain. *Biotechnology for Biofuels* 7:75 doi:10.1186/1754-6834-7-75.

Zhou C, Han L, Fu C, Wen J, Cheng X, Nakashima J, Ma J, Tang Y, Tan Y, Tadege M, Mysore K, Xia G and Wang Z-Y (2013) The *trans*-acting short interfering RNA3 pathway and NO APICAL MERISTEM antagonistically regulate leaf margin

development and lateral organ separation, as revealed by analyses of an *argonaute7/lobed leaflet1* mutant in *Medicago truncatula*. *Plant Cell* 25: 4845-4862.

Shen H, Mazarei M, Hisano H, Fu C, Rudis M, Yang Y, Xiao X, Jackson L, Li G, Hernandez T, Mohnen D, Chen F, Stewart N, Wang Z-Y and Dixon RA (2013) A genomics approach to deciphering pathways for lignin biosynthesis in switchgrass (*Panicum virgatum* L.). *Plant Cell* 25: 4342-4361.

Zhao Q, Nakashima J, Chen F, Yin Y, Fu C, Yun J, Shao H, Wang X, Wang Z-Y and Dixon RA (2013) Disruption of monolignol laccases results in severe growth arrest in *Arabidopsis thaliana*. *Plant Cell* 25: 3976-3987.

Hardin F, Fu C, Hisano H, Xiao X, Shen H, Stewart N, Parrott W, Dixon RA and Wang Z-Y (2013) Standardization of switchgrass sample collection for cell wall and biomass trait analysis. *Bioenergy Research* 6:755-762.

Samuel R, Pu Y, Jiang N, Fu C, Wang Z-Y and Ragauskas A (2013) Structural Characterization of lignin in wild-type versus COMT down-regulated switchgrass. *Frontiers in Energy Research* 1:14. doi: 10.3389/fenrg.2013.00014.

Guan D, Stacey N, Liu C, Wen J, Mysore K, Torres-Jerez I, Vernie T, Tadege M, Zhou C, Wang Z-Y, Udvardi M, Oldroyd G, and Murray JD (2013) Rhizobial infection is associated with peripheral vasculature development in nodules of *Medicago truncatula*. *Plant Physiology* 162: 107–115.

Yee KL, Hamilton CY, Rodriguez M, Tshaplinshki TJ, Engle NL, Martin MZ, Fu C, Wang Z-Y, Hamilton-Brehm SD, Elkins JG and Mielenz JR (2012) Consolidated bioprocessing conversion of genetically-modified switchgrass. *Biotechnology for Biofuels* 5:81 doi:10.1186/1754-6834-5-81.

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Wang Z-Y, Ge Y and Hopkins AA (2009) Registration of a tissue culture responsive *Lolium temulentum* (Darnel ryegrass) line NFLT12. *Journal of Plant Registrations* 3:206-207.

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Xiao K, Liu J, Dewbre G, Harrison M and Wang Z-Y (2006) Isolation and characterization of root-specific phosphate transporter promoters from *Medicago truncatula*. *Plant Biology* 8:439-449.

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- Wang Z-Y and Ge Y (2005) *Agrobacterium*-mediated high efficiency transformation of tall fescue (*Festuca arundinacea* Schreb.). *J. Plant Physiol.* 162: 103-113.
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Patents

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Wang Z-Y and Nandakumar R (issued October 29, 2013) Switchgrass transformation method. US patent No. 8569582B2

Dixon RA, Chen F and Wang Z-Y (Issued April 12, 2016) Biofuel production methods and compositions. US patent No. 9309528

Invited Oral Presentations

Wang Z-Y (2016) Future Perspectives of Forage Improvement. Closing Keynote lecture at The 9th International Symposium on Molecular Breeding of Forage and Turf. Aug. 15-19, 2016. Lanzhou, China.

Wang Z-Y (2016) Translational genomics for alfalfa improvement. Invited speaker at The International Symposium on Sustained Pasture-Livestock. Aug. 11-13, 2016, Hailar, China.

Wang Z-Y (2015) Transgenic tools and strategies in forage improvement. Invited Speaker at the 5th International Symposium of Forage Breeding. Oct. 19-21, 2015. Buenos Aires, Argentina.

Wang Z-Y (2015) Can molecular genetics help solve the plant breeders' dilemma of forage versus seed? Keynote speaker at the 8th International Herbage Seed Conference, June 21-24, 2015, Lanzhou, China.

Wang Z-Y (2014) Progress in genetic manipulation of forage and turf. Invited Speaker at the ASA-CSSA-SSSA International Annual Meeting. November 2-5, Long Beach, CA.

Wang Z-Y (2014) Improvement of in vitro culture responses in forage and bioenergy crops. Keynote Speaker and Session Chair at the International Association of Plant Biotechnology Congress. August 10-15, Melbourne, Australia.

Wang Z-Y (2014) Genetic modification of switchgrass for improved biofuel production. Invited Speaker at the World Forum on Biology, May 31-June 4, Savannah, GA.

Wang Z-Y (2014) Genetic Manipulation of Forage and Bioenergy Crops. Keynote Speaker at the Twenty-Third Annual Rutgers Turfgrass Symposium. January 17, Rutgers University, NJ.

Wang Z-Y (2013) Biotechnological improvement of forage and bioenergy crops. Invited Speaker at the Grassland Congress of Mexico, September 2-6, Mexico City, Mexico.

Wang Z-Y (2013) Genetic modification of switchgrass for improved biofuel production. Invited speaker at the Systems Biology workshop, May 20-31, Centre for AgriBioscience, La Trobe University, Melbourne, Australia.

Wang Z-Y (2013) Genetic improvement of switchgrass by transgenic approaches. Invited Speaker at the Plant and Animal Genomes XXI Conference, January 12-16, San Diego, California.

Wang Z-Y (2012) Overexpression of miR156 for switchgrass improvement. Invited Speaker at the World Congress on In Vitro Biology, June 3-7, Seattle, WA.

C.F. Hardin and Wang Z-Y (2012) Advances in genetic modification of switchgrass. Invited speaker at the 7th International Symposium on Molecular Breeding of Forage and Turf, June 3-7, Salt Lake City, UT.

Wang Z-Y (2012) Advances in genetic modification of switchgrass. Invited Speaker at SWITCHGRASS I: State of the Science, March 27-28, Ardmore, OK.

C Zhou and Wang Z-Y (2012) Characterization of *Medicago truncatula* mutants and application of the knowledge for alfalfa improvement. Invited Speaker at the Plant and Animal Genomes XVIII Conference, January 14-18, San Diego, California.

Wang Z-Y (2011) Biotechnological improvement of forage, turf and bioenergy Crops. Invited speaker at the International Agri-Science Forum, November 5-7, Yangling, China.

Wang Z-Y (2011) Is genetic engineering ever going to take off in forage breeding? Invited speaker at the EUCARPIA 29th Fodder Crops and Amenity Grasses Section Meeting, September 4-8, 2011, Dublin, Ireland.

Wang Z-Y (2011) Genetic manipulation of forage grasses and legumes. Invited speaker at the International Workshop: 'Bridging the Gap Between Herbivore Nutrition and Forage Breeding, September 11-13, Aberystwyth University, UK.

Wang Z-Y (2011) Redesigning Lignocellulosic Feedstocks: Genetic Modification of Lignin Biosynthesis Significantly Improves Ethanol Production in Switchgrass. Session Convener and Invited Speaker at the In Vitro Biology Meeting, June 4-8, Raleigh, NC.

Wang Z-Y (2010) Biosafety and risk assessment of transgenic forage and turf. Invited Speaker and Session Chair at the 6th International Symposium on Molecular Breeding of Forage and Turf. March 15-19, Buenos Aires, Argentina.

Wang Z-Y (2010) Genetic Manipulation of Forage and Biofuel Crops. Invited Speaker at the International Symposium on Forage, Turfgrass and Biofuel Germplasm Research, October 10-12, Yangling, China.

Wang Z-Y (2010) Genetic modification of switchgrass for improved biofuel production. Invited Speaker at the Plant and Animal Genomes XVIII Conference, January 9-13, San Diego, California.

Wang Z-Y (2009) *Agrobacterium*-mediated transformation of Forage and Turf. Invited Speaker at the 30th Crown Gall Conference, Nov. 21-22, Ardmore, OK.

Wang Z-Y (2008) Genetic transformation of switchgrass. Invited Speaker and Session Convener at the World Congress on In Vitro Biology, June 14-18, Tucson, AZ.

Wang Z-Y, J Bell, X Cheng, Y Ge, X Ma, E Wright, Y Xi, J Zhang, X Xiao and J Bouton (2007) Transgenesis in Forage Crops. Invited Speaker and Session Chair at the 5th International Symposium on Molecular Breeding of Forage and Turf. July 1-6, Sapporo, Japan.

Wang Z-Y (2007) Transgenic Approaches to Improve Quality and Abiotic Stress Tolerance in Forage Crops. Invited Speaker and Session Convener at the In Vitro Biology Congress, June 9-13, Indianapolis, IN.

Wang Z-Y (2007) Genetic Transformation and Biotechnological Improvement of Alfalfa. Invited Speaker at the Alfalfa Seed Growers Conference, January 21-23, Las Vegas.

Wang Z-Y (2006) Biotechnological Improvement of Forage Crops. Invited speaker at the 11th International Congress of Plant Tissue Culture and Biotechnology, August 13-18, Beijing, China.

Wang Z-Y (2006) Overexpression of two *Medicago truncatula* AP2 domain transcription factor genes, *WXP1* and *WXP2*, leads to increased leaf cuticular wax accumulation and enhanced drought tolerance in Arabidopsis and alfalfa. Invited Speaker at the Keystone symposium "Plant Responses to Abiotic Stress", April 8 - 13, Copper Mountain, Colorado.

Wang Z-Y (2005) Increased cuticular wax accumulation and enhanced drought tolerance in transgenic alfalfa by overexpression of a transcription factor gene. Invited Speaker at the In Vitro Biology Congress, June 5-7, Baltimore, Maryland.

Wang Z-Y (2005) Increased cuticular wax accumulation and enhanced drought tolerance in transgenic alfalfa by overexpression of a transcription factor gene. Invited Speaker at the Plant and Animal Genome XIII Conference, January 15-19, San Diego, California.

Wang Z-Y, L Chen, J Bell, C Auh and Paul Dowling (2003) Genetic modification of lignin biosynthesis intransgenic tall fescue. Invited Speaker at the Plant and Animal Genome XI Conference, January 11-15, San Diego, California.

ZY Wang, Y Ge, J, Bell, J. Zhang, L Chen and M Scott (2002) Generation and field evaluation of transgenic grass plants. Invited Symposium Speaker at the 10th International Plant Tissue Culture and Biotechnology Congress, June 23-28, Orlando, Florida. Abstracts of 10th IAPTC&B Congress, P1224.

ZY Wang, J Bell, C Auh and P Dowling (2001) Biotechnological approaches for the improvement of forage grasses. Invited Speaker at the International Conference on Grassland Science and Industry, July 17-20, Hailar, China.