

## **MENG XIE, Ph.D**

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### **Education and training:**

2015 – present, Postdoctoral Research Fellow, Plant Biology, Oak Ridge National Laboratory (USA)

2009 – 2014, Ph.D. Plant System Biology, University of Nebraska-Lincoln (USA)

2005 – 2009, B.Eng. Biological Engineering, China Agricultural University (China)

### **Research and Professional Experience:**

2015 – present, Postdoctoral Research Fellow, Oak Ridge National Laboratory

2009 – 2014, Teach Assistant, University of Nebraska-Lincoln

2009 – 2013, Research Assistant, University of Nebraska-Lincoln

### **Publications:**

1. **Xie M**, Engle N, Pu Y, Ragauskas AJ, Tschaplinski TJ, Tuskan GA, Muchero W, Chen JG. (2017) ANGUSTIFOLIA AND TYROSYL-DNA PHOSPHODIESTERASE 1 regulate plant growth-defense tradeoffs. (Unpublished)
2. **Xie M**, Muchero W, Bryan AC, Yee K, Guo HB, Tschaplinski TJ, Singan VR, Lindquist E, et al. (2017) A novel transcriptional regulatory mechanism for phenylpropanoid biosynthesis. (Unpublished)
3. Macaya-Sanz D, Chen JG, Kalluri UC, Muchero W, Tschaplinski TJ, Gunter LE, Simon SJ, Biswal AK, Bryan AC, Payyavula R, **Xie M**, et al. (2017) Field Performance of *Populus deltoides* Trees Engineered for Biofuel Production. (Unpublished)
4. Labbé J, Muchero W, Czarnecki O, Wang J, Wang X, Bryan AC, Zheng K, Yang Y, **Xie M**, et al. (2017) Mediation of plant-mycorrhizal interaction by a lectin receptor-like kinase. (Unpublished).
5. Yang X, Hu R, Yin H, Jenkins J, Shu S, Tang H, Liu D, Weighill DA, Yim WC, Ha J, Heyduk K, Goodstein DM, Guo HB, Moseley RC, Fitzek E, Jawdy S, Zhang Z, **Xie M**, et al. (2017) The *Kalanchoë* genome provides insights into convergent evolution 1 and building blocks of crassulacean acid metabolism. *Nature Communications*. Accepted.
6. Zheng K, Wang X, Weighill DA, Guo HB, **Xie M**, Yang Y, Yang J, Wang S, Jacobson DA,

- Guo H, Muchero W (2016) Characterization of DWARF14 Genes in Populus. *Scientific Reports* 6:21593.
7. **Xie M**, Yu B (2015) siRNA-directed DNA Methylation in Plants. *Current genomics* 16(1):23-31.
  8. **Xie M**<sup>#</sup>, Zhang S<sup>#</sup>, Yu B (2015) microRNA biogenesis, degradation and activity in plants. *Cellular and Molecular Life Sciences* 1;72(1):87-99. (# Equal Contribution)
  9. Ren G<sup>#</sup>, **Xie M**<sup>#</sup>, Zhang S, Vinovskis C, Chen X, Yu B (2014) Methylation protects microRNAs from an AGO1-associated activity that uridylyates 5' RNA fragments generated by AGO1 cleavage. *Proceedings of the National Academy of Sciences (PNAS)* 111(17):6365-70. (# Equal Contribution)
  10. Zhang S, **Xie M**, Ren G, Yu B (2013) CDC5, a DNA binding protein, positively regulates posttranscriptional processing and/or transcription of primary microRNA transcripts. *Proceedings of the National Academy of Sciences (PNAS)* 110(43):17588-93.
  11. Zhai J, Zhao Y, Simon SA, Huang S, Petsch K, Arikiti S, Pillay M, Ji L, **Xie M**, Cao X, Yu B (2013) Plant microRNAs display differential 3' truncation and tailing modifications that are ARGONAUTE1 dependent and conserved across species. *Plant Cell* 25(7):2417-28.
  12. **Xie M**, Ren G, Costa-Nunes P, Pontes O, Yu B (2012) A subgroup of SGS3-like proteins act redundantly in RNA-directed DNA methylation. *Nucleic acids research* 40(10):4422-31.
  13. **Xie M**, Ren G, Zhang C, Yu B (2012) The DNA- and RNA- binding protein FACTOR of DNA METHYLATION 1 requires XH domain-mediated complex formation for its function in RNA-directed DNA methylation. *The Plant Journal* 72(3):491-500.
  14. Ren G, **Xie M**, Dou Y, Zhang S, Zhang C, Yu B (2012) Regulation of miRNA abundance by RNA binding protein TOUGH in Arabidopsis. *Proceedings of the National Academy of Sciences (PNAS)* 109(31):12817-21.

### **Patents and Technology Transfer:**

1. Xie M, Chen J, Muchero W, Tuskan J. (2017) Transcriptional Regulator of MYB46 Expression. Invention disclosure titled.
2. Xie M, Chen J, Gunter LE, Jawdy S, Muchero W, Zhang J, Tuskan GA. (2017) Loss of Function Alleles of PtEPSP-TF and its Regulatory Targets in Rice. Invention disclosure titled.
3. Chen J, Hu R, Liu D, Tuskan GA, Xie M, Yang X. (2016). Genes for enhancing drought and heat tolerance in plants, and methods of use. Invention disclosure titled.

### **Funded Proposals:**

1. Illumina Sequencing of ChIP-seq, "ChIP-seq for determining the target genes of a 5-enolpyruvylshikimate-3-phosphate synthase-like protein, a novel transcriptional regulator of

phenylpropanoid and flavonoid pathways in Populus”, Joint Genome Institute, U.S. Department of Energy, 2015.

2. School of Biological Sciences special funds Research Award (Total \$6050 for four proposals), University of Nebraska-Lincoln, 2010-2014.

### **Professional Activities:**

Ad hoc manuscript reviewer (8 journals):

Plant Biotechnology Journal, Biotechnology for Biofuels, PLoS ONE, Plant Cell Reports, Journal of Plant Growth Regulation, Frontiers in Plant Science, Plant Gene, and Plant Science.

Oral Presentations:

1. Xie M. (July 11<sup>th</sup>, 2017) The discovery of novel transcriptional regulatory mechanisms underlying plant biomass recalcitrance. BESC Annual Retreat, Chattanooga, TN.
2. Xie M. (June 13<sup>th</sup>, 2016) Overexpression and Knock-down analysis of Populus novel transcriptional repressor EPSP-TF in various species. BESC Annual Retreat, Chattanooga, TN.
3. Xie M. (October 20<sup>th</sup>, 2012) The function of an SGS3-like Protein in RNA-directed DNA methylation. Plant Science Retreat, Lied Lodge, Nebraska City, NE.
4. Xie M. (May 17<sup>th</sup>, 2012) A subgroup of SGS3-like Proteins Act Redundantly in RNA-directed DNA methylation. Plant Science Innovation Research Group Meeting, University of Nebraska-Lincoln, Lincoln, NE.

Abstracts and Poster Presentations:

1. Xie M, Engle N, Pu Y, Pelletier DA, Labbe J, Tuskan GA, Muchero W, Chen J. (July 11<sup>th</sup>, 2017). ANGUSTIFOLIA and TYROSYL-DNA PHOSPHODIESTERASE 1 interaction regulates growth-defense tradeoffs in Arabidopsis. BESC Annual Retreat, Chattanooga, TN.
2. Xie M, Muchero W, Bryan AC, Yee K, Guo HB, et al. (June 24<sup>th</sup>, 2017) A novel transcriptional regulatory mechanism for phenylpropanoid biosynthesis in Populus. ASPB Plant Biology, Honolulu, HI.
3. Xie M, Muchero W, Bryan AC, Yee K, Guo HB, et al. (June 6<sup>th</sup>, 2017) A novel transcriptional regulatory mechanism for phenylpropanoid biosynthesis in Populus. CROPS 2017, Huntsville, AL.
4. Chen J, Bryan A, Xie M, Yee K, et al. (March 6<sup>th</sup>, 2016). GWAS studies in Populus reveal evolution of two biosynthetic enzymes into transcriptional regulators modulating phosphoenolpyruvate input and chorismate output from the shikimate pathway. Genomic Science Contractors-Grantees Meeting XIV and USDA-DOE Plant Feedstock Genomics for Bioenergy Meeting.
5. Xie M, Muchero W, Bryan A, Chen J, Tuskan GA. (June 13<sup>th</sup>, 2016). A shikimate EPSP synthase evolved transcriptional repressor function in Populus. BESC Annual Retreat,

Chattanooga, TN.

6. Xie M, Bryan A, Tuskan GA, Chen J, Muchero W. (June 15th, 2015). A novel function of a *Populus* EPSP synthase in plant secondary cell wall biosynthesis. BESC Annual Retreat, Chattanooga, TN.
7. Xie M, Ren G, Zhang S, Liu X, Zhang C, Yu B. (September 26th, 2013). The role of a RNA and DNA binding protein FACTOR OF DNA METHYLATION 1 in RNA-directed DNA methylation Pathway in Arabidopsis. Plant Science Symposium, University of Nebraska-Lincoln, Lincoln, NE.
8. Xie M, Ren G, Zhang S, Liu X, Zhang C, Yu B. (October 20th, 2012). The role of a RNA and DNA binding protein FACTOR OF DNA METHYLATION 1 in RNA-directed DNA methylation Pathway in Arabidopsis. Plant Science Retreat, Lied Lodge, Nebraska City, NE.
9. Xie M, Ren G, Yu B. (March 21th, 2012). SGS3-LIKE PROTEIN 1 and 2 are essential for RNA-directed DNA methylation (RdDM). Midwestern ASPB Annual Meeting, Lincoln, NE.
10. Xie M, Ren G, Yu B. (October 22th, 2010). DRS1 and DRS2 homologous function in RNA-directed DNA methylation and transcriptional gene silencing in Arabidopsis. Plant Science Retreat, Lied Lodge, Nebraska City, NE