

Curriculum Vitae

Andrzej T. Wierzbicki

University of Michigan
Department of Molecular, Cellular,
and Developmental Biology (MCDB)
830 N. University Ave.
Ann Arbor, MI 48109-1048
e-mail: wierzbic@umich.edu
Office phone: 734-647-6841

ACADEMIC DEGREES

Ph.D. Biology **2003**
University of Warsaw, Poland
Department of Biology
Howard Hughes Medical Institute International Scholar's Laboratory
Research Advisor: Professor Andrzej Jerzmanowski

M.Sc. Molecular Biology **2000**
University of Warsaw, Poland

PROFESSIONAL APPOINTMENTS

Visiting Professor, International Institute of Molecular Cell Biology **9/2016-8/2017**

Associate Professor with tenure, University of Michigan **9/2015-Present**
Department of Molecular, Cellular, and Developmental Biology

Assistant Professor, University of Michigan **9/2009-8/2015**
Department of Molecular, Cellular, and Developmental Biology

Postdoctoral Research Associate, Washington University in St. Louis **11/2005-8/2009**
Department of Biology
Research Advisor: Professor Craig S. Pikaard

Research Assistant, University of Warsaw, Poland **9/2003-11/2005**
Department of Biology
Howard Hughes Medical Institute International Scholar's Laboratory
Research Advisor: Professor Andrzej Jerzmanowski

PUBLICATIONS

Rowley MJ, Rothi MH, Böhmendorfer G, Kucinski J, **Wierzbicki AT** (2017) Long-Range Control of Gene Expression via RNA-directed DNA Methylation. *PLoS Genet.* published online

Böhmendorfer G, Sethuraman S, Rowley MJ, Krzyszton M, Rothi MH, Bouzit L, **Wierzbicki AT** (2016) Long non-coding RNA produced by RNA polymerase V determines boundaries of heterochromatin. *eLife* 5: e19092.

Ye R, Chen Z, Lian B, Rowley MJ, Xia N, Chai J, Li Y, He XJ, **Wierzbicki AT**, Qi Y. (2016) A Dicer-Independent Route for Biogenesis of siRNAs that Direct DNA Methylation in Arabidopsis. *Mol. Cell* 61: 222-235.

Coruh C, Cho SH, Shahid S, Liu Q, **Wierzbicki AT**, Axtell MJ. (2015) Comprehensive Annotation of *Physcomitrella patens* Small RNA Loci Reveals That the Heterochromatic Short Interfering RNA Pathway Is Largely Conserved in Land Plants. *Plant Cell*. 27:2148-2162.

Böhmdorfer G, **Wierzbicki AT**. (2015) Control of Chromatin Structure by Long Noncoding RNA. *Trends Cell Biol.* 25:623-632.

Böhmdorfer G, Rowley MJ, Kuciński J, Zhu Y, Amies I, **Wierzbicki AT**. (2014) RNA-directed DNA methylation requires stepwise binding of silencing factors to long non-coding RNA. *Plant J.* 79:181-191.

Rowley MJ, Böhmdorfer G, **Wierzbicki AT**. (2013) Analysis of long non-coding RNAs produced by a specialized RNA polymerase in *Arabidopsis thaliana*. *Methods.* 63: 160-169.

Zhu Y, Rowley MJ, Böhmdorfer G, **Wierzbicki AT**. (2013) A SWI/SNF chromatin remodeling complex acts in non-coding RNA-mediated transcriptional silencing. *Mol. Cell.* 49: 298-309.

Zheng Q*, Rowley MJ*, Böhmdorfer G, Sandhu D, Gregory BD, **Wierzbicki AT**. (2013) RNA Polymerase V targets transcriptional silencing components to promoters of protein-coding genes. *Plant J.* 73: 179-189. [*contributed equally]

Wierzbicki AT. (2012) The role of long non-coding RNA in transcriptional gene silencing. *Curr Opin Plant Biol.* 15:517-522

Wierzbicki AT, Cocklin R, Mayampurath A, Lister R, Rowley MJ, Gregory BD, Ecker JR, Tang H, Pikaard CS. (2012) Spatial and functional relationships among Pol V-associated loci, Pol IV-dependent siRNAs, and cytosine methylation in the *Arabidopsis* epigenome. *Genes Dev.* 26:1825-1836

Rowley MJ, Avrutsky MI, Pereira L, **Wierzbicki AT**. (2011) Independent chromatin binding of AGO4 and SPT5L/KTF1 mediates transcriptional gene silencing. *PLoS Genet.* 6: e1002120

Earley KW, Pontvianne F, **Wierzbicki AT**, Blevins T, Tucker S, Costa-Nunes P, Pontes O, Pikaard CS. (2010). Mechanisms of HDA6-mediated rRNA gene silencing: suppression of intergenic Pol II transcription and differential effects on maintenance versus siRNA-directed cytosine methylation. *Genes Dev.* 24:1119-1132.

Wierzbicki AT (2010) Silencing: new faces of Morpheus' molecule. *EMBO J.* 29:279-280.

He XJ, Hsu YF, Zhu S, **Wierzbicki AT**, Pontes O, Pikaard CS, Liu HL, Wang CS, Jin H and Zhu JK (2009) An Effector of RNA-Directed DNA Methylation in *Arabidopsis* Is an ARGONAUTE 4- and RNA-Binding Protein. *Cell* 137(3):498-508

Wierzbicki AT, Ream TS, Haag JR, Pikaard CS. (2009) RNA Polymerase V transcription guides ARGONAUTE4 to chromatin. *Nat. Genet.* 41(5):630-634

Ream TS, Haag JR, **Wierzbicki AT**, Nicora CD, Norbeck A, Zhu J-K, Hagen G, Guilfoyle TJ, Paša-Tolić L and Pikaard CS (2008) Subunit compositions of the RNA silencing enzymes, Pol IV and Pol V reveal their origins as specialized forms of RNA Polymerase II. *Mol. Cell* 33(2):192-203

Wierzbicki AT, Haag JR, Pikaard CS (2008) Noncoding transcription by RNA Polymerase Pol IVb/ Pol V mediates transcriptional silencing of overlapping and adjacent genes. *Cell* 135: 635-648

Pikaard CS, Haag JR, Ream T, **Wierzbicki AT** (2008) Roles of RNA polymerase IV in gene silencing. *Trans Plant Sci.* 13: 390-397

Wierzbicki AT, Jerzmanowski A (2004) Suppression of histone H1 genes in Arabidopsis results in heritable developmental defects and stochastic changes in DNA methylation. *Genetics* 169: 997-1008

Przewłoka MR*, **Wierzbicki AT***, Ślusarczyk J, Kuraś M, Grasser KD, Stemmer C, Jerzmanowski A (2002) The „drought-inducible” histone H1s of tobacco play no role in male sterility linked to alterations in H1 variants. *Planta* 215: 371-379 [*contributed equally]

Ślusarczyk J, **Wierzbicki AT**, Przewłoka MR, Tykarska T, Jerzmanowski A, Kuraś M (2002) Influence of change in the proportion of H1 histone variants on microsporogenesis and development of male gametophyte in transgenic plants of tobacco (*Nicotiana tabacum* L.) *Acta Soc. Bot. Pol.* 72: 25-35

GRANTS

National Science Center, Poland 2015/19/P/NZ1/03619

Title: “Regulation of genome activity in plastids”

Current status: Awarded

Amount awarded: PLN402,932.00

Role: Principal Investigator

Duration: 9/1/2016-8/31/2017

National Institutes of Health GM108722

Title: “Control of chromatin structure by long non-coding RNA”

Current status: Awarded

Amount awarded: \$1,467,763.00

Role: Principal Investigator

Duration: 9/1/2014-8/31/2019

National Science Foundation MCB 1120271

Title: “Mechanism of Non-coding RNA Involvement in Transcriptional Gene Silencing”

Current status: Closed

Amount awarded: \$927,979.00

Role: Principal Investigator

Duration: 1/15/2012-12/31/2016