CURRICULUM VITAE

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**ACADEMIC TRAINING**

# Undergraduate: University of California, Los Angeles, CA, A.B., Bacteriology, 1972

Graduate: University of California, Los Angeles, CA, Ph.D., Microbiology, 1978

Laboratory of Dr. S. C. Rittenberg

Postdoctorate: University of Washington, Seattle, WA, Dept. of Microbiology, 1980

Laboratory of Dr. E. W. Nester

**APPOINTMENTS**

1972-1976 USPHS Predoctoral Trainee, Department of Microbiology, University of California, Los Angeles, CA

1976-1978 Research Assistant, Dr. S.C. Rittenberg, Department of Microbiology, University of California, Los Angeles, CA

1978-1981 Damon Runyon-Walter Winchell Cancer Fund Research Fellow, Department of Microbiology and Immunology, University of Washington, Seattle, WA

1981-1986 Assistant Professor, Department of Microbiology, Washington State University, Pullman, WA

1986 Associate Professor, Department of Microbiology, Washington State University, Pullman, WA

1986-1991 Associate Professor, Department of Plant, Soil and Microbial Sciences, and Department of Microbiology and Molecular Genetics, Michigan State University, East Lansing, MI

1991-present Professor, Department of Plant, Soil and Microbial Sciences, and Department of Microbiology and Molecular Genetics, Michigan State University, East Lansing, MI

1996 Visiting Scholar, Department of Microbiology, University of Washington, Seattle, WA.

2000-present Member, MSU-DOE Plant Research Laboratory

2003-present University Distinguished Professor, Michigan State University

2006-2015 Director, MSU-DOE Plant Research Laboratory

2015-present Appointed, MSU Foundation Professor, Michigan State University

2015-present Founding Director, MSU Plant Resilience Institute

**HONORS / PROFESSIONAL RECOGNITION**

1972 Recipient, USPHS Predoctoral Traineeship, Department of Microbiology, University of California, Los Angeles, CA

1978 Fellow in Cancer Research, Damon Runyon-Walter Winchell Cancer Fund

1980 Recipient, Shell Companies Foundation Grant for Distinguished New Faculty Members

1988 Elected, Member of Sigma Xi

2001 Invited Member, ‘Faculty of 1000’

2001 Recipient, Alexander von Humboldt Foundation Award

2001 Elected, Fellow of the American Academy of Microbiology

2002 Recipient, MSU Distinguished Faculty Award

2003 Appointed, University Distinguished Professor

2003 Elected, Member, U.S. National Academy of Sciences

2004 Elected, President, American Society of Plant Biologists

2007 Recipient, MSU College of Natural Sciences, Outstanding Graduate Student Mentor Award

2008 Elected, Chair, Section 62, National Academy of Sciences

2008 Designated, ISI Highly Cited Researcher (first round of listings)

2009 Elected, Fellow American Society of Plant Biologists

2011 Elected, Fellow American Association for the Advancement of Science

2014 Elected, Chair, AAAS Section on Agriculture, Food, and Renewable Resources

2014 Designated, ISI Highly Cited Researcher (second round of listings)

2014 Recipient, Stephen Hales Prize, American Society of Plant Biologists

2015 Appointed, MSU Foundation Professor

**PUBLICATIONS**

##### *Research Articles*

1. Hespell, R.B., R.A. Rosson, M.F. Thomashow, and S.C. Rittenberg. 1973. Respiration of *Bdellovibrio bacteriovorus* strain 109J and its energy substrates for intraperiplasmic growth. J. Bacteriol. 113:1280-1288.
2. Hespell, R.B., M.F. Thomashow, and S.C. Rittenberg. 1974. Changes in cell composition and viability of *Bdellovibrio bacteriovorus* during starvation. Arch. Microbiol. 97:313-327.
3. Thomashow, M.F., and S.C. Rittenberg. 1978. Penicillin-induced formation of osmotically stable spheroplasts in nongrowing *Bdellovibrio bacteriovorus* J. Bacteriol. 133:1484-1491.
4. Thomashow, M.F. and S.C. Rittenberg. 1978. Intraperiplasmic growth of *Bdellovibrio bacteriovorus* 109J: solubilization of *Escherichia coli* peptidoglycan. J. Bacteriol. 135:998-1007.
5. Thomashow, M.F. and S.C. Rittenberg. 1978. Intraperiplasmic growth of *Bdellovibrio bacteriovorus* 109J: N-deacetylation of *Escherichia coli* peptidoglycan amino sugars. J. Bacteriol. 135:1008-1014.
6. Thomashow, M.F. and S.C. Rittenberg. 1978. Intraperiplasmic growth of *Bdellovibrio bacteriovorus* 109J: attachment of long-chain fatty acids to *Escherichia coli* peptidoglycan. J. Bacteriol. 135:1015-1024.
7. Chilton, M.-D., M.P. Gordon, J. McPherson, R. Saiki, M.F. Thomashow, R. Nutter, S. Gelvin, A.L. Montoya, D.J. Merlo, F.-M. Yang, D. Garfinkle and E.W. Nester. 1979. Characteristics of T-DNA in crown gall tumors. In, "Emergent Techniques for Genetic Improvement of Crops", I. Rubenstein, ed., University of Minnesota Press.
8. Thomashow, M.F., R. Nutter, A.L. Montoya, M.P. Gordon, and E.W. Nester. 1980. Integration and organization of Ti-plasmid sequences in crown gall tumors. Cell 19:729-739.
9. Thomashow, M.F., and C. Panagopoulos, M.P. Gordon, and E.W. Nester. 1980. Host range of *Agrobacterium tumefaciens* is determined by the Ti-plasmid. Nature 283:794-796.
10. Thomashow, M.F., R. Nutter, K. Postel, M.-D. Chilton, F. Blattner, A. Powell, M.P. Gordon, and E.W. Nester. 1980. Recombination between higher plant DNA and the Ti-plasmid of *Agrobacterium tumefaciens*. Proc. Natl. Acad. Sci. USA 77:6448-6452.
11. Yadav, N.S., K. Postel, R.K. Saiki, M.F. Thomashow, and M.-D. Chilton. 1980. T-DNA of a crown gall teratoma is covalently joined to host plant DNA. Nature 287:458-461.
12. Thomashow, M.F., V.C. Knauf, and E.W. Nester. 1981. The relationship between the limited and wide host range octopine-type Ti-plasmids of *Agrobacterium tumefaciens*. J. Bacteriol. 146:484-493.
13. Gelvin, S.B., M.F. Thomashow, J.C. McPherson, M.P. Gordon, and E.W. Nester. 1982. Sizes and map positions of T-DNA encoded transcripts in octopine-type crown gall tumors. Proc. Natl. Acad. Sci. USA 79:76-80.
14. Sciaky, D. and M.F. Thomashow. 1984. The nucleotide sequence of the *tms* transcript 2 locus of the *A. tumefaciens* plasmid pTiA6 and characterization of the mutation in pTiA66 that is responsible for auxin attenuation. Nucleic Acids Res. 12:1447-1461.
15. Flamm, R.K., D.J. Hinrichs, and M.F. Thomashow. 1984. Introduction of pAMß1 into *Listeria monocytogenes* by conjugation and homology between native *L. monocytogenes* plasmids. Infect. Immun. 44:57-161.
16. Thomashow, L.S., S. Reeves, and M.F. Thomashow. 1984. Crown gall oncogenesis: evidence that a T-DNA gene from the *Agrobacterium* Ti plasmid pTiA6 encodes an enzyme that catalyses synthesis of indoleacetic acid. Proc. Natl. Acad. Sci. USA 81:5071-5075.
17. Buchholz, W.G. and M.F. Thomashow. 1984. Comparison of T-DNA oncogene complements of *Agrobacterium tumefaciens* tumor-inducing plasmids with limited and wide host ranges. J. Bacteriol. 160:319-326.
18. Buchholz, W.G. and M.F. Thomashow. 1984. Host range encoded by the *Agrobacterium* tumefaciens tumor-inducing plasmid pTiAg63 can be expanded by modification its T-DNA oncogene complement. J. Bacteriol. 160:327-332.
19. Thomashow, M.F., S. Hugly, W. Buchholz and L.S. Thomashow. 1986. Molecular basis for the auxin-independent phenotype of crown gall tumor tissues. Science 231:616-618.
20. Thomashow, M.F., J.E. Karlinsey, J.R. Marks and R.E. Hurlbert. 1987. Identification of a new virulence locus in *Agrobacterium tumefaciens* that affects polysaccharide composition and bacterial attachment. J. Bacteriol 169:3209-3216.
21. Marks, J.R., T. Lynch, J.E. Karlinsey and M.F. Thomashow. 1987. *Agrobacterium tumefaciens* virulence locus *pscA* is related to the *exoC* locus of *Rhizobium meliloti*. J. Bacteriol 169:5835-5837.
22. Gilmour, S.J., R.K. Hajela and M.F. Thomashow. 1988. Cold acclimation in *Arabidopsis thaliana*. Plant Physiol. 87:745-750.
23. Baldridge, J.R., M.F. Thomashow and D.J. Hinrichs. 1988. Induction of immunity with avirulent *Listeria monocytogenes* 19113 depends on bacterial replication. Infect. Immun. 56:2109-2113.
24. Flamm, R.K., D.J. Hinrichs and M.F. Thomashow. 1989. Cloning of a gene encoding and major secreted polypeptide of *Listeria monocytogenes* and its potential use as a species-specific probe. Appl. and Environ. Microbiol. 55:2251-2256.
25. Martin, G.B., M.F. Thomashow and B.K. Chelm. 1989. *Bradyrhizobium japonicum glnB*, a putative nitrogen regulatory gene, is regulated by NtrC at tandem promoters. J. Bacteriol. 171:5638-5645.
26. Hajela, R.K., D.P. Horvath, S.J. Gilmour and M.F. Thomashow. 1990. Molecular cloning and expression of *cor* (cold-regulated) genes in *Arabidopsis thaliana*. Plant Physiol. 93: 1246-1252.
27. Lin, C., W.W. Guo, E. Everson and M.F. Thomashow. 1990. Cold acclimation in *Arabidopsis* and wheat. A response associated with expression of related genes encoding "boiling-stable" polypeptides. Plant Physiol. 93: 1078-1083.
28. Thomashow, M.F., S.J. Gilmour, R. Hajela, D. Horvath, C. Lin, and W. Guo. 1990. Studies on cold acclimation in *Arabidopsis thaliana*. In: "Horticultural Biotechnology. Plant Biology Volume 11", A.B. Bennett, S.D. O'Neill eds., Wiley-Liss, Inc. New York, pp 305-31
29. Gilmour S.J., and M.F. Thomashow. 1991. Cold acclimation and cold-regulated gene expression in ABA mutants of *Arabidopsis thaliana*. Plant Mol Biol 17:1233-1240
30. Gilmour S.J., N. Artus, M.F. Thomashow. 1992. cDNA sequence analysis and expression of two cold-regulated genes of *Arabidopsis thaliana*. Plant Mol Biol 18:13-21
31. Lin, C., and M.F. Thomashow. 1992. DNA sequence analysis of a cDNA for cold-regulated *Arabidopsis* gene *cor15* and characterization of the COR15 polypeptide. Plant Physiol 99:519-525
32. Lin, C., and M.F. Thomashow. 1992. A cold-regulated *Arabidopsis* gene encodes a polypeptide having potent cryoprotective activity. Biochem Biophys Res Commun 183:1103-1108
33. Guo, W., R.W. Ward, and M.F. Thomashow. 1992. Characterization of a cold-regulated wheat gene related to *Arabidopsis cor47*. Plant Physiol 100:915-922
34. Cotter, T.W., and M.F. Thomashow. 1992. A conjugation procedure for *Bdellovibrio bacteriovorus* and its use to identify DNA sequences that enhance the plaque forming ability of a spontaneous host-independent mutant. J Bacteriol 174:6011-6017
35. Cotter, T.W., and M.F. Thomashow. 1992. Identification of a genetic locus in *Bdellovibrio bacteriovorus, hit* (host-interaction) associated with the host-independent phenotype. J Bacteriol 174:6018-6024
36. Thomashow M.F., S.J. Gilmour, and C. Lin. 1992. Cold-regulated genes of *Arabidopsis thaliana*. In: "Advances in Plant Cold Hardiness", PH Li, L Christersson, eds., CRC Press, Inc., Boca Raton, pp. 32-44
37. Thomashow, M.F. 1993. Characterization of genes induced during cold acclimation in *Arabidopsis thaliana.* In, "Plant responses to cellular dehydration during environmental stress", TJ Close, AB Bray, eds., American Society of Plant Physiologists, Rockville, pp. 137-143
38. Wilhelm K.S., and M.F. Thomashow. 1993. *Arabidopsis thaliana cor15b*, an apparent homolog of *cor15a*, is strongly responsive to cold and ABA, but not drought. Plant Mol Biol 23: 1073-1077
39. Horvath, D.P., B.K. McLarney, and M.F. Thomashow. 1993. Regulation of *Arabidopsis thaliana* L. (Heyn) *cor78* in response to low temperature. Plant Physiol 103: 1047-1053
40. Thomashow, M.F. 1993. Molecular genetics of cold acclimation in *Arabidopsis*. In, "Biotechnology for Aridland Plants", TJ Mobry, HT Nguyen, RA Dixon, MS Bonness, eds., IC2 Institute, University of Texas at Austin Press, Austin, pp. 107-115.
41. Baker, S.S., K.S. Wilhelm, and M.F. Thomashow. 1994. The 5'-region of *Arabidopsis thaliana cor15a* has *cis*-acting elements that confer cold-, drought- and ABA-regulated gene expression. Plant Mol Biol 24: 701-713.
42. Newman, T., F.J. de Bruijn, P. Green, K. Keegstra, H. Kende, L. McIntosh, J. Ohlrogge, N. Raikhel, S. Somerville, M. Thomashow, E. Retzel, and C. Somerville. 1994. Genes galore: a summary of methods for accessing results from large-scale partial sequencing of anonymous Arabidopsis cDNA clones. Plant Physiol 106: 1241-1255.
43. Gilmour, S.J., C. Lin, and M.F. Thomashow. 1996. Purification and properties of *Arabidopsis thaliana* *COR* (cold-regulated) gene polypeptides COR15am and COR6.6 expressed in *Escherichia coli*. Plant Physiol 111: 293-299.
44. Webb, M.S., S.J.Gilmour, M.F.Thomashow and P.L.Steponkus. 1996. Effects of COR6.6 and COR15am polypeptides encoded by *COR* (cold-regulated) genes of *Arabidopsis thaliana* on dehydration-induced phase transitions of phospholipid membranes. Plant Physiol 111: 301-312.
45. Uemura, M., S.J.Gilmour, M.F.Thomashow and P.L.Steponkus. 1996. Effects of COR6.6 and COR15am polypeptides encoded by *COR* (cold-regulated) genes of *Arabidopsis thaliana* on the freeze-induced fusion and leakage of liposomes. Plant Physiol 111: 313-327.
46. Thomashow, M. F., N. N. Artus, L. Bloksberg, S. J. Gilmour, E. J. Stockinger, K. Wilhelm, M. Uemura, M. Webb, P. L. Steponkus. 1996. Cold acclimation in *Arabidopsis thaliana*: function and regulation of *COR* genes. In, “Physical Stresses in Plants. Genes and their Products for Tolerance,” S. Grillo and A. Leone (eds.), Springer, Berlin. pp. 71-81.
47. Artus, N.N., M. Uemura, P.L. Steponkus, S.J.Gilmour, C Lin, and M.F. Thomashow. 1996. Constitutive expression of the cold-regulated *Arabidopsis thaliana COR15a* gene affects both chloroplast and protoplast freezing tolerance. Proc Natl Acad Sci USA 93: 13404-13409.
48. Thomashow, M.F., E.J. Stockinger and S.J. Gilmour. 1997. Regulation of plant gene expression in response to low temperature. In, “Plant Cold Hardiness. Molecular Biology, Biochemistry, and Physiology,” P. H. Li and T. H. H. Chen (eds.), Plenum, New York. pp. 29-34.
49. Thomashow, M. F., E.J. Stockinger, K.R. Jaglo-Ottosen, S.J. Gilmour and D.G. Zarka. 1997. Function and regulation of *Arabidopsis* *thaliana COR* (cold-regulated) genes. ACTA Physiol. Plant. 19: 497-504.
50. Stockinger, E.J., S.J. Gilmour and M.F. Thomashow. 1997. *Arabidopsis thaliana* *CBF1* encodes an AP2 domain-containing transcriptional activator that binds to the C-repeat/DRE, a *cis*-acting DNA regulatory elementthat stimulates transcription in response to low temperature and water deficit. Proc. Natl. Acad. Sci. USA 94: 1035-1040.
51. Jaglo-Ottosen, K. R., S. J. Gilmour, D. G. Zarka, O. Schabenberger and M. F. Thomashow. 1998. *Arabidopsis CBF1* overexpression induces *COR* genes and enhances freezing tolerance. Science 280: 104-106. [Subject of *Science* commentary: E. Pennisi, *Science* 280: 36.]
52. Gilmour, S.J., D.G. Zarka, E.J. Stockinger, M.P. Salazar, J.M. Houghton and M.F. Thomashow. 1998. Low temperature regulation of the *Arabidopsis* CBF family of AP2 transcriptional activators as an early step in cold-induced *COR* gene expression. Plant J. 16: 433-443.
53. Steponkus, P.L., M. Uemura, R.A. Joseph, S.J. Gilmour and M.F. Thomashow. 1998. Mode of action of the *COR15a* gene on the freezing tolerance of *Arabidopsis thaliana*. Proc. Natl. Acad. Sci. USA 95: 14570-14575.
54. O'Connell K.P., A.M. Gustafson, M.D. Lehmann and M.F. Thomashow. 2000. Identification of cold shock gene loci in *Sinorhizobium meliloti* by using a *luxAB* reporter transposon. Appl Environ Microbiol 66:401-405.
55. O'Connell K.P. and M.F. Thomashow. 2000. Transcriptional organization and regulation of a polycistronic cold shock operon in *Sinorhizobium meliloti* RM1021 encoding homologs of the *Escherichia coli* major cold shock gene *cspA* and ribosomal protein gene *rpsU*. Appl Environ Microbiol 66:392-400.
56. Gilmour S.J., A.M. Seblot, M.P. Salazar, J.D. Everard and M.F. Thomashow. 2000. Overexpression of the Arabidopsis *CBF3* transcriptional activator mimics multiple biochemical changes associated with cold acclimation. Plant Physiol 124: 1854-1865.
57. Stockinger E.J., Y. Mao, M.K. Regier, S.J. Triezenberg and M.F. Thomashow. 2001. Transcriptional adaptor and histone acetyltransferase proteins in Arabidopsis and their interactions with CBF1, a transcriptional activator involved in cold-regulated gene expression. Nucl Acids Res 29: 1524-1533.
58. Thomashow M.F., S.J. Gilmour, E.J. Stockinger, K.R. Jaglo-Ottosen and D.G. Zarka. 2001. Role of the Arabidopsis CBF transcriptional activators in cold acclimation. Physiol Plant 112: 171-175.
59. Jaglo K.R., S. Kleff, K. Amundsen, X. Zhang, V. Haake, J. Zhang, T. Deits and M.F. Thomashow. 2001. Components of the Arabidopsis CBF cold-response pathway are conserved in *Brassica napus* and other plant species. Plant Physiol 127: 910-917.
60. Owens, C.L., M.F. Thomashow, J.F. Hancock and A.F. Iezzoni. 2002. CBF1 orthologs in sour cherry and strawberry and the heterologous expression of CBF1 in strawberry. J Amer Soc Hort Sci 127:489-494.
61. Liu J.Y., S.J. Gilmour J. Nicodemus, M.F. Thomashow and S. van Nocker. 2002. Cold signalling associated with vernalization in Arabidopsis thaliana does not involve CBF1 or abscisic acid. Physiol Plant 114: 125-134.
62. Huang. T., , D.G. Zarka, M.F. Thomashow, M. Wisniewski and J.G. Duman. 2002. Expression of an insect (*Dendroides canadensis*) antifreeze protein in *Arabidopsis thaliana* results in a decrease in plant freezing temperature. Plant Mol Biol 50: 333-344.
63. Gustafson, A.M., K.P. O’Connell and M.F. Thomashow. 2002. Regulation of *Sinorhizobium meliloti* 1021 *rrnA*-reporter gene fusions in response to cold shock. Can J Microbiol 48: 821-830.
64. Haake V., D. Cook, J. L. Riechmann, O. Pineda, M.F. Thomashow and J.Z. Zhang. 2002. Transcription factor CBF4 is a regulator of drought adaptation in *Arabidopsis thaliana*. Plant Physiol 130: 709-783.
65. Fowler S., and M.F. Thomashow. 2002. Arabidopsis transcriptome profiling indicates multiple regulatory pathways are activated during cold acclimation in addition to the CBF cold-response pathway. Plant Cell 14: 1675-1690.
66. Vlachonasios K.E., M.F. Thomashow and S.J. Triezenberg. 2003. Disruption mutations of *ADA2b* and *GCN5* transcriptional adaptor genes dramatically affect Arabidopsis growth, development, and gene expression. Plant Cell 15: 626-638.
67. Zarka, D.G., J.T. Vogel, D. Cook, M.F. Thomashow. 2003. Cold induction of Arabidopsis CBF genes involves multiple ICE (inducer of CBF expression) promoter elements and a cold-regulatory circuit that is desensitized by low temperature. Plant Physiol 133: 910-918.
68. Heather Knight H., D.G. Zarka, H. Okamoto, M.F. Thomashow and M.R. Knight. 2004. ABA induces CBF gene transcription and expression via the CRT promoter element, Plant Physiol 135: 1710-1717.
69. Gilmour S.J., S.G. Fowler and M.F. Thomashow. 2004. Arabidopsis transcriptional activators CBF1, CBF2, and CBF3 have matching functional activities. Plant Mol Biol 54: 767-781.
70. Zhang X., S. Fowler, H. Cheng, Y. Lou, S.Y. Rhee, E.J. Stockinger and M.F. Thomashow. 2004. Freezing sensitive tomato has a functional CBF cold response pathway, but a CBF regulon that differs from that of freezing tolerant Arabidopsis. Plant J 39: 905-919.
71. Cook D., S. Fowler, O. Fiehn and M.F. Thomashow. 2004. A prominent role of the CBF cold response pathway in configuring the low temperature metabolome of Arabidopsis. Proc Natl Acad Sci USA 101: 15243-15248. [Subject of *PNAS* commentary: J Browse, BM Lange, PNAS 101:1499-14997.]
72. Vogel, J.T., D.G. Zarka, H.A. Van Buskirk, S.G. Fowler, and M.F. Thomashow. 2005. Roles of the CBF2 and ZAT12 transcription factors in configuring the low temperature transcriptome of Arabidopsis. Plant J 41: 195-211. [Cover photograph.]
73. Fowler, S.G., D. Cook, and M.F. Thomashow. 2005. Low temperature induction of Arabidopsis CBF1-3 is gated by the circadian clock. Plant Physiol 137: 961-968.
74. Ponder, M.A., S.J. Gilmour, P.W. Bergholz, C.A. Mindock, R. Hollingsworth, M.F. Thomashow, and J.M. Tiedje. 2005. Characterization of potential stress responses in ancient Siberian permafrost psychroactive bacteria. FEMS Microb Ecol 53:103-115.
75. Skinner, J.S., J. von Zitzewitz, L. Marquez-Cedillo, T. Filichkin, P. Szcs, K. Amundsen, E.J. Stockinger, M.F. Thomashow, T.H.H. Chen, and P.M. Hayes. 2005. Barley contains a large CBF gene family associated with quantitative cold tolerance traits. In: T.H.H Chen, M. Uemura, and S. Fujikawa, (eds.), Cold Hardiness in Plants: Molecular Genetics, Cell Biology and Physiology. CAB International, Oxon, UK, pp. 30-52.
76. Vogel, J.T., D. Cook, S.G. Fowler, and M.F. Thomashow. 2005. The CBF cold response pathways of *Arabidopsis* and tomato. In: T.H.H Chen, M. Uemura, and S. Fujikawa, (eds.), Cold Hardiness in Plants: Molecular Genetics, Cell Biology and Physiology. CAB International, Oxon, UK, pp. 11-29.
77. [Skinner JS](http://www.ncbi.nlm.nih.gov/entrez/query.fcgi?db=pubmed&cmd=Search&itool=pubmed_Abstract&term=%22Skinner+JS%22%5BAuthor%5D), [von Zitzewitz J](http://www.ncbi.nlm.nih.gov/entrez/query.fcgi?db=pubmed&cmd=Search&itool=pubmed_Abstract&term=%22von+Zitzewitz+J%22%5BAuthor%5D), [Szucs P](http://www.ncbi.nlm.nih.gov/entrez/query.fcgi?db=pubmed&cmd=Search&itool=pubmed_Abstract&term=%22Szucs+P%22%5BAuthor%5D), [Marquez-Cedillo L](http://www.ncbi.nlm.nih.gov/entrez/query.fcgi?db=pubmed&cmd=Search&itool=pubmed_Abstract&term=%22Marquez%2DCedillo+L%22%5BAuthor%5D), [Filichkin T](http://www.ncbi.nlm.nih.gov/entrez/query.fcgi?db=pubmed&cmd=Search&itool=pubmed_Abstract&term=%22Filichkin+T%22%5BAuthor%5D), [Amundsen K](http://www.ncbi.nlm.nih.gov/entrez/query.fcgi?db=pubmed&cmd=Search&itool=pubmed_Abstract&term=%22Amundsen+K%22%5BAuthor%5D), [Stockinger EJ](http://www.ncbi.nlm.nih.gov/entrez/query.fcgi?db=pubmed&cmd=Search&itool=pubmed_Abstract&term=%22Stockinger+EJ%22%5BAuthor%5D), [Thomashow MF](http://www.ncbi.nlm.nih.gov/entrez/query.fcgi?db=pubmed&cmd=Search&itool=pubmed_Abstract&term=%22Thomashow+MF%22%5BAuthor%5D), [Chen TH](http://www.ncbi.nlm.nih.gov/entrez/query.fcgi?db=pubmed&cmd=Search&itool=pubmed_Abstract&term=%22Chen+TH%22%5BAuthor%5D), [Hayes PM](http://www.ncbi.nlm.nih.gov/entrez/query.fcgi?db=pubmed&cmd=Search&itool=pubmed_Abstract&term=%22Hayes+PM%22%5BAuthor%5D). 2005. Structural, functional, and phylogenetic characterization of a large CBF gene family in barley. [Plant Mol Biol](javascript:AL_get(this,%20'jour',%20'Plant%20Mol%20Biol.');) 59:533-51.
78. [Wang Z](http://www.ncbi.nlm.nih.gov/entrez/query.fcgi?db=pubmed&cmd=Search&itool=pubmed_Abstract&term=%22Wang+Z%22%5BAuthor%5D), [Triezenberg SJ](http://www.ncbi.nlm.nih.gov/entrez/query.fcgi?db=pubmed&cmd=Search&itool=pubmed_Abstract&term=%22Triezenberg+SJ%22%5BAuthor%5D), [Thomashow MF](http://www.ncbi.nlm.nih.gov/entrez/query.fcgi?db=pubmed&cmd=Search&itool=pubmed_Abstract&term=%22Thomashow+MF%22%5BAuthor%5D), [Stockinger EJ](http://www.ncbi.nlm.nih.gov/entrez/query.fcgi?db=pubmed&cmd=Search&itool=pubmed_Abstract&term=%22Stockinger+EJ%22%5BAuthor%5D). 2005. Multiple hydrophobic motifs in Arabidopsis CBF1 COOH-terminus provide functional redundancy in trans-activation. [Plant Mol Biol](javascript:AL_get(this,%20'jour',%20'Plant%20Mol%20Biol.');) 58:543-59
79. [Mao Y](http://www.ncbi.nlm.nih.gov/entrez/query.fcgi?db=pubmed&cmd=Search&itool=pubmed_Abstract&term=%22Mao+Y%22%5BAuthor%5D), [Pavangadkar KA](http://www.ncbi.nlm.nih.gov/entrez/query.fcgi?db=pubmed&cmd=Search&itool=pubmed_Abstract&term=%22Pavangadkar+KA%22%5BAuthor%5D), [Thomashow MF](http://www.ncbi.nlm.nih.gov/entrez/query.fcgi?db=pubmed&cmd=Search&itool=pubmed_Abstract&term=%22Thomashow+MF%22%5BAuthor%5D), [Triezenberg SJ](http://www.ncbi.nlm.nih.gov/entrez/query.fcgi?db=pubmed&cmd=Search&itool=pubmed_Abstract&term=%22Triezenberg+SJ%22%5BAuthor%5D). 2006. Physical and functional interactions of Arabidopsis ADA2 transcriptional coactivator proteins with the acetyltransferase GCN5 and with the cold-induced transcription factor CBF1. [Biochim Biophys Acta-Gene Structure and Exp](javascript:AL_get(this,%20'jour',%20'Biochim%20Biophys%20Acta.');) 1759:69-79.
80. [Rodrigues DF](http://www.ncbi.nlm.nih.gov/entrez/query.fcgi?db=pubmed&cmd=Search&itool=pubmed_Abstract&term=%22Rodrigues+DF%22%5BAuthor%5D), [Goris J](http://www.ncbi.nlm.nih.gov/entrez/query.fcgi?db=pubmed&cmd=Search&itool=pubmed_Abstract&term=%22Goris+J%22%5BAuthor%5D), [Vishnivetskaya T](http://www.ncbi.nlm.nih.gov/entrez/query.fcgi?db=pubmed&cmd=Search&itool=pubmed_Abstract&term=%22Vishnivetskaya+T%22%5BAuthor%5D), [Gilichinsky D](http://www.ncbi.nlm.nih.gov/entrez/query.fcgi?db=pubmed&cmd=Search&itool=pubmed_Abstract&term=%22Gilichinsky+D%22%5BAuthor%5D), [Thomashow MF](http://www.ncbi.nlm.nih.gov/entrez/query.fcgi?db=pubmed&cmd=Search&itool=pubmed_Abstract&term=%22Thomashow+MF%22%5BAuthor%5D), [Tiedje JM](http://www.ncbi.nlm.nih.gov/entrez/query.fcgi?db=pubmed&cmd=Search&itool=pubmed_Abstract&term=%22Tiedje+JM%22%5BAuthor%5D) 2006. Characterization of Exiguobacterium isolates from the Siberian permafrost. Description of Exiguobacterium sibiricum sp. nov. [Extremophiles 10: 285-294.](javascript:AL_get(this,%20'jour',%20'Extremophiles.');)
81. [Skinner JS](http://www.ncbi.nlm.nih.gov/entrez/query.fcgi?db=pubmed&cmd=Search&itool=pubmed_Abstract&term=%22Skinner+JS%22%5BAuthor%5D), [Szucs P](http://www.ncbi.nlm.nih.gov/entrez/query.fcgi?db=pubmed&cmd=Search&itool=pubmed_Abstract&term=%22Szucs+P%22%5BAuthor%5D), [von Zitzewitz J](http://www.ncbi.nlm.nih.gov/entrez/query.fcgi?db=pubmed&cmd=Search&itool=pubmed_Abstract&term=%22von+Zitzewitz+J%22%5BAuthor%5D), [Marquez-Cedillo L](http://www.ncbi.nlm.nih.gov/entrez/query.fcgi?db=pubmed&cmd=Search&itool=pubmed_Abstract&term=%22Marquez%2DCedillo+L%22%5BAuthor%5D), [Filichkin T](http://www.ncbi.nlm.nih.gov/entrez/query.fcgi?db=pubmed&cmd=Search&itool=pubmed_Abstract&term=%22Filichkin+T%22%5BAuthor%5D), [Stockinger EJ](http://www.ncbi.nlm.nih.gov/entrez/query.fcgi?db=pubmed&cmd=Search&itool=pubmed_Abstract&term=%22Stockinger+EJ%22%5BAuthor%5D), [Thomashow MF](http://www.ncbi.nlm.nih.gov/entrez/query.fcgi?db=pubmed&cmd=Search&itool=pubmed_Abstract&term=%22Thomashow+MF%22%5BAuthor%5D), [Chen TH](http://www.ncbi.nlm.nih.gov/entrez/query.fcgi?db=pubmed&cmd=Search&itool=pubmed_Abstract&term=%22Chen+TH%22%5BAuthor%5D), [Hayes PM](http://www.ncbi.nlm.nih.gov/entrez/query.fcgi?db=pubmed&cmd=Search&itool=pubmed_Abstract&term=%22Hayes+PM%22%5BAuthor%5D). 2006. Mapping of barley homologs to genes that regulate low temperature tolerance in Arabidopsis. [Theor Appl Genet](javascript:AL_get(this,%20'jour',%20'Theor%20Appl%20Genet.');) 112:832-42.
82. Bakermans C, Ayala-del-Rio H L, Ponder MA, Vishnivetskaya T, Gilichinsky D, Thomashow MF and Tiedje JM. 2006. *Psychrobacter cryohalolentis* sp. nov. and *Psychrobacter arcticus* sp. nov., isolated from Siberian permafrost. Int J Syst Evol Microbiol 56: 1285-1291
83. Bakermans C, Tollaksen SL, Giometti CS, Wilkerson C, Tiedje JM, Thomashow MF. 2007. Proteomic analysis of *Psychrobacter cryohalolentis* K5 during growth at subzero temperature. Extremophiles 11: 343-354.
84. Zheng S, Ponder MA, Shih JY, Tideje JM, Thomashow MF, Lubman DM. 2007. A proteomic analysis of Psychrobacter articus 273-4 adaptation to low temperature and salinity using a 2D liquid mapping approach. Electrophoresis 28: 467-488.
85. Pino MT, Skinner JS, Park EJ, Jeknić Z, Hayes PM, Thomashow MF, Chen THH. 2007. Use of a stress inducible promoter to drive ectopic AtCBF expression improves potato freezing tolerance while minimizing negative effects on tuber yield. Plant Biotech J 5: 591-604.
86. Pino MT, Skinner JS, JeknicZ, Hayes PM, Soeldner AH, Thomashow MF, Chen THH. 2008. [Ectopic AtCBF1 over-expression enhances freezing tolerance and induces cold acclimation-associated physiological modifications in potato](http://apps.isiknowledge.com.proxy2.cl.msu.edu/full_record.do?product=WOS&search_mode=GeneralSearch&qid=1&SID=1FmDpKDI9AEHM1a7Kjc&page=1&doc=3). Plant Cell Environment 31: 393-406
87. Ponder MA, Thomashow MF, Tiedje JM. 2008. [Metabolic activity of Siberian permafrost isolates, Psychrobacter arcticus and Exiguobacterium sibiricum, at low water activities](http://apps.isiknowledge.com.proxy2.cl.msu.edu/full_record.do?product=WOS&search_mode=GeneralSearch&qid=1&SID=1FmDpKDI9AEHM1a7Kjc&page=1&doc=2). Extremeophiles 12: 481-490
88. Hark AT, Vlachonasios KE, Pavangadkar KA, Rao S, Gordon H, Adamakis ID, Kaldis A, Thomashow MF, Triezenberg SJ. 2009. Two Arabidopsis orthologs of the transcriptional coactivator ADA2 have distinct biological functions. Biochim Biophys Acta 1789: 117-124.
89. Bakermans C, Sloup RE, Zarka DG, Tiedje JM and Thomashow MF. 2009. Development and use of genetic system to identify genes required for efficient low-temperature growth of *Psychrobacter arcticus* 273-4. Extremophiles 13: 21-30
90. Zou C, Lehti-Shiu MD, Thomashow M, Shiu SH. 2009. Evolution of stress-regulated gene expression in duplicate genes of Arabidopsis thaliana. PLOS Genet 5: e1000581
91. Doherty CJ, Van Buskirk HA, Myers S, Thomashow MF. 2009. Roles of Arabidopsis CAMTA transcription factors in cold-regulated gene expression and freezing tolerance. Plant Cell 21: 972-984 [Subject of *Plant Cell* commentary: NA Eckardt, Plant Cell 21:697.]
92. Mikkelsen MD, Thomashow MF. 2009. A role for circadian evening elements in cold-regulated gene expression in Arabidopsis. Plant J 60: 328-339
93. Ayala-del-Río HL, PS Chain, JJ Grzymski, MA Ponder, N Ivanova, PW Bergholz, G Di Bartolo, L Hauser, M Land, C Bakermans, D Rodrigues, J Klappenbach,D Zarka, F Larimer, P Richardson, A Murray, M Thomashow, JM Tiedje (2010) The genome sequence of *Psychrobacter arcticus* 273-4, a psychroactive Siberian permafrost bacterium, reveals mechanisms for adaptation to low-temperature growth. Appl Environ Micobiol 76: 2304-2312
94. Canella D, Gilmour SJ, Kuhn LA, Thomashow MF. 2010. DNA binding by the Arabidopsis CBF1 transcription factor required the PKKP/RAGRxKFxETRHP signature sequence. Biochim Biophys Acta 1799: 454-462.
95. Pavangadkar K, Thomashow MF, Triezenberg SJ. 2010. Histone dynamics and roles of histone acetyltransferases during cold-induced gene regulation in Arabidopsis. Plant Mol Biol 74: 183-200
96. Carvallo MA, Pino MT, Jenić, Z, C Zou, Doherty CJ, Shiu SH, Chen THH, Thomashow MF. 2011. A comparison of the low temperature transcriptomes and CBF regulons of three plant species that differ in freezing tolerance: *Solanum commersonii*, *Solanum tuberosum*, and *Arabidopsis thaliana*. J Experimental Botany 62: 3807-3819
97. Dong MA, Farré EM, Thomashow MF (2011) CIRCADIAN CLOCK-ASSOCIATED and LATE ELONGATED HYPOCOTYL regulate expression of the C-REPEAT BINDING FACTOR (CBF) pathway in Arabidopsis. Proc. Natl. Acad. Sci. USA 108: 7241-7246
98. Zou C, Sun K, Mackaluso JD, Seddon AE, Jin R, Thomashow MF, Shiu SH (2011) Cis-regulatory code of stress responsive transcription in Arabidopsis thaliana. Proc. Natl. Acad. Sci. USA 108: 14992-14997
99. Yang DL, Yao J, Mei CS, Tong XH, Zeng LJ, Li Q, Xiao LT, Sun TP, Li J, Deng XW, Lee CM, Thomashow MF, Yang Y, He Z, He SY (2012) Plant hormone jasmonate prioritizes defense over growth by interfering with gibberellin signaling cascade. Proc. Natl. Acad. Sci. USA 109: E1192-E1200
100. Lee CM, Thomashow MF (2012) Photoperiodic regulation of the C-repeat binding factor (CBF) cold acclimation pathway and freezing tolerance in *Arabidopsis thaliana*. Proc. Natl. Acad. Sci. USA 109: 15054-15059
101. Kim YS, Park S, Gilmour SJ, Thomashow MF (2013) Roles of CAMTA transcription factors and salicylic acid in configuring the low temperature transcriptome and freezing tolerance of Arabidopsis. Plant J 75: 364-376
102. Kim WC, Reca IB, Kim YS, Park S, Thomashow MF, Keegstra K, Han KH (2014) Transcription factors that directly regulate the expression of *CSLA9* encoding mannan synthases in *Arabidopsis thaliana*. Plant Mol Biol 84: 577-587
103. Park S, Lee CM, Doherty CJ, Gilmour SJ, Kim Y, Thomashow MF (2015) Regulation of the Arabidopsis CBF regulon by a complex low-temperature regulatory network. Plant J 82: 193-207 (Subject of “Spotlight” commentary in *Trends in Plant Science*: Zhao et al., TIPS 8: 466-368)
104. Gehan MA, Park S, Gilmour SJ, An C, Lee CM, Thomashow MF (2015) Natural variation in the C-repeat binding factor cold response pathway correlates with local adaptation of Arabidopsis ecotypes. Plant J 84: 682-693clear

###### *Review Articles*

1. Rittenberg, S.C. and M.F. Thomashow. 1979. Intraperiplasmic growth--life in a cozy environment. In, "Microbiology-1979", D. Schlessinger, ed., ASM, Washington, D.C. pp. 80-86.
2. Thomashow, M.F. and S.C. Rittenberg. 1979. The intraperiplasmic growth cycle -- The life style of the bdellovibrios. In, "Development and Morphogenesis in Prokaryotes", Paris JH ed., Blackwell Scientific Publishers, Osney Mead, Oxford. pp. 115-138.
3. Nutter, R.C., M.F. Thomashow, M.P. Gordon and E.W. Nester. 1981. *Agrobacterium*: Nature's Genetic Engineer. In, "Genetic Engineering in the Plant Sciences", N.J. Panopoulos, ed., Praeger Press.
4. Binns, A.N. and M.F. Thomashow. 1988. Cell biology of *Agrobacterium* infection and transformation of plants. Ann. Rev. Microbiol. 42:575-606.
5. Thomashow, M.F., S.J. Gilmour and A.N. Binns. 1989. Phytohormone synthesis: pathways, genes, and mutations. In, "Cell Culture and Somatic Cell Genetic of Plants. Volume 6. Molecular Biology of Plant Nuclear Genes", J. Schell and I. K. Vasil (eds.), Academic Press, New York. pp. 263-295.
6. Thomashow, M.F. 1990. Molecular genetics of cold acclimation in higher plants. Adv Genet 28:99-131
7. Thomashow M.F. and T.W. Cotter. 1992. *Bdellovibrio* host-dependence: the search for signal molecules and genes that regulate the intraperiplasmic growth cycle. J Bacteriol 174:5767-5771
8. Thomashow, M.F. 1993. Genes induced during cold acclimation in higher plants. In, "Advances in Low-Temperature Biology. Volume 2", P.L. Steponkus ed., JAI Press LTD, London, pp. 183-210
9. Thomashow, M.F. 1994. *Arabidopsis thaliana* as a model for studying mechanisms of plant cold tolerance. In “Arabidopsis,” E. Meyerowitz and C. Somerville (eds.), Cold Spring Harbor Laboratory Press, New York. pp. 807-834
10. Thomashow, M. F. 1998. Role of cold-responsive genes in plant freezing tolerance. Plant Physiol. 118: 1-7
11. Thomashow, M. F. and J. Browse. 1999. Plant Cold Tolerance. In, “Drought, Salt, Cold and Heat Stress: Molecular Responses in Higher Plants,” K. Shinozaki and K. Yamaguchi-Shinozaki (eds.), R. G. Landes Company, Austin, pp. 61-80.
12. Thomashow, M. F. 1999. Regulation of plant cold acclimation. In “Plant Responses to Environmental Stress,” M.F. Smallwood, C.M. Clavert and D.J. Bowles (eds.), Bios Scientific Publishers Limited, Oxford, pp. 75-82.
13. Thomashow, M. F. 1999. Plant Cold Acclimation: freezing tolerance genes and regulatory mechanisms. Annu. Rev. Plant Physiol. Plant Mol. Biol. 50: 571-599.
14. Thomashow, M. F. 2001. So what’s new in the field of plant cold acclimation? Lots! Plant Physiol 125: 89-93.
15. Fowler, S., D. Cook and M.F. Thomashow. 2005. The CBF cold response pathway. In “Plant Abiotic Stress,” M.A. Jenks and P.M. Hasegawa (eds.), Blackwell Publishing, Oxford, pp. 71-99.
16. [Van Buskirk HA](http://wos.isiknowledge.com/CIW.cgi?SID=A1b1E6n2IcL1MEPGnOg&Func=OneClickSearch&field=AU&val=Van+Buskirk+HA&curr_doc=1/5&Form=FullRecordPage&doc=1/5), [Thomashow MF](http://wos.isiknowledge.com/CIW.cgi?SID=A1b1E6n2IcL1MEPGnOg&Func=OneClickSearch&field=AU&val=Thomashow+MF&curr_doc=1/5&Form=FullRecordPage&doc=1/5). 2006. Arabidopsis transcription factors regulating cold acclimation. Physiol Plant 126: 72-80
17. Thomashow MF. 2010. Molecular basis of plant cold acclimation: insights gained from studying the CBF cold response pathway. Plant Physiol 154: 571-577

###### *Other*

1. Thomashow, M.F. and L. A. Mooney. 1994. NABC6: an overview. In “NABC Report6. Agricultural Biotechnology and the Public Good,” J. F. MacDonald (ed.), National Agricultural Biotechnology Council, New York. pp. 3-29.
2. Kleff, S., and M. F. Thomashow. 1999. Engineering crops that can handle the weather. PBI Bulletin, May 1999, Plant Biotechnology Institute, National Research Council, Canada. pp. 11-12.
3. Keegstra K. and M. Thomashow. 2002. Adapting physiology and metabolism to changes in the environment: editorial overview. Curr Opin Plant Biol 5: 191-192.
4. Thomashow, M.F. 2002. Engineering new phenotypes for abiotic stress tolerance by expression of transcription factors. In, “Criteria for Field Testing of Plant With Engineered Regulatory, Metabolic and Signaling Pathways,” L.L. Wolfenbarger (ed.), Information Systems for Biotechnology, Blacksburg, VA. pp. 91-94.
5. Thomashow, M.F. 2005. Wow!!! The T-DNA is Integrated. In, “Agrobacterium tumefaciens. From Plant Pathology to Biotechnology,” E. Nester, M.P. Gordon, A. Kerr (eds.), APS Press, St. Paul, MN pp. 102-104.