

## MING-SHUN CHEN

### Business Address:

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### Education:

Ph.D. Biochemistry – Kansas State University – 1991

M.S. Entomology – Fujian Agricultural University – 1984

B.S. Plant Protection – Hunan Agricultural University – 1981

### Professional Experience:

2001 – Current      Lab director, Research Entomologist  
Agricultural Research Service  
US Department of Agriculture

Adjunct professor  
Department of Entomology  
Kansas State University, Manhattan, KS 66506

1993 – 2000      Instructor, Section of Cancer Biology  
Washington University, St. Louis, MO 63108

1991 – 1992      Postdoctoral Associate, Section of Cancer Biology  
Washington University, St. Louis, MO 63108

### Research interest

Molecular interactions between parasites and host plants; molecular mechanisms of plant resistance and susceptibility to parasites; molecular determinants of plant gall formation; and insect genetics, genomics, and molecular biology.

### Editorial Board

2010 – present      “*Open Journal of Genetics*”

2015 – present      “*Scientific Reports*”

2020 – present      “*Insects*”

## Patents:

1. MS Chen, XM Liu, H Trick (2017) *Mayetiola destructor* susceptibility gene one (*Mds-1*) and its application in pest management. US 2017/ 9587248.

## Publications:

1. Zhang G, Martin TJ, Fritz AK, Li Y, Bai G, Bowden RL, **Chen MS**, Jin Y, Chen X, Kolmer JA, Seabourn BW, Chen RY, and Marshall DS (2020) Registration of 'KS Dallas' red winter wheat. *Journal of Plant Registration*.  
<https://access.onlinelibrary.wiley.com/doi/full/10.1002/plr2.20108>.
2. Zhang G, Fritz AK, Haley S, Li Y, Bai G, Bowden RL, **Chen MS**, Jin Y, Chen X, Kolmer JA, Seabourn BW, Chen RY, and Marshall DS (2020) Registration of 'KS Western Star' hard red winter wheat.  
<https://access.onlinelibrary.wiley.com/doi/full/10.1002/plr2.20104>.
3. Baenziger PS, Graybosch RA, Rose DJ, Xu L, Guttieri MJ, Regassa T, Klein RN, Kruger GR, Santra DK, Hergert GW, Wegulo SN, Jin Y, Kolmer J, Hein GL, Bradshaw J, **Chen MS**, Bai G, Bowden RL, El-Basyoni I, and Lorenz A (2020) Registration of "NE10589" (Husker Genetics brand "Ruth") Hard Red Winter Wheat'. *Journal of Plant Registration*. 14: 388-397.
4. Niu F, Xu Y, Liu X, Zhao L, Bernardo A, Li Y, Liu G, Chen M-S, Gao L, Xu X, Bai G (2020) The Hessian fly recessive resistance gene *h4* in 'Java' mapped to chromosome 1A using genotyping-by-sequencing. *Theoretical and Applied Genetics* 133:2927-2935.
5. Favery B, Dubreuil G, Chen MS, Giron D, Abad P (2020) Convergent and conserved strategies of plant manipulation by gall-inducing insects and nematodes. *Annual Review of Phytopathology* 58: 1-22.
6. Al-jbory ZA, Aikins MJ, Park Y, Reeck GR, **Chen MS** (2020) Differential localization of Hessian fly candidate effectors in resistant and susceptible wheat plants. *Plant Direct* 4(8): e0046.
7. Chen X, Yang Z, Chen H, Qi Q, Liu J, Wang C, Shao S, Lu Q, Li Y, Wu H, King-Jones K, **Chen MS** (2020) A complex nutrient exchange between a gall-forming aphid and its plant host. *Frontiers in Plant Science* 11:811.  
<https://doi.org/10.3389/fpls.2020.0081>.
8. Zhao L, Abdelsalam NR, Xu Y, **Chen MS**, Feng Y, Kong L, Bai G (2020) Identification of two novel Hessian fly resistance genes H35 and H36 in a hard winter wheat line SD0165. *Theoretical and Applied Genetics* 133(8): 2343-2353. <https://link.springer.com/content/pdf/10.1007/s00122-020-03602-3.pdf>.
9. Zhu L, Yuan J, O'Neal J, Brown D, Chen MS (2020) Analyzing molecular basis of heat-induced loss of wheat resistance to Hessian fly (Diptera: Cecidomyiidae) infestation using RNA-sequencing. *Journal of Economic Entomology* 113 (3): 1504-1512.
10. Liu G, Liu X, Xu Y, Bernardo A, **Chen MS**, Li Y, Niu F, Zhao L, Bai G (2020) Reassign Hessian fly resistance genes, *H7* and *H8*, to chromosomes 6A and 2B of the wheat cultivar 'Seneca' using genotyping-by-sequencing. *Crop Science*. 60: 1488-1498.

11. Cheng X, Graces-Carrera S, Whitworth RJ, Fellers JP, Park Y, **Chen MS** (2020) A horizontal gene transfer led to the acquisition of a fructan metabolic pathway in a gall midge. *Advanced Biosystem*. 4(4): e1900275.
12. Zhang G, Martin TJ, Fritz AK, Regan R, Bai G, **Chen MS**, Bowden RL, Jin Y, Chen X, Kolmer JA, Chen RY, Seabourn BW (2020) Registration of ‘KS Venada’ hard white winter wheat. *Journal of Plant Registration*. 14: 153-158.
13. Andreas P, Kisiala A, Emery RJN, De Clerck-floate RM, Tooker JF, Price PW, Miller DG, **Chen MS**, Connor EF (2020) Cytokinins are abundant and widespread among insect species. *Plants* 9(2): 208; <https://doi.org/10.3390/plants9020208>.
14. Ningh N, Steeves R, **Chen MS**, El-Bouhssini M, Pumphrey M, Poland J (2020) Registration of Hessian fly resistant germplasm KS18WGRC65 carrying *H26* in hard red winter wheat 'Overley' background. *Journal of Plant Registration*. 14: 206-209.
15. Ningh N, Steeves R, **Chen MS**, El-Bouhssini M, Pumphrey M, Poland J (2019) Registration of Hessian fly resistant germplasm KS18WGRC65 carrying in hard red winter wheat 'Overley' background. *Journal of Plant Registration*. 14: 206-209.
16. Wang W, Liu P, Lu Q, Ling X, Zhang J, **Chen MS**, Chen H, Chen X (2019) Potential pathways and genes involved in lac synthesis and secretion in *Kerria chinensis* (Hemiptera: Kerriidae) based on transcriptomic analyses. *Insects* 10: 430; doi:10.3390/insects10120430.
17. Rudd JC, Devkota R, Ibrahim A, Baker J, Baker S, Sutton R, Simoneaux R, Opena G, Hathcoat D, Awida J, Nelson L, Liu S, Xue Q, Bean B, Neely C, Duncan R, Seaboun B, Bowden R, Jin Y, **Chen MS**, Graybosch R (2019) ‘TAM 204’ Wheat, Adapted to Grazing, Grain, and Graze-out Production Systems in the Southern High Plains. *Journal of Plant Registration* 13(3): 377-382.
18. Lu S, **Chen MS**, Li J, Shi Y, Gu Q, Yan F (2019) Changes in *Bemisia tabaci* feeding behaviors caused directly and indirectly by cucurbit chlorotic yellow virus. *Virology Journal* 16(1): 1-14.
19. Wu ZZ, Kang C, Qu MQ, Chen J, **Chen MS**, Bin SY, Lin JT (2019) Candidates for chemosensory genes identified in the Chinese citrus fly, *Bactrocera minax*, through a transcriptomic analysis. *BMC Genomics* 20: 646.
20. Wu ZZ, Gui Y, Qu MQ, Lin JH, **Chen MS**, Bin SY, Lin JT (2019) Candidate genes coding for odorant binding proteins and chemosensory proteins identified from dissected antennae and mouthparts of the southern green stink bug *Nezara viridula*. *Comp. Biochem. Physiol. Part D*. 31: 100601.
21. Qi Q, Pin LV, Chen XM, Chen H, **Chen MS**, Yang P (2019) Sexual dimorphism in wax secretion offers ecological adaptability during *Ericerus pela* (Hemiptera: Coccidae) evolution. *Environ Entomol* 48 (2): 410-418.
22. Lu Q, Chen H, Wang C, Yang ZX, Lu P, **Chen MS**, Chen XM (2019) Macro- and Microscopic analysis of anatomical structures of Chinese gallnuts and their functional adaptation. *Sci. Rep.* 9: 5193.
23. Bassi FM, Brahmi H, Sabraoui A, Amri A, Nsarellah N, Nachit MM, Al-Abdallat A, **Chen MS**, Lazraq A, El Bouhssini M (2019) Genetic identification

- of loci for Hessian fly resistance in durum wheat. *Mol. Breed.* 39: 4.  
<https://doi.org/10.1007/s11032-019-0927-1>
24. Wu H., Chen X., Chen H., Lu Q., Ren W., Yang Z., Liu J., Shao X., Wang C., King-Jones K., **Chen M.S.** (2018) Variation and diversification of the microbiome of *Schlechtendalia chinensis* on two alternate host plants. *PLoS ONE* 13 (11): e0200049.
  25. Rudd J.C., Devkota R.N., Ibrahim A.M., Baker J.A., Baker S., Lazar M.D., Sutton R., Simoneaux B., Opena G., Rooney L.W., Awika J.M., Liu S., Xue Q., Bean B., Duncan R.W., Seabourn B.W., Bowden R.L., Jin Y., **Chen M.S.**, Graybosch R.A. (2018) 'TAM 114' Wheat, Excellent Bread-Making Quality Hard Red Winter Wheat Cultivar Adapted to the Southern High Plains. *Journal of Plant Registration.* 12(3): 367-372.
  26. Haley S.D., Johnson J.J., Peairs F.B., Stromberger J.A., Hudson-Arns E.E., Seifert S.A., Anderson V.A., Bai G., Chen X., Bowden R.L., Jin Y., Kolmer J.A., **Chen M.S.**, Seabourn B.W. (2018) Registration of 'Avery' hard red winter wheat. *Journal of Plant Registration.* 12(3): 362-366.
  27. Al-jbory Z.A., El-Bouhssini M., **Chen M.S.** (2018) Conserved and unique putative effectors expressed in the salivary glands of three related gall midge species. *Journal of Insect Science.* 18 (5): 15 (1-9).
  28. Wang A., Ge J.Q., Chen H., Cheng X., Yang Y., Li J., Whitworth R.J., **Chen M.S.** (2018) An insect nucleoside diphosphate kinase (NDK) functions as an effector protein in wheat-Hessian fly interactions. *Insect Biochemistry and Molecular Biology.* 100: 30-38.
  29. Tang G., Liu X., Chen G.H., Whitworth R.J., **Chen M.S.** (2018) Increasing temperature reduces wheat resistance mediated by major resistance genes to *Mayetiola destructor*. *Journal of Economic Entomology.* 111(3): 1433-1438.
  30. Haley S.D., Johnson J.J., Peairs F.B., Stromberger J.A., Hudson-Arns E.E., Seifert S.A., Anderson T., Rosenow A., Bai G., **Chen M.S.**, Bowden R.L., Jin Y., Kolmer J.A., Seabourn B.W. (2018) Registration of 'Langin' hard red winter wheat. *Journal of Plant Registration.* 12(2): 232-236.
  31. Cheng G., **Chen M.S.**, Zhu L. (2018) 12-Oxo-Phytodienoic acid enhances wheat resistance to Hessian fly (Diptera: Cecidomyiidae) under heat stress. *Journal of Economic Entomology.* 111(2): 917-922.
  32. Al-jbory Z.A., Anderson K.M., Harris M.O., Mittapalli O., Whitworth R.J. **Chen M.S.** (2018) Transcriptomic analysis of the secreted proteins from the salivary glands of wheat midge larvae. *Journal of Insect Science.* 18(1): 17 (1-5).
  33. Ando K., Rynearson S., Muleta K., Gedamu J., Girma B., Bosque-Pérez N.A., **Chen M.S.**, Pumphrey M.O. (2018) Genome-wide associations for multiple pest resistances in a northwestern United States elite spring wheat pane. *PLoS ONE* 13(2): e0191305.
  34. Zhang G., Martin T.J., Fritz A.K., Miller R., Bai G., **Chen M.S.**, Bowden R.L. (2018) Registration of 'Tatanka' hard red winter wheat. *Journal of Plant Registration.* 12(1): 74-78.
  35. Al-jbory Z.A., **Chen M.S.** (2018) Indirect Plant Defense against Insect Herbivores: A Review. *Insect Science.* 25(1): 2-23.

36. Haley S.D., Johnson J.J., Peairs F.B., Stromberger J.A., Hudson-Arns E.E., Seifert S.A., Anderson V.A., Bai G., Chen X., Bowden R.L., Jin Y., Kolmer J.A., **Chen M.S.**, Seabourn B.W. (2017) Registration of 'sunshine' hard white winter wheat. *Journal of Plant Registration*. 11: 289-294.
37. Tan C.-T., Yu H., Yang Y., Xu X., **Chen M.S.**, Rudd J.C., Xue Q., Ibrahim A., Garza L., Wang S., Sorrells M.E., Liu S. (2017) Development and validation of KASP markers for the greenbug resistance gene *Gb7* and Hessian fly resistance gene *H32* in wheat. *Theoretical and Applied Genetics*. 130 (9): 1867-1884.
38. Du C., Whitworth R.J, **Chen M.S.** (2017) MicroRNA variants, expression, and putative targets in the gall midge *Mayetiola Destructor*. *Journal of Molecular Biology and Techniques* 1(1): 103.
39. Zhang M., Liang Y., Song A., Yu B., Zeng X., **Chen M.S.**, Yin H., Zhang X, Sun B., Fan F. (2017) Loss of soil microbial diversity may increase insecticide uptake by crop. *Agriculture, Ecosystems and Environment* 240: 84-91.
40. **Chen M.S.**, Liu S., Wang H., Cheng X., El Bouhssini M., Whitworth R.J. (2016) Genes expressed differentially in Hessian fly larvae feeding in resistant and susceptible plants. *Int. J. Mol. Sci.* 17 (8): 1324.
41. Zhang G., Martin T.J., Fritz A.K., Miller R., **Chen M.S.**, Bowden R.L., Bai G. (2016) Registration of 'Joe' hard white winter wheat. *Journal of Plant Registration*. 10 (3): 283-286.
42. Baenziger P.S., Graybosch R.A., Regassa T., Klein R., Kruger G., Santra D., Xu L., Rose D.J., Wegulo S.N., Kolmer J., Hein G., **Chen M.S.**, Bai G., Bowden R.L., Poland J. (2016) Release of 'NE05548' (Husker Genetics Brand Panhandle) hard red winter wheat. *Journal of Plant Registration*. 10 (3): 276-282.
43. Schwarting HN, Withworth RJ, **Chen MS**, Cramer G, Maxwell T (2016) Impact of Hessian fly, *Mayetiola destructor*, on developmental aspects of hard red winter wheat in Kansas. *Southwestern Entomologist* 41: 321-330.
44. **Chen M.S.**, Liu S., Wang H., Cheng X., El Bouhssini M., Whitworth R.J. (2016) Massive shift in gene expression during transitions between developmental stages of the gall midge, *Mayetiola destructor*. *PLoS ONE* 11(5): e0155616.
45. Zhao C., Shukle R., Escalante L.N., **Chen M.S.**, Richards S., Stuart J.J. (2016) Avirulence gene mapping in the Hessian fly (*Mayetiola destructor*) reveals a protein phosphatase 2C effector gene family. *J. Insect Physiol.* 84: 22-31.
46. Schwarting H.N., Whitworth R.J., Cramer G., **Chen M.S.** (2015) Pheromone trapping to determine Hessian fly (Diptera: Cecidomyiidae) activity in Kansas. *Journal of the Kansas Entomological Society* 88 (4): 411-417.
47. Zhang G., Martin T.J., Fritz A.K., Miller R., **Chen M.S.**, Bowden R.L., Johnson J.J. (2015) Registration of 'Oakley CL' wheat. *Journal of Plant Registration*. 9:190-195.
48. Zhao, C. et al. (2015) A massive expansion of effector genes underlies gall-formation in the wheat pest *Mayetiola destructor*. *Current Biology* 25(5): 613-620.
49. Li G., Wang Y., **Chen M.S.**, Edae E., Poland J., Akhunov E., Chao S., Bai G. Carver B.F., Yan L. (2015) Precisely mapping a major gene conferring

- resistance to Hessian fly in bread wheat using genotyping-by-sequencing. *BMC Genomics* 16: 108.
50. Liu X., Zhang S., Whitworth R.J., Stuart J.J., **Chen M.S.** (2015) Unbalanced activation of glutathione metabolic pathways suggests potential involvement in plant defense against the gall midge *Mayetiola destructor*. *Nature Scientific Report* 5: 8092 (doi:10.1038/srep08092)
  51. Harris M.O., Firesen T.L., Xue S.S., **Chen M.S.**, Giron D., Stuart J.J. (2015) Pivoting from Arabidopsis to wheat to understand how agricultural plants integrate responses to biotic stress. *Journal of Experimental Botany* 66: 513-531.
  52. Johnson A.J., Shukle R.H., **Chen M.S.**, Srivastava S., Subramanyam S., Schemerhorn B.J., Weintraub P.G., Abdel Moniem H.E., Flanders K.L., Buntin G.D., Williams C.E. (2015) Differential expression of candidate salivary effector proteins in field collections of Hessian fly, *Mayetiola destructor*. *Insect Molecular Biology* 24:191-202.
  53. Currie Y., **Chen M.S.**, Nickolov R., Bai B., Zhu L. (2014) Impact of transient heat stress on polar lipid metabolism in seedlings of wheat near-isogenic lines contrasting in resistance to Hessian fly (Cecidomyiidae) infestation. *Journal of Economic Entomology* 107 (6): 2196-2203.
  54. Underwood J., Moch J., **Chen M.S.**, Zhu L. (2014) Exogenous salicylic acid enhances the resistance of wheat seedlings to Hessian fly (Diptera: Cecidomyiidae) infestation under heat stress. *Journal of Economic Entomology*. 107 (5): 2000-2004.
  55. Baenziger P.S., Graybosch R.A., Regassa T., Klein R.N., Kruger G.R., Santra D.K., Xu L., Rose D.J., Wegulo S.N., Jin Y., Kolmer J., Hein G.L., **Chen M.S.**, Bai G. Bowden R.L., and Poland J. (2014) Registration of 'NE06545' (Husker Genetics Brand Freeman) hard red winter wheat. *Journal of Plant Registration* 8: 279-284.
  56. Aggarwal, R., Subramanyam, S., Zhao, C., **Chen, M.S.**, Harris, M.O., Stuart, J.J. (2014) Avirulence effector discovery in a plant galling and plant parasitic arthropod, the Hessian fly (*Mayetiola destructor*) *PloS One*. 9(6): e100958.
  57. **Chen, M.S.**, Wheeler, S., Wang, H., Whitworth, R.J. (2014) Impact of temperatures to Hessian fly resistance of selected wheat cultivars in the Great Plains region. *Journal of Economic Entomology*. 107(3): 1266-1273.
  58. **Chen, M.S.**, Wheeler, S., Davis, H., Whitworth, R.J. Knutson, A., Giles, K.L., Royer, T.A., Skinner, M. (2014) Molecular markers for species identification of Hessian fly males caught on sticky pheromone traps. *Journal of Economic Entomology*. 107(3):1110-1117.
  59. Bansal, R., Hulbert, S.H., Reese, J.C., Whitworth, R.J., Stuart, J.J., **Chen, M.S.** (2014) Pyrosequencing reveals the predominance of Pseudomonadaceae in gut microbiome of a gall midge. *Pathogens* 3(2): 459-472.
  60. Haley, S.D., Johnson, J.J., Peairs, F.B., Stromberger, J.A., Hudson, E.E., Seifert, S.A., Kottke, R.A., Valdez, V.A., Nachtman, J.J., Rudolph, J.B., Bai, B., Chen, X., Bowden, R.L., Jin, Y., Kolmer, J.A., **Chen, M.S.** Seabourn, B.W. (2014) Registration of 'Cowboy' Wheat. *Journal of Plant Registration*. 8(2): 169-172.

61. Haley, S.D., Johnson, J.J., Peairs, F.B., Stromberger, J.A., Hudson-Arns, E.E., Seifert, S.A., Valdez, V.A., Kottke, R.A., Rudolph, J.B., Bai, G., Chen, X., Bowden, R.L., Jin, Y., Kolmer, J.A., **Chen, M.S.**, Seabourn, B.W., and Dowell, F.E. (2014) Registration of 'Antero' wheat. *Journal of Plant Registration* 8(2): 165-168.
62. Ananthakrishnan, R., Sinha, D.K., Murugan, M., Zhu, K.Y., **Chen, M.S.**, Zhu, Y.C., Smith, C.M. (2014) Comparative gut transcriptome analysis reveals differences between virulent and avirulent Russian wheat aphids *Diuraphis noxia*. *Arthropod-Plant Interactions* 8 (2): 79-88.
63. Garcés-Carrera, S., Knutson, A., Wang, H., Giles, K.L., Huang, F., Whitworth, R.J., Smith, C.M., **Chen, M.S.** (2014) Virulence and biotype analyses of Hessian fly (*Mayetiola destructor*) populations from Texas, Louisiana, and Oklahoma. *Journal of Economic Entomology*. 107: 417-423.
64. Currie Y., Moch J., Underwood J., Kharabsheh H., Quesenberry A., Miyagi R., Thomas C., Boney M., Woods S., **Chen M.S.**, and Zhu L. (2014) Transient heat-stress compromises the resistance of wheat seedlings to Hessian fly (Diptera: Cecidomyiidae) infestation. *Journal of Economic Entomology*. 107: 389-395.
65. Martin T.J., Zhang G., Fritz A.K., Miller R., **Chen M.S.** (2014) Registration of 'Clara CL' wheat. *Journal of Plant Registration*. 8: 38-42.
66. Hunger R.M., Edwards J.T., Bowden R.L., Yan L., Rayas-Duarte P., Bai G., Horn G.W., Kolmer J.A., Giles K.L., **Chen M.S.**, Jin Y., Osburn R.D., Bayles M.B., Seabourn B.W., Klatt A.R., Carver B.F. (2014) 'Billings' Wheat Combines Early Maturity, Disease Resistance, and Desirable Grain Quality for the Southern Great Plains of the USA. *Journal of Plant Registration*. 8: 22-31.
67. Cheng Y., Wang Q., Li Z., Gui J., Hu S., Zhao H., **Chen, M.S.** (2013) Cytological and comparative proteomic analyses on male sterility in *Brassica napus* L. induced by the chemical hybridization agent monosulfuron ester sodium. *PloS One* 8 (11): e80191.
68. Li C., Chen M.S., Chao S., Yu J., Bai G. (2013) Identification of a novel Hessian fly resistance gene, *H34*, in wheat using recombinant inbred lines and single nucleotide polymorphism markers. *Theoretical and Applied Genetics*. 126 (8): 2065-2071.
69. Khajuria C., Wang H., Liu X., Wheeler X., Reese J.C., El Bohssini M., Whitworth R.J., **Chen M.S.** (2013) Mobilization of lipids and fortification of cell wall and cuticle are important in host defense against Hessian fly. *BMC Genomics* 14: 423.
70. Liu X.M., Khajuria C., Li J., Trick H.N., Huang L., Gill B.S., Reeck G.R., Antony G., White F.F., **Chen M.S.** (2013) Wheat *Mds-1* encodes a heat-shock protein and governs susceptibility towards the Hessian fly gall midge. *Nature Communication*. 4: 2070.  
<http://www.nature.com/ncomms/2013/130624/ncomms3070/full/ncomms3070.html>
71. Chen H., Zhu Y.C., Whitworth R.J., Reese J.C., **Chen M.S.** (2013) Serine and cysteine protease-like genes in the genome of a gall midge and their interactions

- with host plant genotypes. *Insect Biochemistry and Molecular Biology*. 43: 701-711.
72. Tan T.T., Carver B.F., **Chen M.S.**, Gu Y.Q., Yan L. (2013) Genetic association of *OPR* genes with resistance to Hessian fly in hexaploid wheat. *Journal of Experimental Botany. BMC Genomics*. 14:369.
  73. Martin T.J., Zhang G., Fritz A.K., Miller R., **Chen, M.S.** (2013) Registration of ‘Tiger’ wheat. *Journal of Plant Registration* 7(2): 201-204.
  74. Khajuria C., Williams C., J.C., El Bohssini M., Whitworth R.J., Richards S., Stuart J.J., **Chen M.S.** (2013) Deep Sequencing and Genome-wide Analysis Reveals the Expansion of MicroRNA Genes in the Gall Midge *Mayetiola Destructor*. *BMC Genomics* 14: 187.
  75. You M., Yue Z., He W., Yang X., Yang G., Xie M., Zhan D., Baxter S.W., Vasseur L., Gurr G.M., Douglas, C.J., Bai, J., Wang, P., Cui, K., Huang, S., Li, X., Zhou, Q., Wu, Z., Chen, Q., Liu C., Wang B., Li X., Xu X., Lu C., Hu M., Davey J.W., Smith S.M., **Chen M.S.**, Xia X., Tang W., Ke F., Zheng D., Hu Y., Song F., You Y., Ma X., Peng L., Zheng Y., Liang Y., Chen Y., Yu L., Zhang Y. Liu, Y., Li G., Fang L., Li J., Zhou X., Lou Y., Gou C., Wang J., Wang J., Yang H., Wang J. (2013) A heterozygous moth genome provides insights into herbivory and detoxification. *Nature Genetics* 45: 220-225.
  76. Wang H., Zhang H., Dai Z., **Chen M.S.**, Yuan Z. (2013) TSG: A new algorithm for binary and multi-class cancer classification and informative genes selection. *BMC Medical Genomics*, 6 (Suppl 1): S3 (<http://www.biomedcentral.com/1755-8794/6/S1/S3>).
  77. El Bouhssini M., Ogbonnaya F.C., **Chen M.S.**, Lhaloui S., Rihavvi F., Dabbous A. (2013) Sources of resistance in primary synthetic hexaploid wheat (*triticum aestivum* L.) to insect pests - Hessian fly, Russian wheat aphid and Sunn pest in the fertile Crescent. *Genetic Resources and Crop Evolution* 10.1007/s10722-012-9861-3.
  78. Zhang H., Wang H., Dai Z., **Chen M.S.**, Yuan Z. (2012) Improving accuracy for cancer classification with a new algorithm for genes selection. *BMC Bioinformatics* 13(1): 298.
  79. Ma M., Yan Y., Huang L., **Chen M.S.**, Zhao H. (2012) Virus-induced gene-silencing in wheat spikes and grains and its application in functional analysis of HMW-GS-encoding genes. *BMC Plant Biology* 12:141 (doi:10.1186/1471-2229-12-141).
  80. Haley S.D., Johnson J.J., Pears F.B., Stromberger J.A., Hudson E.E., Seifert S.A., Kottke R.A., Valdez V.A., Rudolph J.B., Martin T.J., Bai G., Chen X., Bowden R.L., Jin Y., Kolmer J.A., **Chen M.S.**, Seabourn BW (2012) Registration of ‘Denali’ wheat. *Journal of Plant Registration* 6: 311-314.
  81. Haley S.D., Johnson J.J., Westra P.H., Pears F.B., Stromberger J.A., Hudson E.E., Seifert S.A., Kottke R.A., Valdez V.A., Rudolph J.B., Bai G., Chen X., Bowden R.L., Jin Y., Kolmer J.A., **Chen M.S.**, Seabourn B.W. (2012) Registration of ‘Brawl CL plus’ wheat. *Journal of Plant Registration* 6: 306–310.
  82. Haley S.D., Johnson J.J., Pears F.B., Stromberger J.A., Hudson E.E., Seifert S.A., Kottke R.A., Valdez V.A., Rudolph J.B., Bai G., Chen X., Bowden R.L.,



- Jin Y., Kolmer J.A., **Chen M.S.**, Seabourn B.W. (2012) Registration of 'Byrd' wheat. *Journal of Plant Registration* 6: 302-305.
83. Zhu L., Liu X., Wang H., Khajuria C., Reese J.C., Whitworth R.J., Welti R., and **Chen M.S.** (2012) Rapid mobilization of membrane lipids in wheat leaf-sheaths during incompatible interactions with Hessian fly. *Molecular Plant-Microbe Interactions* 25 (7): 920-930.
84. Edwards J.T., Hunger R.M., Smith E.L., Horn G.W., **Chen M.S.**, Yan L., Bai G., Bowden R.L., Rayas-Duarte P., Osburn R.A., Kolmer J.A., Jin Y., Porter D.R., Giles K.L., Seabourn B.W., Bayles M. B., Carver B.F. (2012) 'Duster' Wheat: A durable, dual-purpose cultivar adapted to the southern Great Plains of the USA. *Journal of Plant Registration* 6(1): 37-48.
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### Review Articles and Book Chapters

154. **Chen, M.S.**, Wu J.X., and Zhang G.H. (2010) Inducible direct defense of plants against insect herbivores. *In: Liu, T. X. and Kang, L. Eds: Recent Advances in Entomological Research: From Molecular Biology to Pest Management*. The High Education Press, Beijing. Chapter 3, pp30-43.
155. Zhu, Y.C., **Chen, M.S.**, and Abel, C.A. (2010) Potential use of proteinase inhibitors, avidin, and other bio-reagents for synergizing Bt performance and delaying resistance development to Bt. *In: Liu, T. X. and Kang, L. Eds: Recent*

- Advances in Entomological Research: From Molecular Biology to Pest Management. The High Education Press, Beijing. Chapter 19, pp200-208.
156. **Chen, M.S.** (2008) Inducible direct plant defense against insect herbivores – A review. *Insect Science*. 15:101-114.
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158. **Chen, M.S.** (2006) Book Review: Entomological Research: Progress and Prospects [Tong-Xian Liu and Le Kang (eds.)] *Insect Science*. 13:235.

### Relevant Media Reports

1. New Defense Against Hessian Fly May Lie in Insect's Saliva. USDA-ARS News and Events, October 17, 2003 .
2. FAO Plant Breeding News: New Defense Against Hessian Fly May Lie in Insect's Saliva. Food and Agriculture Organization (FAO) of the United Nations, FAO Plant Breeding News, October 24, 2003.
3. New Defense against the Hessian fly.  
<http://www.nhagintheclass.org/text/Januarynew2004.pdf>
4. How Hessian fly harass wheat. <http://www.allbusiness.com/agriculture-forestry-fishing-hunting/917989-1.html>
5. New Hessian fly research.  
<http://www.wheat.state.ok.us/Web%20Site/News%20and%20Info/news%20and%20info/Wheat%20Connection/April%2007.pdf>
6. Once Again . . . Waiting in the Wings . . . HESSIAN FLIES! (by Don Comis and Erin Peabody) *Agricultural Research* magazine, January, 2007. Page 4-7.
7. Scientists Probe "Fly Spit" for Clues to Serious Wheat Pest (by Erin Peabody). USDA-ARS News and Events, January 7, 2007.  
<http://www.ars.usda.gov/is/pr/2007/070108.htm>.

**Honor:** 1988 – 1990, Rockefeller Foundation Graduate Fellowship  
 2001, Radiation Oncology Meritorious Service Award  
 2003, USDA outstanding performance award  
 2004, USDA outstanding performance award  
 2005, USDA superior performance award  
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 2007, USDA outstanding performance award  
 2008, USDA outstanding performance award  
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 2010, USDA outstanding performance award  
 2011, USDA superior performance award  
 2012, USDA outstanding performance award