

## Curriculum Vitae

**Dr. Zhi-Yuan Chen**

**Professor**

Department of Plant Pathology and Crop Physiology  
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### A. EDUCATION

Ph.D., 1996. Plant Biology, Louisiana State University, Baton Rouge, Louisiana.

M. S., 1991. Plant Physiology, Biochemistry and Molecular Biology, Peking University (Beijing University), Beijing, China.

B. S., 1988. Plant Physiology and Biochemistry, Peking University.

### B. WORK EXPERIENCE

07/2015-present: Full Professor, Department of Plant Pathology and Crop Physiology, Louisiana State University Agricultural Center, Baton Rouge, investigating host-pathogen interactions in maize-*Aspergillus flavus*, soybean-*Phakopsora pachyrhizi* and soybean-*Cercospora cf. flagellaris* to understand host resistance mechanisms, and to develop new approaches such as Host Induced Gene Silencing (HIGS) and CRISPR-CAS to reduce fungal infection in soybean and mycotoxin contamination in corn.

07/2009-06/2015: Associate Professor (tenured), Department of Plant Pathology and Crop Physiology, Louisiana State University Agricultural Center, Baton Rouge, investigating host-pathogen interactions in maize-*Aspergillus flavus*, soybean-*Phakopsora pachyrhizi* and soybean- *Cercospora cf. flagellaris* to understand host resistance mechanisms.

11/2005-06/2009: Assistant Professor (tenure track), Department of Plant Pathology and Crop Physiology, Louisiana State University Agricultural Center, Baton Rouge, investigating host-pathogen interactions in maize-*Aspergillus flavus* and soybean-*Phakopsora pachyrhizi* to understand host resistance mechanisms.

09/2002-10/2005: Assistant Professor, Research, Department of Plant Pathology and Crop Physiology, Louisiana State University Agricultural Center (stationed at Southern Regional Research Center, USDA-ARS, New Orleans), investigating possible roles of aflatoxin resistance-associated maize kernel proteins identified through proteomic comparisons.

11/1996-08/2002: Postdoctoral Fellow at Southern Regional Research Center, USDA-ARS, New Orleans, identifying protein factors associated with maize aflatoxin resistance.

### C. RESEARCH AND CREATIVE ACTIVITY (100% appointment)

## 1. Listing of research publications [Published Items Only]

### Refereed Journal Articles

- Raruang, Y., Omolehin, O., Hu, D., Wei, Q., Han, Z. Q., Rajasekaran, K., Cary, J. W., Wang, K. and **Chen, Z. -Y.** 2020. Host induced gene silencing targeting *Aspergillus flavus aflM* reduced aflatoxin contamination in transgenic maize under field conditions. *Frontiers in Microbiology* 11:754, doi: 10.3389/fmicb.2020.00754 (Impact Factor 4.259).
- Hu, D., **Chen, Z. -Y.**, Zhang, C., and Ganiger, M. 2020. Reduction of *Phakopsora pachyrhizi* infection on soybean through host and spray induced gene silencing. *Mol. Plant Pathology* 21: 794-807 (Impact Factor 4.379).
- Santos Rezende, J., Zivanovic, M., Costa de Novaes, M., and **Chen, Z.-Y.** 2020. The AVR4 effector is involved in cercosporin biosynthesis and likely affects the virulence of *Cercospora cf. flagellaris* on soybean. *Mol. Plant Pathology* 21:53-65 (published on Oct 16 2019, Impact Factor 4.379).
- Xie, H., Wang, X., Zhang, L., Wang, T., Zhang, W., Jiang, J., Chang, P.-K., **Chen, Z.-Y.**, Bhatnagar, D., Zhang, Q., Li, P., 2018. Monitoring metabolite production of aflatoxin biosynthesis by orbitrap fusion mass spectrometry and a D-optimal mixture design method. *Analytical Chemistry* 90, 14331-14338 (Impact Factor 6.042).
- Gilbert, M. K., Majumdar, R., Rajasekaran, K., **Chen, Z. -Y.**, Wei, Q., Sickler, C. M., Lebar, M. D., Cary, J. W., Frame, B. R., and Wang, K. 2018. RNA interference-based silencing of the alpha-amylase (*amy1*) gene in *Aspergillus flavus* decreases fungal growth and aflatoxin production in maize kernels. *Planta* 247: 1465-1473 (Impact Factor 3.249).
- Fountain, J., Koh, J., Yang, L., Pandey, M., Nayak, S., Bajaj, P., Zhuang, W. -J., **Chen, Z. -Y.**, Kemerait, R., Lee, R., Chen, S., Varshney, R., and Guo, B. 2018. Proteome analysis of *Aspergillus flavus* isolate-specific responses to oxidative stress in relationship to aflatoxin production capability. *Nature Scientific Reports* 8:3430 (DOI:10.1038/s41598-018-21653-x) (Impact factor 4.525).
- Sharma, K., Pothana, A., Prasad, K., Shah, D., Kaur, J., Bhatnagar, D., **Chen, Z.-Y.**, Raruang, Y., Cary, J., Rajasekaran, K., Sudini, H., and Bhatnagar-Mathur, P. 2017. Peanuts that keep aflatoxin at bay: A threshold that matters. *Plant Biotechnology Journal*. <https://doi.org/10.1111/pbi.12846> (Impact Factor 6.305).
- Yang, X., Zhang, Q., **Chen, Z. -Y.**, Liu, H., and Li, P. 2017. Investigation of *Pseudomonas fluorescens* strain 3JW1 on preventing and reducing aflatoxin contaminations in peanuts. *Plos One* 12(6): e0178810. <https://doi.org/10.1371/journal.pone.0178810> (Impact Factor 2.776).
- Li, P., Zhang, W., Zhang, Z., Zhang, Q., and **Chen, Z. -Y.** 2017. Fundamentals of hapten-protein conjugate synthesis to obtain high-quality antibodies for analysis of food and environmental contaminants. *Current Organic Chemistry* 21: 1-6 (Impact Factor 2.175)
- Brown, R. L., Williams, W. P., Windham, G. L., Menkir, A. and **Chen, Z. -Y.** 2016. Evaluation of African-bred maize germplasm lines for resistance to aflatoxin accumulation. *Agronomy* 6:24 (Impact Factor 1.805).

- Chen, Z. -Y.**, Warburton, M. L., Hawkins, L., Wei, Q., Raruang, Y., Brown, R. L., Zhang, L., and Bhatnagar, D. 2016. Production of the 14 kDa trypsin inhibitor protein is important for maize resistance against *Aspergillus flavus* infection/aflatoxin accumulation. *World Mycotoxin Journal* 9:215-228 (Impact Factor 2.409).
- Chen, Z. -Y.**, Rajasekaran, K., Brown, R. L., Saylor, R. J., and Bhatnagar, D. 2015. Discovery and confirmation of genes/proteins associated with maize aflatoxin resistance. *World Mycotoxin Journal* 8:211-224 (DOI 10.3920/WMJ2014.1732) (Impact Factor 2.409).
- Fountain, J. C., Khera, P., Yang, L., Scully, B. T., Lee, R. D., **Chen, Z.-Y.**, Kemerait, R. C., Varshney, R. K., and Guo, B. 2015a. Resistance to *Aspergillus flavus* in maize and peanut: Biochemistry, breeding, environmental stress and future perspectives. *The Crop Journal*, 3: 229-237 (Impact Factor 1.635).
- Fountain, J. C., Scully, B. T., **Chen, Z. -Y.**, Gold, S. E., Glenn, A. E., Abbas, H. K., Lee, R. D., Kemerait, R. C., and Guo, B. 2015b. Effects of hydrogen peroxide on different toxigenic and atoxigenic isolates of *Aspergillus flavus*. *Toxins* 7: 2985-2999 (Impact Factor 3.273).
- Fountain, J., Raruang, Y., Luo, M., Brown, R. L., Guo, B., and **Chen, Z. -Y.** 2015c. Potential roles of WRKY transcription factors in regulating host defense responses during *Aspergillus flavus* infection of immature maize kernels. *Physiological and Molecular Plant Pathology* 89: 31-40 (Impact Factor 1.678).
- Xie, Y., Raruang, Y., **Chen, Z. -Y.**, Brown, R. L., and Cleveland, T. E. 2014. ZmGns1, a novel Class I beta-1,3-glucanase, is induced by biotic infection and possesses strong antimicrobial activity. *Journal of Integrative Plant Biology* 57: 271-283 (Impact Factor 3.824).
- Chanda, A. K., Ward, N. A., Robertson, C. L., **Chen, Z.-Y.**, and Schneider, R. W. 2014. Development of a qPCR detection protocol for *Cercospora kikuchii* in soybean leaves and its use for documenting latent infection as affected by fungicide applications. *Phytopathology* 104:1118-1124 (Impact Factor 3.036).
- Fountain, J. C., Scully, B. T., Ni, X., Kemerait, R. C., Lee, R. D., **Chen, Z. -Y.**, and Guo, B. Z. 2014. Environmental influences on maize-*Aspergillus flavus* interactions and aflatoxin production. *Frontiers in Microbiology* 5:1-7 (Impact Factor 4.019).
- Ganiger, M., Walker, D. R., and **Chen, Z. -Y.** 2013. Proteomics based study of soybean and *Phakopsora pachyrhizi* interaction. Online. *Plant Health Progress* doi:10.1094/PHP-2013-1125-01-RS.
- Brown, R. L., Menkir, A., **Chen, Z. -Y.**, Bhatnagar, D., Yu J., Yao, H., and Cleveland, T. E. 2013. Breeding aflatoxin-resistant maize lines using recent advances in technologies – a review. *Food Additives and Contaminants: Part A*. 30: 1382-1391.
- Chen, Z. -Y.**, Brown, R. L., Menkir, A., and Cleveland, T. E. 2012. Identification of resistance-associated proteins in closely-related maize lines varying in aflatoxin accumulation. *Molecular Breeding* 30: 53-68.
- Luo, M., Brown, R. L., **Chen, Z. -Y.**, Menkir, A., Yu, J., and Bhatnagar, D. 2011. Transcriptional profiles uncover *Aspergillus flavus*-induced resistance in maize kernels. *Toxins* 3:766-785.
- Cary, J. W., Rajasekaran, K., Brown, R. L., Luo, M., **Chen, Z. -Y.**, and Bhatnagar, D. 2011. Developing resistance to aflatoxin in maize and cottonseed. *Toxins* 3:678-696.

- Chen, Z. -Y.**, Brown, R. L., Damann, K. E., and Cleveland, T. E. 2010. PR10 expression in maize and its effect on host resistance against *Aspergillus flavus* infection and aflatoxin production. *Molecular Plant Pathology* 11:69-81.
- Xie, Y., **Chen, Z. -Y.**, Brown, R. L., and Bhatnagar, D. 2010 Expression and functional characterization of two pathogenesis-related protein 10 genes from *Zea mays*. *J. Plant Physiology* 167:121-130.
- Fountain, J. C., **Chen, Z. -Y.**, Scully, B. T., Kemerait, R. C., Lee, R. D., and Guo, B. Z. 2010. Comparison of PR-related gene expression in different maize genotypes. *African Journal of Plant Science* 4:433-440.
- Brown, R. L., **Chen, Z. -Y.**, Warburton, M., Luo, M., Menkir, A., Fakhoury, A., and Bhatnagar, D. 2010. Discovery and characterization of proteins associated with aflatoxin-resistance: evaluating their potential as breeding markers. *Toxins* 2:919-933.
- Chen, Z. -Y.**, Brown, R. L., Cary, J. W., Damann, K. E., and Cleveland, T. E. 2009a. Characterization of an *Aspergillus flavus* alkaline protease and its role in the infection of maize kernels. *Toxin Reviews* 28: 187-197.
- Luo, M., Brown, R. L., **Chen, Z. -Y.**, and Cleveland, T. E. 2009. Host genes involved in the interaction between *Aspergillus flavus* and maize. *J. Toxicology, Toxin Reviews* 28: 118-128.
- Chen, Z. -Y.**, Brown, R. L., Guo, B. Z., Menkir, A., and Cleveland, T. E. 2009. Identifying aflatoxin resistance-related proteins/genes through proteomics and RNAi gene silencing. *Peanut Science* 36: 35-41.
- Baker, R. L., Brown, R. L., **Chen, Z.-Y.**, Cleveland, T. E., and Fakhoury, A. M. 2009. A maize lectin-like protein with antifungal activity against *Aspergillus flavus*. *J. Food Protection* 72: 120-127.
- Baker, R. L., Brown, R. L., **Chen, Z.-Y.**, Cleveland, T. E., and Fakhoury, A. M. 2009. A maize trypsin inhibitor (ZmTIp) with limited activity against *Aspergillus flavus*. *J. Food Protection* 72: 185-188.
- Park, S., **Chen, Z.-Y.**, Chanda, A. K., Schneider, R. W., and Hollier, C. 2008. Viability of *Phakopsora pachyrhizi* urediniospores under simulated southern Louisiana winter conditions. *Plant Disease* 92:1456-1462
- Guo, B., **Chen, Z.-Y.**, Lee, R. D., and Scully, B. T. 2008. Drought stress and preharvest aflatoxin contamination in agricultural commodity: genetics, genomics and proteomics. *J. Integrative Plant Biology* 50:1281-1291
- Osiri, J. K., Shadpour, H., Park, S., Snowden, B. C., **Chen, Z. -Y.**, and Soper, S. A. 2008. Generating high peak capacity 2-D maps of complex proteomes using PMMA microchip electrophoresis. *Electrophoresis* 29:4984-4992.
- Cleveland, T. E. IV, Hussey, D. S., **Chen, Z. -Y.**, Jacobson, D. L., Brown, R. L., Carter-Wientjes, C., Cleveland, T. E., and Arif, M. 2008. The use of neutron tomography for the structural analysis of corn kernels. *J. Cereal Science* 48:517-525.
- Rajasekarana, K., Cary, J. W., **Chen, Z. -Y.**, Brown, R. L., and Cleveland, T. E. 2008. Antifungal traits of a 14 kD maize kernel trypsin inhibitor protein in transgenic cotton. *J. Crop Improvement* 22:1-16.

- Chen, Z. -Y.**, Brown, R. L., Damann, K. E., and Cleveland, T. E. 2007. Identification of maize kernel endosperm proteins associated with resistance to aflatoxin contamination by *Aspergillus flavus*. *Phytopathology* 97:1094-1103.
- Brown, R. L., **Chen, Z. -Y.**, Menkir, A., and Cleveland, T. E. 2006. Proteomics to identify resistance factors in corn—a review. *Mycotoxin Research* 22:22-26.
- Chen, Z. -Y.**, Brown, R. L., Rajasekaran, K., Damann, K. E., and Cleveland, T. E. 2006. Identification of a maize kernel pathogenesis-related protein and evidence for its involvement in resistance to *Aspergillus flavus* infection and aflatoxin production. *Phytopathology* 96:87-95.
- Menkir, A., Brown, R. L., Bandyopadhyay, R., **Chen, Z. -Y.**, and Cleveland, T. E. 2006. A U.S.A.-Africa collaborative strategy for identifying, characterizing, and developing maize germplasm with resistance to aflatoxin contamination. *Mycopathologia* 162:225-232.
- Brown, R. L., Bhatnagar, D., Cleveland, T. E., and **Chen, Z.-Y.** 2004. Molecular biology for control of mycotoxigenic fungi. *Mycology* 21:69-77.
- Chen, Z. -Y.**, Brown, R. L., and Cleveland, T. E. 2004a. Evidence of an association between stress tolerance and host resistance in corn against *Aspergillus flavus* infection and aflatoxin contamination. *African J. Biotechnology* 3:693-699.
- Chen, Z. -Y.**, Brown, R. L., Damann, K. E., and Cleveland, T. E. 2004b. Identification of a maize kernel stress-related protein and its effect on aflatoxin accumulation. *Phytopathology* 94:938-945.
- Cleveland, T. E., Yu, J., Bhatnagar, D., **Chen, Z. -Y.**, Brown, R. L., Chang, P. K., and Cary, J. W. 2004. Progress in elucidating the molecular basis of the host *plant-Aspergillus flavus* interaction, a basis for devising strategies to reduce aflatoxin contamination in crops. *J. Toxicology, Toxin Reviews* 23:345-380.
- Brown, R. L., **Chen, Z. -Y.**, Menkir, A., and Cleveland, T. E. 2003. Using biotechnology to enhance host resistance to aflatoxin contamination of corn. *African J. Biotechnology* 2:557-562.
- Banks, W. A., Niehoff, M. L., Brown, R. L., **Chen, Z. -Y.**, and Cleveland, T. E. 2002. Transport across the blood-brain barrier of an antifungal trypsin inhibitor isolated from corn. *Antimicrobial Agents and Chemotherapy* 46:2633-2635.
- Chen, Z. -Y.**, Brown, R. L., Damann, K. E., and Cleveland, T. E. 2002. Identification of unique or elevated levels of kernel proteins in aflatoxin-resistant maize genotypes through proteome analysis. *Phytopathology* 92:1084-1094.
- Brown, R. L., **Chen, Z. -Y.**, Cleveland, T. E., Cotty, P. J., and Cary, J. W. 2001. Variation in *in vitro*  $\alpha$ -amylase and protease activity is related to the virulence of *Aspergillus flavus* isolates. *J. Food Protection* 64:401-404.
- Brown, R. L., **Chen, Z. -Y.**, Menkir, A., Cleveland, T. E., Cardwell, K., Kling, J. and White, D. G. 2001. Resistance to aflatoxin accumulation in kernels of maize inbreds selected for ear rot resistance in West and Central Africa. *J. Food Protection* 64:396-400.
- Chen, Z. -Y.**, Brown, R. L., Cleveland, T. E., Damann, K. E., and Russin, J. S. 2001. Comparison of constitutive and inducible maize kernel proteins of genotypes resistant or susceptible to aflatoxin production. *J. Food Protection* 64:1785-1792.

- Chen, Z. -Y.**, Brown, R. L., Lax, A. R., Cleveland, T. E., and Russin, J. S. 1999a. Inhibition of plant pathogenic fungi by a corn trypsin inhibitor over-expressed in *Escherichia coli*. *Applied Environmental Microbiology* 65:1320-1324.
- Chen, Z. -Y.**, Brown, R. L., Russin, J. S., Lax, A. R., and Cleveland, T. E. 1999b. A corn trypsin inhibitor with antifungal activity inhibits *Aspergillus flavus*  $\alpha$ -amylase. *Phytopathology* 89:902-907.
- Brown, R. L., **Chen, Z. -Y.**, Cleveland, T. E., and Russin, J. S. 1999. Advances in the development of host resistance to aflatoxin contamination by *Aspergillus flavus*. *Phytopathology* (review) 89:113-117.
- Chen, Z. -Y.**, Brown, R. L., Lax, A. R., Guo, B. Z., Cleveland, T. E., and Russin, J. S. 1998. Resistance to *Aspergillus flavus* in corn kernels is associated with a 14 kDa protein. *Phytopathology* 88: 276-281.
- Karlsson, J., Clarke, A. K., **Chen, Z. -Y.**, Huggins, S. Y., Park, Y.-Il, Husic, H. D., Moroney, J. V., and Samuelsson, G. 1998. A novel  $\alpha$ -type carbonic anhydrase associated with the thylakoid membrane in *Chlamydomonas reinhardtii* is required for growth at ambient CO<sub>2</sub>. *EMBO J.* 17:1208-1216.
- Moroney, J. V., and **Chen, Z. -Y.** 1998. The role of the chloroplast in inorganic carbon uptake by eukaryotic algae. *Canadian Journal of Botany* (review) 76:1025-1034.
- Chen, Z. -Y.**, Lavigne, L. L., Mason, C. B. and Moroney, J. V. 1997. Cloning and overexpression of two cDNAs encoding the low-CO<sub>2</sub>-inducible chloroplast envelope protein LIP-36 from *Chlamydomonas reinhardtii*. *Plant Physiology* 114: 256-273.
- Guo, B. Z., **Chen, Z. -Y.**, Brown, R. L., Lax, A. R., Cleveland, T. E., Russin, J. S., Mehta, A. D., Selitrennikoff, C. P., and Widstrom, N. W. 1997. Germination induces accumulation of specific proteins and antifungal activities in corn kernels. *Phytopathology* 87:1174-1178.
- Burow, M. D., **Chen, Z. -Y.**, Mouton, T. M., and Moroney, J. V. 1996. Isolation of cDNA clones of genes induced upon transfer of *Chlamydomonas reinhardtii* cells to low CO<sub>2</sub>. *Plant Molecular Biology* 31:443-448.
- Chen, Z. -Y.**, Burow, M. D., Mason, C. B., and Moroney, J. V. 1996. A low CO<sub>2</sub> inducible gene encoding an alanine:alpha-ketoglutarate aminotransferase in *Chlamydomonas reinhardtii*. *Plant Physiology* 112:677-684.
- Chen, Z. -Y.**, and Moroney, J. V. 1995. Identification of a *Chlamydomonas reinhardtii* chloroplast gene with significant homology to bacterial genes involved in cytochrome *c* biosynthesis. *Plant Physiology* 108:843-844.

### **Refereed Conference Proceedings**

- Luo, M., Brown, R.L., Chen, Z.-Y., Menkir, A., and Bhatnagar, D. (2010). Identification of gene marker sets for screening maize lines for resistance to aflatoxin contamination. *Proceedings of the 3rd International Conference of Plant Molecular Breeding*, pp. 74, Beijing China, Sept. 5-9, 2010.
- Park, S., and Chen, Z. -Y. 2009. Investigating soybean-*Phakopsora pachyrhizi* interactions using proteomics. *The 2009 World Soybean Research Conference VIII*, August 14, 2009 (Beijing, China).

- Cleveland, T. E., Rajasekaran, K., Cary, J. W., **Chen, Z. -Y.**, Brown, R. L., Bhatnagar, D., and Radin, J. W. 2002. Balancing the possible risks and benefits of using biotechnology to enhance resistance in crops to *Aspergillus flavus* infection and aflatoxin contamination. *In* Pathogenic Microorganisms and Their Toxins: A Global Perspective of Their Risk (S. Yamamoto and W. P. Norred eds.) (Book Chapter). IXth International Symposium-U.S.-Japan Natural Resources Panel on Toxic Microorganisms (UNJR), pp. 268-301.
- Moroney, J. V., Burow, M. D., **Chen, Z. -Y.**, Borkhsenius, O. N., Mason, C. B., and Somanchi, A. 1998. Adaptation of *Chlamydomonas reinhardtii* to limiting CO<sub>2</sub> conditions. *In* Photosynthesis: Mechanisms and Effects. Vol V, Ed. by G. Garab, Kluwer Academic Publishers, Dordrecht, pp. 3443-3446.
- Chen, Z. -Y.**, Burow, M. D., and Moroney, J. V. 1995. Characterization of genes induced by low CO<sub>2</sub> in *Chlamydomonas reinhardtii*. *Photosynthesis: from Light to Biosphere*, (P. Mathis ed.), Kluwer Academic Publishers, Vol. V: 619-622.

### **Refereed Book Chapters**

- Brown, R. L., Bhatnagar, D. Cleveland, T. E., **Chen, Z.-Y.**, and Menkir, A. 2013. Development of maize host resistance to aflatoxigenic fungi. *In* Aflatoxins: Recent Advances and Future Prospects (Ed. M. Razzaghi-Abyaneh), InTech, Rijeka, Croatia, ISBN: 978-953-51-0904-4, pp. 3-22. Available from: <http://www.intechopen.com/books/aflatoxins-recent-advances-and-future-prospects/development-of-maize-host-resistance-to-aflatoxigenic-fungi>
- Brown, R. L., Menkir, A., **Chen, Z.-Y.**, Luo, M., and Bhatnagar, D. 2011. Identification of gene markers in aflatoxin-resistant maize germplasm for marker-assisted breeding. *In* Aflatoxins-Biochemistry and Molecular Biology (Ed. R. G. Guevara-Gonzalez), InTech, Rijeka, Croatia, pp. 91--106.
- Brown, R. L., Chen, Z. -Y., Cleveland, T. E., Menkir, A., and Fakhoury, A. 2009. Identification of maize breeding markers through investigations of proteins associated with aflatoxin-resistance. *In* Mycotoxin Prevention and Control in Agriculture (Eds. M. Appell, D. F. Kendra, and M. W. Trucksess), ACS Symposium Series; American Chemical Society: Washington, DC, pp 157-165. (DOI: 10.1021/bk-2009-1031.ch011)
- Brown, R. L., **Chen, Z.-Y.**, Menkir, A., Cleveland, T. E., and Bhatnagar, D. 2008. Strategies for the prevention of preharvest aflatoxin contamination of maize. *In* Recent Advancement in Agriculture (Eds. C. Stevens and V. A. Khan), Research Signpost, Kerala, India, pp. 131-150.
- Brown, R. L., **Chen, Z. -Y.**, Menkir, A., Cleveland, T. E., and Bhatnagar, D. 2008. Application of biotechnology towards enhancement of maize resistance to aflatoxin contamination by *Aspergillus flavus*. *In* Crop Improvement and Biotechnology (Eds. D. Thangadurai, L. Tripathi, H.K.N. Vasanthaiah, and D.J. Cantu), Bioscience Publications, India, pp. 57-67.
- Menkir, A., Brown, R. L., Bandyopadhyay, R., **Chen, Z. -Y.**, and Cleveland, T. E. 2008. Breeding maize for resistance to mycotoxins at IITA. *In* Mycotoxins: Detection Methods, Management, Public Health and Agricultural Trade (Ed. J. F. Leslie), CABI Publishing, pp. 277-289.

- Chen, Z. -Y.**, Rajasekaran, K., Brown, R. L., Bhatnagar D., and Cleveland, T. E. 2006. Removal of aflatoxin contamination from food and feed crops. *In* Plant Genetic Engineering Vol. 8: Metabolic Engineering and Molecular Farming II (Eds. P. K. Jaiwal and R. P. Singh). Studium Press, Houston, TX, pp. 73-110.
- Brown, R. L., **Chen, Z. -Y.**, Cleveland, T. E., and Bhatnagar, D. 2005. Molecular aspects of corn resistance mechanisms against aflatoxigenic fungi. *In* Genetic Resources and Biotechnology, Vol II (Eds. D. Thangadurai, T. Pullaiah and P. A. Balatti), Regency Publications, New Delhi, India, pp. 281-294.
- Cleveland, T. E., Yu, J., Bhatnagar, D. **Chen, Z. -Y.**, Brown, R. L., Chang, P.-K., and Cary, J. W. 2005. Progress in elucidating the molecular basis of the host plant-*Aspergillus flavus* interaction: A basis for devising strategies to reduce aflatoxin contamination in crops. *In* Aflatoxin and Food Safety (Ed. H. Abbas), CRC Press, Boca Raton, FL, pp. 167-193.
- Rajasekaran, K., Bhatnagar, D., Brown, R. L., **Chen, Z. -Y.**, Cary, J. W., and Cleveland, T. E. 2005. Enhancing Food Safety: prevention of preharvest aflatoxin contamination. *In* Perspectives of Agricultural Research and Development (Eds. C. Ramasamy, S. Ramanathan, and M. Dhakshinamoorthy), Tamil Nadu Agricultural University, Coimbatore, India, pp. 434-467.
- Brown, R. L., **Chen, Z. -Y.**, Bhatnagar, D., and Cleveland, T.E. 2004. Molecular biology for control of mycotoxigenic fungi. *In* Fungal Biotechnology in Agricultural, Food, and Environmental Application, (Eds. D. Arora, P. Bridge, and D. Bhatnagar). Marcel Dekker, Inc. New York, pp. 69-77.
- Brown, R. L., **Chen, Z. -Y.**, Gembeh, S. V., Cleveland, T. E., Bhatnagar, D., and Howard, K. 2004. Identification of natural resistance in corn against mycotoxin-producing fungi. *In* Research Advances in Food Science (Ed. R. M. Mohan), Global Research Network, Kerala, India, pp. 85-96.
- Chen, Z. -Y.**, Cleveland, T. E., Brown, R. L., Bhatnagar, D., Cary, J. W., and Rajasekaran, K. 2002. Corn as a source of antifungal genes for genetic engineering of crops for resistance to aflatoxin contamination. *In* Crop Biotechnology (Eds. K. Rajasekaran, J. W. Finley, and T. J. Jacks), ACS Symposium Series No. 829, American Chemical Society, Washington, DC, pp. 131-150.

## 2. Invited Presentations and Seminars (in past 5 years)

### International

- Chen, Z.-Y.** 2019. Invited speaker at the Harbin Normal University, Heilongjiang Province, P. R. China (Oct 18, 2019). The title of the presentation was “Transgenic approach to reduce aflatoxin contamination in maize”.
- Chen, Z.-Y.** 2019. Invited speaker at the Provincial Microbiological Society Annual Meeting (Oct 19, 2019). The title of the presentation was “Manage soybean fungal diseases through biotechnology”.



- Chen, Z.-Y.** 2019. Invited speaker at the Institute of Microbiology, Heilongjiang Academy of Science, P. R. China (Oct 21, 2019). The title of the presentation was “Transgenic approach to reduce aflatoxin contamination in maize”.
- Chen, Z.-Y.** 2018. Invited speaker at the Academy of State Administration of Grain of the P. R. China, Beijing, China (Oct 12-20, 2018). The title of the presentation was “Pre-harvest and post-harvest prevention of mycotoxin contamination in grains”.
- Chen, Z.-Y.** 2018. Invited speaker at the Institute of Pesticide Registration and Certification, Ministry of Agriculture of the P. R. China, Beijing, China (Oct 15, 2018). The title of the presentation was “Selection and registration of atoxigenic strains of *Aspergillus flavus* as a biocontrol agent”.
- Chen, Z.-Y.** 2018. Chair of the special session on “Application of RNAi for mycotoxin management” and an invited speaker at the 2018 Corn Utilization & Technology Conference (CUTC), St Louis, MO (June 4-6, 2018). The title of my presentation was “Transgenic control of aflatoxin contamination in corn through host-induced gene silencing”.
- Chen, Z.-Y.** 2018. Invited speaker at the 1<sup>st</sup> International Congress of Biological Control in Beijing, China (May 14-16, 2018). The title of the presentation was “Atoxigenic genotypes of *Aspergillus flavus* for aflatoxin mitigation in Guangxi: selection of active ingredients based on molecular characteristics”.
- Chen, Z.-Y.** 2018. Invited to give a progress report on the AMCOE funded project at the 2018 Commodity Classic meeting in Anaheim, CA (Feb 25, 2018). “Transgenic Control of Aflatoxin Contamination in Corn through Host Induced Gene Silencing.”
- Chen, Z.-Y.** 2017. Invited speaker at the Agro-products Quality Safety Research Institute of Heilongjiang Academy of Agricultural Sciences, Harbin, China (Sep 4-7, 2017). The title of presentation was “Overview of mycotoxins, their impact and prevention”.
- Chen, Z.-Y.** 2016. Invited speaker at Commercial Crops Research Institute, GuangXi Academy of Agricultural Sciences, Nanning, Guangxi Province, China (Oct 18, 2016). The title of presentation was “Overview of aflatoxins: biosynthesis, metabolism, toxicity, impact and prevention”.
- Chen, Z. -Y.** 2016. Invited speaker at the 9th International Symposium on Quality & Safety of Grains and Oil Seeds at Oil Crop Research Institute, CAAS, Wuhan, China (Oct 10-14, 2016). The title of presentation was “The history and future risk control of mycotxoins: challenges and opportunities”.
- Chen, Z.-Y.** 2016. Invited speaker at Department of Plant Pathology, University Federal de Vicosa, Brazil (March 28, 2016). The title of presentation was “Understanding host pathogen interactions to enhance soybean and corn resistance to fungal diseases”.
- Chen, Z.-Y.** 2016. Invited speaker at Department of Plant Pathology, University of Uberlandia, Brazil (March 16, 2016). The title of presentation was “Molecular Biology in Reducing Fungal Diseases in Soybean and Corn”.
- Chen, Z.-Y.** 2015. Invited speaker at the 8th international workshop on containinants analysis and risk control of agro-food quality & safety at Oil Crop Research Institute, CAAS,

Wuhan, China (Nov 2-9, 2015). The title of the presentation was “An overview of aflatoxin: biosynthesis, metabolism, toxicity, impact, and prevention”.

**Chen, Z.-Y.** 2014. Invited speaker at Liaoning University (May 26, 2014, Shenyang, China). The title of the presentation was “Discovery and confirmation of proteins/genes associated with maize aflatoxin resistance”.

**Chen, Z. -Y.** 2014. Invited speaker at the 2014 “World Mycotoxin Conference in Beijing (May 21, 2014). The title of the presentation was “Enhancing host resistance in maize to control *Aspergillus flavus* infection and aflatoxin contamination”.

### **National**

**Chen, Z.-Y.** 2019. Invited to give a progress report on the AMCOE funded project at the 2019 Commodity Classic meeting in Orlando, FL (Feb 26, 2019). “Transgenic Control of Aflatoxin Contamination in Corn through Host Induced Gene Silencing.”

**Chen, Z.-Y.** 2018. Invited to give a seminar at University of Louisiana at Lafayette (March 15, 2018). The presentation title was “Biotechnology in reducing fungal diseases of corn and soybean”.

**Chen, Z.-Y.** 2018. Invited to give a progress report on the AMCOE funded project at the 2018 Commodity Classic meeting in Anaheim, CA (Feb 25, 2018). “Transgenic Control of Aflatoxin Contamination in Corn through Host Induced Gene Silencing.”

**Chen, Z.-Y.** 2017. Invited speaker at the 3<sup>rd</sup> AMCOE/SERAT Corn Breeding Field Day (August 15-17, 2017), Lubbock, Tx. The title of presentation was “Transgenic approaches to improve aflatoxin resistance”.

**Chen, Z.-Y.** 2017. Invited to give a progress report on the AMCOE funded project at the 2017 Commodity Classic meeting in San Antonio, TX (Feb 28, 2017). “Transgenic Control of Aflatoxin Contamination in Corn through Host Induced Gene Silencing.”

**Chen, Z. -Y.** 2016. Invited speaker at the 2016 Corn Utilization and Technology Conference, St Louis, MO (June 6-8, 2016). The title of presentation was “Host Induced Gene Silencing as a New Approach to Reduce Aflatoxin Contamination in Corn”.

**Chen, Z.-Y.** 2016. Invited to give a progress report on the AMCOE funded project at the 2016 Commodity Classic meeting in New Orleans, LA (March 1, 2016). “Transgenic Control of Aflatoxin Contamination in Corn through Host Induced Gene Silencing.”

**Chen, Z.-Y.** 2015. Invited to give a progress report on the AMCOE funded project at the 2015 Commodity Classic meeting in Phenix, AZ (Feb 28, 2015). “Transgenic Control of Aflatoxin Contamination in Corn through Host Induced Gene Silencing.”

**Chen, Z.-Y.** 2014. Invited to give a progress report on the AMCOE funded project at the 2014 Commodity Classic meeting in San Antonio, TX (Feb 25, 2014). “Transgenic Control of Aflatoxin Contamination in Corn through Host Induced Gene Silencing.”

### **5. Other Scholarly or Creative Activities or Other Contributions to The Profession**

Review over 10 manuscripts on the average each year in the past 15 years for various journals.

Served on NSF PBI (Plant Biotic Interactions) Program Panel (Feb to March, 2020) and reviewed over 10 proposals

Guest editor for the Frontiers in Microbiology on the Research Topic: Research Efforts, Challenges and Opportunities in Mitigating Aflatoxins in Food and Agricultural Crops and its Global Health Impacts (2019).

Editor for the Journal of Oil Crop Science (July 2016-present)

Member of Editorial Board of Journal of Fungi (2014-present)

Served as a committee member for the Journal of Fungi Travel Awards (2017-2019)

Chairman of the APS Mycotoxicology Subcommittee (2013-2014).

Panel member for the USDA-NIFA 'Understanding Plant-Associated Microorganisms and Plant-Microbe Interactions' program (July, 2013)

Vice Chairman of the APS Mycotoxicology Subcommittee (2012-2013).

Chairman of the APS Host Resistance Subcommittee (2008-2009).

Vice Chairman of the APS Host Resistance Subcommittee (2007-2008).

Technical editor of the Asian Journal of Biochemistry (2006-2008).

## **6. Other awards, lectureships, or prizes that show recognition of scholarly achievement**

Recipient of the 2018 LSU Agcenter Tipton Team Research Award on Cercospora Leaf Blight of Soybean.

Recipient of the 2012 invited Gottlieb Memorial Lecture Award from Department of Crop Science, University of Illinois at Urbana-Champaign.

Recipient of 2009 Louisiana State University Agricultural Center Tipton Team Research Award, Dec, 2009.

## **7. Professional memberships**

Member of the International Society for Molecular Plant-Microbe Interactions (MPMI)

Member of the American Phytopathological Society (APS)

Member of the Chinese Phytopathological Society

Member of the APS Southern Division