Curriculum Vitae

Feng Chen, Ph.D.
Professor of Plant Functional Genomics
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Education

Ph.D. in Plant Biology, University of California, Davis, 2000
M.Sc. in Genetics, Institute of Genetics, Chinese Academy of Sciences, China, 1997
B.Sc. in Molecular Biology, Nankai University, China, 1994

Employment

07/2015 – present	Professor, Department of Plant Sciences, University of Tennessee, Knoxville, Tennessee
07/2010 – 06/2015	Associate Professor, Department of Plant Sciences, University of Tennessee, Knoxville, Tennessee
09/2004 – 06/2010	Assistant Professor, Department of Plant Sciences, University of Tennessee, Knoxville, Tennessee
02/2001 − 08/2004	Post-doctoral Research Fellow, Department of Molecular, Cellular and Developmental Biology, University of Michigan, Ann Arbor, Michigan.

Honors and Awards

Quest Scholar of the Week, University of Tennessee, 2014
T.J. Whatley Distinguished Young Scientist Award, University of Tennessee, 2012
Quest Scholar of the Week, University of Tennessee, 2012
Professional Development Award, University of Tennessee, 2007
Max-Planck-Institute Scholarship, Max-Planck-Institute for Chemical Ecology, 2001
American Society of Plant Biologists Travel Grant, 2001
Block Grant Award, University of California, Davis, 1999, 2000
GSA Travel Award, University of California, Davis, 1999
William Deardorff Graduate Award, Department of Vegetable Crops, University of California, Davis, 1999
Nankai University Individual Fellowship, Nankai University, 1991 - 1993
Outstanding Student Leadership, Nankai University, 1991 - 1993

Professional Services

Supervising Editor: Plant Direct, 2017 - present
Associate Editor: The Crop Journal, 2013 - present
Associate Editor: BMC Plant Biology, 2013 - 2017
Associate Editor: International Journal of Plant Genomics, 2009-2012

Reviewer for *Plant Cell, PNAS, The Plant Journal, Plant Physiology, Plant Biotechnology Journal, Planta, BMC Plant Biology, BMC Biotechnology, Plant Growth Regulation, Molecular Phylogenetics and Evolution, Theoretical and Applied Genetics, Journal of Agricultural and Food Chemistry, Plant Signaling and Behavior, Seed Science Research, Enzyme and Microbial Technology, Journal of Plant Physiology, International Journal of Plant Genomics, Insect Science*

Publications

Yang, M., Liu, G-H., Yamamura, Y., Chen, F. and Fu, J-Y. (2020). Divergent evolution of the diterpene biosynthesis pathway in tea plants (*Camellia sinensis*) caused by single amino acid variation of ent-kaurene synthase. *J. Agric. Food Chem.* In press

Luck, K., Chen, X-L., Norris, A.M., Chen, F., Gershenzon, J., and Köllner, T.G. (2020). The reconstruction and biochemical characterization of ancestral sequences reveal insights into the functional evolution of terpene synthases in the grasses. *Plant Mol. Biol.* 104: 203-215.

Wei, G., Eberl, F., Chen, X-L., Zhang, C., Unsicker, S.B., Köllner, T.G., Gershenzon, J., and Chen, F. (2020). Evolution of isoprenyl diphosphate synthase-like terpene synthases in fungi. *Sci. Rep.* 10:14944

Tang, H-B., Zhang, L-S., Chen, F., Zhang, X-T., Chen, F., Ma, H., and Van de Peer, Y. (2020). *Nymphaea colorata* (Blue-petal water lily). *Trends Genet.* 36: 718-719,

Xie, M., Zhang, J., Bryan, A.C., Pu, Y., Labbe, J., Pelletier, D.A., Engle, N., Morrell-Falvey, J.L., Schmutz, J., Ragauskas, A.J., Tschaplinski, T.J., Chen, F., Tuskan, G.A., Muchero, W., and Chen, J-G. (2020). Arabidopsis C-terminal Binding Protein ANGUSTIFOLIA modulates transcriptional co-regulation of MYB46 and WRKY33. *New Phytol.* doi: 10.1111/nph.16826

Zhang, K-G., Jiang, Y-F., Zhao, H-W., Köllner, T.G., Chenm S-M., Chen, F-D., and Chen, F. (2020). Diverse terpenoids and their associated antifungal properties from roots of different cultivars of *Chrysanthemum morifolium* Ramat. *Molecules* 25: 2083

Jiang, Y-F., Tholl, D. and Chen, F. (2020). Belowground plant volatiles: plant-plant, plant-herbivore and plant-microbial interactions. In *Biology of Plant Volatiles*. E Pichersky and N Dudareva eds, CRC Press. pp 346-359.

Jiang, Y-F., Qian, R-J., Zhang, W-B., Wei, W., Ma, X-H., Zheng, J., Köllner, T.G., and Chen, F. (2020). Composition and biosynthesis of scent compounds from sterile flowers of an ornamental plant *Clematis florida* cv. 'Kaiser'. *Molecules* 25: 1711

Chen, H., Köllner, T.G., Li, G-L., Wei. G., Chen, X-L., Zeng, D-L., Qian, Q., and Chen. F. (2020) Combinatorial evolution of a terpene synthase gene cluster explains terpene variations in *Oryza*. *Plant Physiol.* 182: 480-492

Zhang, L-S., Chen, Fei., Zhang, X., Li, Z., Zhao, Y., Lohaus, R., Chang, X., Dong, W., Ho, S., Liu, X., Chen, J., Zhuang, Y., Wang, H., Chen, X., Hu, J., Song, A., Liu, Y., Qin, Y., Wang, K., Liu, Y., Zhang, S., Yu, X., Yan, X., Jiao, Y., Wu, Q., Wang, L., Kong, H., Zhou, X., Yu, C., Chen, Y., Chen, W., Chen, X., Jia, Q, Zhang, C., Jiang, Y-F., Zhang, W-B., Liu, G-H., Fu, J-Y., Guo, W., Wang, Z., Li, F., Wang, J., Chen, F., Ma, H., Van de Peer, Y., and Tang, H-B. (2020) The water lily genome and the early evolution of flowering plants. *Nature* 577: 79-84

Darr, L., Cunicelli, M., Bhandari, H., Bilyeu, K., Chen, F., Hewezi, T., Li, Z., Sams, C.E., and Pantalone, V.R. (2020). Field performance of high oleic soybeans with mutant *FAD2-1A* and *FAD2-1B* genes in Tennessee. *J. Am. Oil Chem. Soc.* 97: 49-56

Xie, M., Zhang, L., Singan, V.R., McGranahan, M.J., Lafayette, P.R., Jawdy, S.S., Engle, N., Doeppke, C., Tschaplinski, T.J., Davis, M.F., Lindquist, E., Barry, K., Schmutz, J., Parrott, W.A., Chen, F., Tuskan, G.A., Chen, J-G., and Muchero, W. (2020) Identification of functional single nucleotide polymorphism of *Populus trichocarpa* PtrEPSP-TF and determination of its transcriptional effect. *Plant Direct.* 4:1–13.

Chen, X-L., Köllner, T.G., Xiong, W-D., Wei, G., and Chen, F. (2019) Emission and biosynthesis of volatile terpenoids from the plasmodial slime mold *Physarum polycephalum*. *Beilstein J. Org. Chem.* 15: 2872-2880

Xue, H-H., Jiang, Y-F., Zhao, H-W., Köllner, T.G., Chen, S-M., Chen, F-D., and Chen. F. (2019) Characterization of composition and antifungal properties of leaf secondary metabolites from thirteen cultivars of *Chrysanthemum morifolium* Ramat. *Molecules* 24: 4202

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Muchlinski, A., Chen, X-L., Lovell, J., Koellner, T.G., Pelot, K., Zerbe, P., Ruggiero, M., Callaway, L., Laliberte, S., Chen, F., and Tholl, D. (2019). Induced volatile terpenes in roots and leaves of Switchgrass (*Panicum virgatum* L.). *Front. Plant Sci.* 10:1144

Fu, J-Y., Liu, G-H., Wang, Yang, M., Wang, X-C., Chen, X-L., Chen, F. and Yang, Y.J. (2019) Isolation and functional analysis of squalene synthase gene in tea plant *Camellia sinensis. Plant Physiol. Biochem.* 142: 53-58

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Zhang, C., Chen, X-L., Crandall-Stotler, B., Qian, P., Köllner, T.G., Guo, H., and Chen, F. (2019) Biosynthesis of methyl (*E*)-cinnamate in the liverwort *Conocephalum salebrosum* and evolution of cinnamic acid methyltransferase. *Phytochemistry*. 164: 50-59

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Chen, X-L., Köllner, T.G., Shaulsky, G., Jia, Q-D., Dickschat, J.S., Gershenzon, J. and Chen, F. (2018) Diversity and functional evolution of terpene synthases in dictyostelid social amoebae. *Sci. Rep.* 8:14361

Chen, F., Ludwiczuk, A., Wei, G., Chen, X-L., Crandall-Stotler, B., and Bowman, J.L. (2018) Terpenoid secondary metabolites in bryophytes: chemical diversity, biosynthesis and biological functions. *Crit. Rev. Plant Sci.* 37: 210-231

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Invited Seminars and Conference Talks

Europe talk in July 2020 where and what topic?
Austrilian talk in May 2020
Biosynthesis of Terpenoids in Nonseed Land Plants. July 22, 2019. Phytochemical Society of North American Annul Meeting. Johnson City, Tennessee.
Plant Terpene Secondary Metabolism: Biosynthesis and Functions. June 1, 2018. Northeast Agricultural University, Harbin, China.
Origins and Evolution of Terpene Synthases in Plants. May 22, 2018. The Mini-symposium: Frontiers in Terpenoids Biosynthesis. Wuhan, China
Biosynthesis of Terpenoids in *Marchantia polymorpha*. December 18, 2017. The 65th National Institute for Basic Biology Conference - Renaissance of *Marchantia polymorpha* -the genome and beyond. Okazaki, Japan
Terpene Secondary Metabolites in Land Plants: Origins of Biosynthesis and Evolution for Diversity. Nov 1, 2017, Annual Southwest Regional Meeting, American Chemical Society. Lubbock, TX
Biosynthesis and Function of Terpene Secondary Metabolites. July 17, 2017. Huazhong Agricultural University. Wuhan, China.
Terpene Synthase Genes in Nonseed Plants and Social Amoebae. July 16-20, 2017. The 13th International Meeting on Biosynthesis, Function and Synthetic Biology of Isoprenoids (TERPNET 2017). Dalian, China
Functional Diversity of Plant Terpene Synthases. June 16, 2017. Southwest Forestry University, Kunming, China
Yield Enhancement by Improving the Chemical Language of Crop Plants. June 12, 2017. Inaugural Workshop for the China-US Center for Agricultural Plant Biology. Nanjing, China.
Diverse Functions and Evolution of Terpene Synthases. March 15, 2017. Department of Plant and Microbial Biology, North Carolina State University
Function and Evolution of Terpene Synthase Genes. February 8, 2017. Department of Biochemistry, Cellular and Molecular Biology, University of Tennessee
From Classic to Novel Terpene Synthase Genes in Plants: Functional Diversity. October 21, 2016. Fujian Agricultural and Forestry University, Fuzhou, China
Functional Genomics of Secondary Metabolism: From Biosynthesis to Application. October 20, 2016. College of Horticulture, Nanjing Agricultural University, Nanjing, China
Evolution of Terpene Synthase Genes: From Sequence Divergence to Chemical Diversity. October 18, 2016. The Third International Horticulture Research Conference. Nanjing, China
Terpene Synthases: Origins and Evolution. October 27, 2015. Terpene Workshop. Oak Ridge National Laboratory. Oak Ridge, TN
Functional Genomics of Plant Secondary Metabolism for Crop Improvement. October 20, 2014, Department of Plant Sciences, University of Tennessee

VOCs from Plants and Microbial Organisms: Function and Evolution. August 28, 2014. Tennessee Plant Research Center Colloquium, University of Tennessee, Knoxville, TN

Comparative and Functional Genomics of Plant Terpenoid Metabolism. August 6, 2014. Department of Plant Biology, Southern Illinois University, Carbondale, IL

Positive Darwinian Selection Is a Driving Force for the Diversification of Terpenoid Biosynthesis in the Genus *Oryza*. July 3, 2014. The 3rd International Conference on Plant Metabolism. Xiamen, China

Genomics-guided Crop Improvement: A Metabolic Perspective. Agriculture Genomes Institute, Chinese Academy of Agricultural Sciences, July 1, 2014. Shenzhen, China

Terpene Metabolism-based Plant Protection. June 30, 2014. Sun Yet-sen University, Guangzhou, China

Plant Protection Based on Secondary Metabolites. June 11, 2014. Beijing Academy of Agricultural and Forestry Sciences, Beijing, China

Plant Specialized Metabolism: Biosynthesis and Application. June 6, 2014. Northwest Agriculture and Forestry University, Yangling, China

Terpenoid Metabolism: Biosynthesis, Evolution and Metabolic Engineering. June 5, 2014. Shaanxi Normal University, Xi'an, China

Plant Protection Based on Natural Products. May 29, 2014. Institute of Plant Protection, Hebei Academy of Agricultural and Forestry Sciences. Baoding, China

Functional and Comparative Genomics of Plant Specialized Metabolism. May 23, 2014. China Agricultural University, Beijing, China

Identification and Functional Characterization of Terpene Synthase Genes of Microbial Type from Non-seed Plants. June 2, 2013. 11th International Meeting on Biosynthesis, Function and Biotechnology of Isoprenoids in Terrestrial and Marine Organisms. Crete, Greece

Evolution of Substrate Specificity in the SABATH Family of Methyltransferases in Plants. December 4, 2012. DuPont Pioneer, Hayward, CA

Plant Terpenoid Metabolism: Biosynthesis and Evolution. November 9, 2012. Institute of Medicinal Plant Development, Chinese Academy of Medical Sciences, Beijing, China

Functional Genomics of Plant Secondary Metabolism: Biosynthesis and Applications. November 7, 2012, Research Institute of Forest Ecology, Environment and Protection, Chinese Academy of Forestry. Beijing, China.

Molecular and Genomic Basis of Volatiles-mediated Indirect Defense against Insects in Rice. November 5, 2012. China National Rice Research Institute. Hangzhou, China.

Functional Genomics of Plant Secondary Metabolism: Biosynthesis and Applications. November 5, 2012. Zhejiang University, Hangzhou, China.

Functional Genomics of Plant Secondary Metabolism. October 31, 2012. Nanjing Forestry University, Nanjing, China.

Plant Terpenoid Metabolism: Biosynthesis and Evolution. October 31, 2012. Firmenich Aromatics (China), Co. Ltd., Shanghai, China.

Plant Terpenoid Metabolism: Biosynthesis and Evolution. October 30, 2012. Key Laboratory of Microbial Metabolism, Shanghai Jiaotong University, Shanghai, China.

Plant Natural Products for Fruit Tree Improvement. October 29, 2012. The 3rd International Conference on Omics and Biotechnology of Fruit crops. Nanjing, China.

Exploring Plant Natural Products for Pest Management. October 5, 2012. AgraQuest, Davis, CA

A SABATH Methyltransferase from the Moss *Physcomitrella patens* Catalyzes S-Methylation of Thiols and Has a Role in Detoxification. June 18, 2012. Moss 2012, New York City, NY

Functional and Comparative Genomics on Biosynthesis of Volatile Secondary Metabolites in Plants. October 26, 2011, Department of Botany, Oklahoma State University, OK

Exploring Plant Volatile Secondary Metabolites for Agricultural Improvement. September 28, 2011, College of Agriculture, Human and Natural Sciences, Tennessee State University, Nashville, TN

From Origin of Life to Plant Fitness: The Evolutionary Journey of Terpenoid Metabolism. May 31, 2011, College of Life Sciences, Nankai University, Tianjin, China

Evolution of Indirect Defense against Insects during Rice Domestication. January 16, 2011, Plant and Animal Genome XIX Conference, San Diego, California

Investigating Plant Secondary Metabolism Using Functional and Comparative Genomics. September 29, 2010, South China Botanical Garden, Chinese Academy of Sciences, Guangzhou, China

Functional and Comparative Genomics of Plant Secondary Metabolism. September 21, 2010, College of Life Sciences, Nankai University, Tianjin, China

Advanced Biofuels Production through Metabolic Engineering. September 18, 2010. The Second China-US Workshop on Biotechnology of Bioenergy Plants. Beijing, China

Exploring Plant Secondary Metabolism for Crop Improvement. June 22, 2010. Mountain Horticultural Crops Research and Extension Center, North Carolina State University

Molecular and Genomic Basis of Indirect Defense against Insects in Rice and other Grasses. March 29, 2010. International Plant Resistance to Insects Biennial Workshop. Charleston, SC

Plant Secondary Metabolism: Fundamental and Translational Studies. February 25, 2010. Tennessee Plant Research Center Colloquium, University of Tennessee, Knoxville, TN

Functional Genomics of Plant Defense against Insects. February 10, 2010. Tennessee Agricultural Production Association Agronomic Workshop, Jackson, TN

Uncovering the Terpenoid Machinery for Biofuel Production. November 17, 2009. The First China-US Workshop on Biotechnology of Bioenergy Plants. Knoxville, TN

Functional Genomics of Plant Secondary Metabolism: Discovery and Application. October 26, 2009, Department of Plant Sciences, University of Tennessee

Comparative Genomics of Plant Defense against Insects. September 2, 2009, Department of Horticulture, University of Kentucky

Integrative Genomics of Plant Secondary Metabolism, June 4, 2009, Dalian Institute of Chemical Physics, Chinese Academy of Sciences, Dalian, China

Investigating Plant Natural Product Biosynthesis Using Integrative Functional Genomics. May 27, 2009, Qingdao Institute of Oceanology, Chinese Academy of Sciences, Qingdao, China

Integrative Genomics of Plant Secondary Metabolism. May 25, 2009, Institute of Botany, Chinese Academy of Sciences, Beijing, China

Integrative Genomics of Plant Metabolism and Plant Protection, May 20, 2009, College of Life Sciences, Nankai University, Tianjin, China

Integrative Genomics of Plant Metabolism. January 29, 2009, Computational Systems Biology Lab, Department of Biochemistry and Molecular Biology, University of Georgia

Investigating the Genomic Basis and Evolution of Volatiles-mediated Indirect Plant Defense against Insects. January 10, 2009, Plant and Animal Genome XVII Conference, San Diego, California

Molecular and Genomic Basis of Insect-induced Plant Volatiles Mediating Tritrophic Interactions. August 29, 2008, Department of Ecology and Evolutionary Biology, University of Tennessee

Comparative Genomic, Structural and Biochemical Study of Substrate Specificity Evolution of the SABATH Family of Methyltransferases. June 30, 2008. Phytochemical Society of North American Annul Meeting. Pullman, Washington.

Metabolic, Genomic, and Biochemical Analyses Identify Novel Genes Involved in Attracting Natural Enemies of Rice Herbivores. September 26, 2007. Department of Biological Sciences, East Tennessee State University

Metabolic, Genomic, and Biochemical Analyses Identify Novel Genes Involved in Attracting Natural Enemies of Rice Herbivores. October 10, 2007. Department of Biochemical, Cellular and Molecular Biology, University of Tennessee

An Integrated Study of Indirect Defense against Insects in Rice—From Ecology to Metabolomics to Transcriptomics to Responsible Genes. March, 18, 2007. Plant Genomes. Cold Spring Harbor

Investigating Plant Natural Products Biosynthesis Using Integrated Functional Genomics. June 15, 2006. Bioactive Natural Products Group, University of Tennessee

Functional Genomic Study of Plant Chemical Defenses. April 21, 2006, Department of Entomology and Plant Pathology, University of Tennessee

Investigating Volatile Biosynthesis in Arabidopsis Using Integrated Genomics. September 21, 2005, Department of Horticulture, University of Kentucky

Metabolomics, Genomics and Biochemistry of Volatile Biosynthesis in Arabidopsis. August 4, 2005, Department of Plant Sciences, University of California, Davis

Biosynthesis, Regulation and Function of Volatile Secondary Metabolites in Arabidopsis. March 9, 2005, Department of Plant Pathology and Crop Physiology, Louisiana State University

Investigating Plant Natural Product Biosynthesis Using Functional Genomics. March 18, 2004, Department of Plant Sciences, University of Tennessee