

# SIXUE CHEN

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*Assistant Professor, Department of Biology; Genetics Institute;  
Plant Molecular and Cellular Biology Program;*

*Director, Proteomics Core Facility, Interdisciplinary Center for  
Biotechnology Research (ICBR);*

**UNIVERSITY OF FLORIDA**

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*<http://www.moleculardetective.org>*

*<http://proteomics.centers.ufl.edu>*

## **EDUCATIONAL BACKGROUND**

- 1993 – 1996**                      **Ph. D., Shanghai Institute of Plant Physiology and East  
China Normal University, China** (joint-training program)  
Dissertation:                      Plant plasma membrane transport systems and osmotic shock  
signal transduction in *Dunaliella salina*.
- 1991 – 1993**                      **M. S., East China Normal University, China**  
Dissertation:                      Molecular basis of the recognition and transformation of plant  
cells by *Agrobacterium rhizogenes*.
- 1987 – 1991**                      **B. S., Harbin Normal University, China**  
Thesis Title:                      The response of maize seedlings to low temperature.

## **PRESENT POSITIONS**

- 2006 – Present**                      **Assistant Professor, University of Florida**  
Research Interests:                      1) Elucidating molecular networks regulating glucosinolate  
metabolism using proteomics and metabolomics.  
2) Characterizing novel proteins and complexes in  
glucosinolate metabolism.  
3) Redox proteomics and metabolomics of guard cell ABA  
and methyljasmonate signaling.
- 2008 – Present**                      **Director of Proteomics Facility, University of Florida**  
Research Interests:                      1) Developing technology and analytical tools for analyzing  
low abundance proteins and modified proteins.  
2) Establishing targeted metabolomics tools and services.

## **PREVIOUS POSITIONS**

- 2003 – 2005**                    **Director, Proteomics and Mass Spectrometry Facility, Donald Danforth Plant Science Center, St. Louis, MO.**  
Research & Service: 1) Developing and implementing proteomics and mass spectrometry technologies in biological research.  
2) Providing analytical services to internal and external clients.  
3) Supervising students and training scientists on proteomics.
- 2001 – 2003**                    **Research Associate, University of Pennsylvania, Philadelphia, PA, USA.**  
Research Projects: 1) Defining vacuolar proteomics of yeasts and plants.  
2) Functional characterization of ABC transporters.  
3) Participating in international membrane transporter consortium microarray initiative.
- 1998 – 2001**                    **Assistant Research Professor, Plant Biochemistry Laboratory, The Royal Veterinary and Agricultural University, Denmark.**  
Research Projects: 1) Characterization of genes in glucosinolate biosynthesis.  
2) Characterization of glucosinolate degradation and transport.  
3) Metabolic engineering of glucosinolate profiles.
- 1997 – 1998**                    **Alexander-von-Humboldt Fellow, Universitaet Freiburg, Freiburg, Germany.**  
Research Project: Characterizing hydroxyl radical production in plant growth.

## **AREAS OF EXPERTISE (Key words)**

Plant Biochemistry, Specialized Metabolism, Functional Genomics, Proteomics, Metabolomics, Mass Spectrometry.

## **HONORS AND AWARDS**

- 2011 **Excellence Award for Assistant Professor**, University of Florida  
2011 **UF-HHMI Science for Life Distinguished Mentor Award**, University of Florida  
2010 **Teaching Award**, College of Liberal Arts & Sciences, University of Florida  
2009 **CAREER Award**, National Science Foundation, U.S.A  
2009 **Travel Award**, College of Liberal Arts & Sciences, University of Florida  
2007 **Longjiang Scholar**, Education Bureau of Heilongjiang Province, China  
2006 **Travel Award**, College of Liberal Arts & Sciences, University of Florida  
2006 **Honorary Professor**, Heilongjiang University, China.  
2005 **Who's Who in Agriculture**, International listing, U.S.A  
2003 **Visiting Professor**, Northeast Forestry University, China.  
1997 **Alexander-von-Humboldt Award**, Universitaet der Freiburg, Germany.  
1996 **Excellent Doctoral Graduate**, Shanghai Education Bureau, China.  
1996 **Outstanding Graduate Student**, East China Normal University, China.  
1993 **Science and Technology Contest**, 3rd Award, East China Normal University.  
1993 **Graduate Student Fellowship**, Xiangjie Foundation, Taiwan.

## **SPECIAL TRAINING**

- 2011 **Active learning and scientific teaching workshop**, Dr. Randolph M. Nesse, University of Michigan, USA.
- 2011 **LTQ Orbitrap LC-MS/MS system operator training**, Thermo Scientific, USA.
- 2010 **Taking Charge of Change, Course SCS080, section 4558**, UF Training and Organizational Development, Office of Human Resource Services, USA
- 2010 **Making Meetings Work, Course SCS080, section 4558**, UF Training and Organizational Development, Office of Human Resource Services, USA
- 2010 **Nanoflex Chip nanoLC training**, Eksigent, USA.
- 2009 **Management Principles and Philosophy training**, UF Training and Organizational Development, Office of Human Resource Services, USA
- 2009 **QSTAR Elite nanoflow UPLC MS/MS training**, Applied Biosystems, USA.
- 2008 **Search Committee Tutorial Certificate**, Faculty Development Workshop, University of Florida, USA.
- 2008 **Grantwriters' Workshop**, Grantwriters' Seminars and Workshops, LLC, USA.
- 2007 **4700 MALDI-TOF-TOF MS operator training**, Applied Biosystems, USA.
- 2006 **Grantwriters' Workshop**, Grantwriters' Seminars and Workshops, LLC, USA.
- 2006 **Faculty Recruitment and Diversity Workshop**, University of Florida, USA.
- 2006 **Faculty Mentoring Workshop**, Southeast Alliance for Graduate Education and the Professoriate, USA.
- 2005 **VISTA Teaching Workshop**, Education Department, University of Florida
- 2005 **QTRAP 4000 LC MS/MS operator training**, Applied Biosystems, USA.
- 2004 **Practical LC-MS**, American Society for Mass Spectrometry, USA.
- 2004 **Progenesis 1D and 2D gel image analysis**, Non-linear Dynamics, UK.
- 2003 **QSTAR XL MALDI/LC MS/MS operator training**, Applied Biosystems, USA.
- 2003 **MALDI-TOF Voyager Workstation and Proteomic Solutions 1 System**, Applied Biosystems, USA.
- 2001 **MassPrep Robotic Liquid Handling System and Micromass MALDI-TOF Mass Spectrometer**, Micromass, USA.
- 2001 **PDQuest 2D gel image analysis**, BioRad, USA.
- 1999 **Academic English for Teaching and Scientific Writing**, the Language Center of Copenhagen Business School, Denmark.
- 1998 **Bioinformatics courses** (DNA sequence and phylogenetic analysis), Biobase Center, University of Aarhus, Denmark.

**Foreign Languages:** English (fluent), German (intermediate, Goethe Institute, Germany), Danish (level 16, Studienskole, Denmark), Japanese (basics).

## **TEACHING RESPONSIBILITIES AND EXPERIENCE**

Fall 2011 **Proteomics-Theory and Practice (Bot6508C)**, University of Florida.

Spring 2011 **Biology Colloquium (BSC2930)**, University of Florida.

Spring 2011 **Genomics and Bioinformatics (GMS 6231)**, University of Florida.

Fall 2010 **Integrated Principles of Biology II (BSC 2011)**, University of Florida.

Spring 2010 **Intermediate Plant Physiology (Bot 5505)**, University of Florida.

Spring 2010 **Plant Physiology/Molecular Biology (Bot 3503)**, University of Florida.

Spring 2010 **Plant Physiology Lab (Bot 3503L)**, University of Florida.

Spring 2010 **Genomics and Bioinformatics (GMS 6231)**, University of Florida.

Fall 2009 **Proteomics-Theory and Practice (Bot6508C)**, University of Florida.

Spring 2009 **Intermediate Plant Physiology (Bot 5505)**, University of Florida.

Spring 2009 **Plant Physiology/Molecular Biology (Bot 3503)**, University of Florida.

Spring 2009 **Plant Physiology Lab (Bot 3503L)**, University of Florida.

Spring 2009 **Genomics and Bioinformatics (GMS 6231)**, University of Florida.

Fall 2008 **Cells, Organisms, and Genetics (BSC2007)**, University of Florida.

Spring 2008 **Intermediate Plant Physiology (Bot 5505)**, University of Florida.

Spring 2008 **Plant Physiology/Molecular Biology (Bot 3503)**, University of Florida.

Spring 2008 **Plant Physiology Lab (Bot 3503L)**, University of Florida.

Spring 2008 **Genomics and Bioinformatics (GMS 6181)**, University of Florida.

Fall 2007 **Proteomics-Theory and Practice (Bot6508C)**, University of Florida.

Spring 2007 **Plant Physiology/Molecular Biology (Bot 3503)**, University of Florida.

Spring 2007 **Plant Physiology Lab (Bot 3503L)**, University of Florida.

Spring 2007 **Genomics and Bioinformatics (GMS 6181)**, University of Florida.

Fall 2006 **Graduate Student Seminar (Bot 6936)**, University of Florida.

Spring 2006 **Plant Physiology/Molecular Biology (Bot 3503)**, University of Florida.

Spring 2006 **Plant Physiology Lab (Bot 3503L)**, University of Florida.

Fall 2005 **Introduction to Bioinformatics and Genomics (BCH-G628)**, St. Louis University.

Spring 2005 **Plant Cells and Proteomics (Bio3052)**, Washington University, St. Louis.

Spring 2004 **Plant Cells and Proteomics (Bio3052)**, Washington University, St. Louis.

Fall 2002 **Proteomics (Bio571, assistant)**, University of Pennsylvania.

Fall 1997 **Advanced Plant Physiology (assistant)**, Universitaet Freiburg, Germany.

Spring 1993 **Plant Physiology and Molecular Biology**, East China Normal University.

Spring 1991 **General Biology (pedagogy)**, Harbin No. 3 Senior High School, China.

## **STUDENT MENTORING**

### **Present Students**

#### Postdoctoral Associates and Visiting Scientists

2009 – Present Dr. Xiaofen Jin (visiting postdoc from Assman lab)

#### Graduate Students

2010 – Present Jennifer Parker (advisor)  
 2010 – Present Joe Collins (advisor, rotation)  
 2010 – Present Kevin Cooper (advisor, rotation)  
 2010 – Present Yi Fu (Committee member)  
 2010 – Present Long Yu (Committee member)  
 2010 – Present Chris Young (Scholarship Oversight Committee)  
 2010 – Present Li-wen (Rita) Chang (committee member)  
 2010 – Present Lilibeth Salvador (committee member)  
 2010 – Present Andres Sandoval (committee member)  
 2010 – Present Yazhou Chen (co-advisor)  
 2010 – Present Yih-Feng Hsieh (advisor, rotation)  
 2009 – Present Hugo Miranda (committee member)  
 2008 – Present Qiuying Pang (co-advisor)  
 2008 – Present Malwina Huzarska (committee member)  
 2008 – Present Desire Djidonou (committee member)  
 2007 – Present Mengmeng Zhu (advisor)

#### Undergraduate Students

2010 – Present Sarah Yi (University of Florida)  
 2010 – Present Michelle Foele (University of Florida)  
 2009 – Present Justin Goldsmith  
 2009 – Present Johanna M. Strul

#### Laboratory Technician

2008 – Present Ning Zhu

#### Other Personnel (Proteomics Core)

2010 – Present Dr. Cecilia Silva Sánchez, Postdoctoral Associate  
 2010 Summer Khader Ghem, Summer Research Assistant  
 2008 – 2010 Alfred Chong, Scientific Manager for Peptide Synthesis  
 2008 – Present Majorie Chow, Scientific Manager for Biomarker  
 2008 – Present Carolyn Diaz, Scientific Lab Manager for Mass Spec  
 2008 – Present Ran Zheng, Chemist

### **Past Students**

#### Postdoctoral Associates and Visiting Scientists

2009 – 2010 Dr. Xiufeng Yan (Professor at Northeast Forestry University, Harbin, China)

2009 – 2010	Dr. Liqun Chen (Professor at China Agricultural University, Beijing, China)
2008 – 2009	Dr. Shaojun Dai (Professor at Northeast Forestry University, Harbin, China)
2008 – 2009	Jing Gao (Graduated from Northeast Forestry Univ.)
2006 – 2008	Sophie Alvarez (postdoctoral associate, Assistant Manager at Danforth Plant Science Center)
2003 – 2005	Victor Asirvatham (Research Coordinator at South Florida University)
2002 – 2003	Prem N. Jagadev (Professor at Orissa University of Agriculture and Technology, India)

Graduate Students

2007 – 2010	Yan He (advisor, graduated in spring 2010)
2007 – 2010	Courtney Morris (committee member, graduated in summer 2010)
2006 – 2010	Jin Koh (committee member, graduated in summer 2010)
2007 – 2009	Barbara Kahn (rotation, committee member)
2007 – 2009	Linda Abraham (rotation)
2006 – 2007	Emily Wang (rotation)

Undergraduate Students

2009 – 2010	Kwame G. Gyimah (NSF REU Summer Intern)
2009 – 2010	Bryno H. Gay (NSF REU Summer Intern)
2007 – 2008	Jason Hall
2006- 2008	Mark Jackson (undergraduate research project)
2003	Jenie Finley (NSF REU Summer Intern)

Laboratory Technician

2008 – 2010	Bing Chen
2003 – 2006	Jeanne Sheffield
2002 – 2003	Shun Liang
1999 – 2001	Christina Matson

Other Students

2010	Isabel Branstrom (Summer Research)
2010	Kiva Ebert (Summer Research)
2009	Jennifer Sanford (Summer Research)
— 2008	Sau-Hyon Cho (Summer Research)
	Alec M. Fufidio (Summer Research)
2007	Ryan Walker (Summer Research)
2007	Gordon Wilson (Summer Research)
2007	David Jia (Summer Research)
2006	Justin Goldsmith (Summer Research)
2006	Kern Vijayvargiga (Summer Research)

Other Personnel (Proteomics Core)

2008 – 2009 Cynthia Bryant, Lab Technician  
2008 – 2009 Scott McClung, Lab Manager for Mass Spec

**SERVICE TO PROFESSION**

**Organized Conference and Workshop**

Sept. 2010 Organizer of the 4<sup>th</sup> Symposium of Science, Engineering and Biomedicine, University of Florida  
Dec. 2009 Organizer of Proteomics Symposium and Training Workshop for University Teachers at Heilongjiang University, China  
Aug. 2009 Organizer of Proteomics Workshop and Symposium, University of Florida  
June 2009 Chair of the session “Integration of Genomics, Proteomics, and Metabolomics” at 2009 World *In Vitro* Biology Conference, Charleston, South Carolina, USA  
May 2008 Organizer of Proteomics Workshop at Heilongjiang University, China  
June 2007 Organizer of Proteomics Workshop at Heilongjiang University, China  
April 2005 Organizer of NSF Genome Funded Proteomics Symposium and Workshop  
July 2005 Organizer of Proteomics Hands-on Workshop for NSF REU program  
Jan. 2004 Organizer of Danforth Center Proteomics Workshop  
Dec. 2003 Organizer of Danforth Center “An Evening of Exploration” event

**Journal Editorial/Referee Service:**

2009 – Present Editorial Board, *Frontiers of Biology* (ISSN 1673-3509)  
2006 – Present Editorial Board, *Scientific Journals International*  
2001 – Present Referee for *Achaea*, *Biochemistry*, *CAB Reviews*, *Current Microbiology*, *Journal of Agricultural and Food Chemistry*, *Journal of American Society for Mass Spectrometry*, *Journal for Biological Chemistry*, *Journal of Chromatography*, *Journal of Experimental Botany*, *Journal of Integrated Microbiology*, *Journal of Physical Chemistry*, *Journal of Plant Nutrition*, *Journal of Proteomics*, *Journal of Proteome Research*, *Letters of Applied Microbiology*, *Molecular and Cellular Proteomics*, *Molecular Plant*, *Natural Chemical Biology*, *New Phytologist*, *Peptide Letters*, *Phytochemistry*, *The Plant Cell*, *Plant Physiology*, *Plant Cell Reports*, *Plant Growth Regulation*, *Plant Physiology and Biochemistry*, *Planta*, *Plos One*, *Proteomics*, *Russian Journal of Plant Physiology*, *Theoretical and Applied Genetics*, and *Trends in Plant Sciences*, (*ad hoc*) for *Plant Cell*, *Plant Physiology* and *Journal of Biological Chemistry*, Reviewer for textbook *Biology*, 2/e, by Brooker/Widmaier/Graham/Stiling.

**Grant Review and Panel Service**

2011 Estonian National Science Foundation, Proposal reviewer

- 2010 National Science Foundation, Cellular Regulation panel member
- 2010 National Science Foundation, IOS program proposal reviewer
- 2010 National Science Foundation, MCB program proposal reviewer
- 2009 Luxembourg National Research Fund (Fonds National de la Recherche), proposal reviewer
- 2009 National Science Foundation of China, proposal reviewer
- 2009 National Science Foundation, MCB program proposal reviewer
- 2008 National Science Foundation, Signal transduction program proposal reviewer
- 2008 Israel National Science Foundation, proposal reviewer
- 2008 National Science Foundation of China, proposal reviewer
- 2007 National Science Foundation, MRI panel member
- 2007 United States Department of Agriculture, CRIS proposals
- 2006 National Science Foundation, MRI panel member

### **Professional Societies**

- 2009 – Present Member of American Society for In Vitro Biology
- 2008 – Present Member of Japanese Society of Plant Physiologists
- 2003 – Present Member of American Society for Mass Spectrometry (ASMS)
- 2003 – Present Member of American Biological Resources Facility (ABRF)
- 2003 – 2006 Member of Midwest Mass Spectrometry Society
- 2002 – Present Member of The Proteomics Society
- 2002 – Present Member of American Society for Plant Biology (ASPB)

## **PUBLICATIONS FROM UNIVERSITY OF FLORIDA**

Symbols refer to the personnel that I mentored: \*graduate student; \*\*undergraduate or high school student; §postdoctoral researcher; #other personnel.

- 75)** Zhu, N.<sup>#</sup>, Zhu, M.M.<sup>\*</sup>, Zheng, R., **Chen, S.** (2011) Development of an improved isotope-coded affinity tag technology for thiol redox proteomics (submitted).
- 74)** Ma, C., Wang, Y.<sup>\*</sup>, Wang, Y.T., Wang, L., **Chen, S.**, Li, H. (2011) Identification of a sugar beet BvM14-MADS box gene through differential gene expression analysis of monosomic addition line M14. *Journal of Plant Physiology* (in press).
- 73)** Muthukrishnan, G., Quinn, G.A., Lamers, R.P., Diaz, C., Cole, A.L., **Chen, S.**, Cole, A.M. (2011) Exoproteome of *Staphylococcus aureus* reveals putative determinants of nasal carriage. *Journal of Proteome Research* 10, 2064-2078.
- 72)** Knoll, J.E., Ramos, M.L., Zeng, Y., Holbrook, C., Chow, C. <sup>#</sup>, **Chen, S.**, Maleki, S., Bhattacharya, A., Ozias-Akins, P. (2011) TILLING for allergen reduction and improvement of quality traits in peanut (*Arachis hypogaea* L.). *BMC Plant Biology* 11, 81 (doi:10.1186/1471-2229-11-81).
- 71)** Chen, Y.<sup>\*</sup>, Pang, Q.<sup>\*</sup>, Dai, S.<sup>§</sup>, Wang, Y., **Chen, S.**, Yan, X. (2011) Proteomic identification of differentially expressed proteins in Arabidopsis in response to methyl jasmonate. *Journal of Plant Physiology* 168, 995-1008.



- 70) Chen, Y.\* , Yan, X., **Chen, S.** (2011) Bioinformatic analysis of molecular network of glucosinolate biosynthesis. ***Computational Biology and Chemistry*** 35, 10-18.
- 69) He, Y.\* , Chen, L., Zhou, Y., Mawhinney, T.P., Chen, B.# , Kang, B-H., Hauser, B.A., **Chen, S.** (2011) Functional characterization of Arabidopsis isopropylmalate dehydrogenases reveals their important roles in gametophyte development. ***New Phytologist*** 189, 160-175.
- 68) Wang, X., **Chen, S.**, Zhang, H., Shi, L., Cao, F., Guo, L., Xie, Y., Wang, T., Yan, X.# , Dai, S.§. (2010) Desiccation tolerance mechanism in resurrection fern-ally *Selaginella tamariscina* revealed by physiological and proteomic analysis. ***Journal of Proteome Research*** 9, 6561-6577.
- 67) He, Y.\* , Chen, B., Pang, Q.\* , Strul J.M.\*\* , **Chen, S.** (2010) Functional specification of Arabidopsis isopropylmalate isomerases in glucosinolate and leucine biosynthesis. ***Plant and Cell Physiology*** 51, 1480-1487.
- 66) Wang, Y., Li, H., **Chen, S.** (2010) Advances in quantitative proteomics. ***Frontiers in Biology*** 5, 195-203.
- 65) Han, B., **Chen, S.**, Dai, S.§., Yang, N., Wang, T. (2010) iTRAQ-based comparative proteomics reveals the features of plasma membrane-associated proteomes of pollen grains and pollen tubes from *Lilium davidii* Duch. ***Journal of Integrative Plant Biology*** 52, 1043-1058.
- 64) Pang, Q.\* , **Chen, S.**, Dai, S.§, Chen, Y., Wang, Y., Yan, X. (2010) Comparative proteomics of salt tolerance in *Arabidopsis thaliana* and *Thellungiella halophila*. ***Journal of Proteomics Research*** 9, 2584-2599.
- 63) Kang, S., **Chen, S.**, Dai, S.§ (2010) Proteomics characteristics of rice leaves in response to environmental factors. ***Frontiers in Biology*** 5, 246-254 (cover).
- 62) Humbard, M.A., Miranda, H.V., Lim, J.M, Krause, D.J., Pritz, J.R., Zhou, G., **Chen, S.**, Wells, L., Maupin-Furlow, J.A. (2010) Ubiquitin-like Small Archaeal Modifier Proteins (SAMPs) and their conjugation to proteins in *Haloferax volcanii*. ***Nature*** 463, 54-60.
- 61) Zhu, M.\* , Simons, B., Ning, Zhu.# , Oppenheimer, D.G., **Chen, S.** (2010) Analysis of abscisic acid responsive proteins in *Brassica napus* guard cells by multiplexed isobaric tagging. ***Journal of Proteomics*** 73, 790-805.
- 60) Zhang, X., **Chen, S.**, Mou, Z. (2010) Nuclear localization of NPR1 is required for regulation of salicylate tolerance, isochorismate synthase1 expression and salicylate accumulation in Arabidopsis. ***Journal of Plant Physiology*** 167, 144-148.
- 59) Ren, H., Zhong, H., Dai, S., **Chen S.**, Yan, X. (2009) Water stress on glucosinolate contents in Arabidopsis rosette leaves. ***Acta Ecologica Sinica*** 29, 4372-4379.
- 58) Tian, X., Dai, S., **Chen S.**, Yan, X. (2009) Effect of mechanical wounding on glucosinolate content and composition in *Arabidopsis thaliana*. ***Acta Ecologica Sinica*** 29, 1647-1654.
- 57) Li, H., Cao, H., Wang, Y., Pang, Q.Y.\* , Ma, C., **Chen, S.** (2009) Proteomic analysis of sugar beet apomictic monosomic addition line M14. ***Journal of Proteomics*** 73, 297-308.
- 56) He, Y.\* , Mawhinney, T.P., Preuss, M.L., Schroeder, A.C., Chen, B., Abraham, L., Jez, J.M., **Chen, S.** (2009) A redox active isopropylmalate dehydrogenase functions

in the biosynthesis of glucosinolates and leucine in Arabidopsis. *Plant Journal* 60, 679-690.

- 55) Alvarez, S.<sup>§</sup>, Zhu, M.\* , **Chen, S.** (2009) Proteomics of Arabidopsis redox proteins in response to methyl jasmonate. *Journal of Proteomics* 73, 30-40.
- 54) Paul, A.L., Liu, L., McClung, S., Laughner, B., **Chen, S.**, Ferl, R.J. (2008) Comparative interactomics: analysis of arabidopsis in vivo 14-3-3 complexes reveals highly conserved 14-3-3 interactions between humans and plants. *Journal of Proteome Research* 8, 1913-1924.
- 53) Pang, Q.Y.\* , **Chen, S.**, Li, L., Yan, X. (2008) Characterization of glucosinolate-myrosinase system in developing salt cress *Thellungiella halophila*. *Physiologia Plantarum* 136, 1-9.
- 52) Raichaudhuri, A., Peng, M., Naponelli, V., **Chen, S.**, Sánchez-Fernández, R., Gu, H., Gregory III, J.F., Hanson, A.D., Rea, P.A. (2009) Plant vacuolar ABA transporters that translocate folates and antifolates *in vitro* and confer antifolate tolerance in vivo. *Journal of Biological Chemistry* 284, 8449 - 8460.
- 51) Low, J.M., Chauhan, A.K., Gibson, D.S., Zhu, M.\* , **Chen, S.**, Rooney, M.E., Moore, T.L. (2009) Proteomic analysis of circulating immune complexes in juvenile idiopathic arthritis reveals disease-associated proteins. *Proteomics-clinical applications* 3, 829-840.
- 50) Alvarez, S.<sup>§</sup>, Wilson, G.H.\*\* , **Chen, S.** (2009) Proteomic analysis of *in vivo* redox regulated proteins in Arabidopsis. *Journal of Chromatography B* 877, 101-104.
- 49) Zhu, M.\* , Dai, S., McClung, S., Yan, X.<sup>#</sup> , **Chen, S.** (2009) Functional differentiation of *Brassica napus* guard cells and mesophyll cells revealed by comparative proteomics. *Molecular and Cellular Proteomics* 8, 752 - 766 (cover).
- 48) Alvarez, S.<sup>§</sup>, He, Y.\* , **Chen, S.** (2008) Comparative investigations of glucosinolate-myrosinase system in Arabidopsis suspension cells and hypocotyls. *Plant Cell and Physiology* 49, 324-333.
- 47) Xin, Y., Dai, S.<sup>§</sup> , **Chen, S.**, Yan, X. (2008) Effect of NaCl stress on glucosinolate content in rosette leaves of Arabidopsis thaliana. *Journal of Northeast Forestry University* 36, 51-52.
- 46) Chen, Y.\* , **Chen S.**, Yan, X. (2008) Effect of environment on glucosinolate metabolism in plant. *Acta Ecologica Sinica* 28, 2829-2834.
- 45) Li, Q., Dai, S.<sup>§</sup> , **Chen, S.**, Yan, X. (2008) Analysis of glucosinolate composition and content in radish. *Acta Horticulturae Sinica* 35, 1205-1208.
- 44) Li, Q., Dai, S.<sup>§</sup> , **Chen, S.**, Yan, X. (2008) Effect of nitrogen supply on content of glucosinolates in radish sprouts. *Journal of Natural Science of Heilongjiang University* 25, 385-388.
- 43) Li, Y., **Chen, S.**, Yan, X. (2008) Biosynthesis of camalexin in plant. *Plant Physiology Communications* 44, 763-768.
- 42) Dai, S., Yan, X.F., **Chen, S.** (2007) Proteomics of pollen development and germination. *Journal of Proteome Research* 6, 4556-4563.
- 41) Zhu, J., Alvarez, S., Marsh, E., LeNoble, M.E., Cho, I.J., Sivaguru, M., **Chen, S.**, Nguyen, H.T., Wu, Y., Schachtman, D., Sharp, R.E. (2007) Changes in the Cell Wall

Proteome in the Maize Primary Root in response to water deficit. II. Region-Specific Changes in the Water Soluble and Lightly Ionically-Bound Proteins. *Plant Physiology* 145, 1533-1548.

- 40) Yan, X.F., **Chen, S.** (2007) Regulation of plant glucosinolate metabolism. *Planta* 226, 1343-1352.
- 39) Jez, J.M., Schachtman, D.P., Berg, R.H., Taylor, C.G., **Chen, S.**, Hicks, L.M., Jaworski, J.G., Smith, T.J., Nielsen, E., Pikaard, C.S. (2007) Developing a new interdisciplinary lab course for undergraduate and graduate students: Plant Cells and Proteins. *Biochemistry and Molecular Biology Education* 35, 410-415.
- 38) **Chen, S.**, Sánchez Fernández, R., Lyver, E.R., Dancis, A., Rea, P.A. (2007) Functional half molecule ABC transporters from *Arabidopsis thaliana*: The ATM subfamily. *Journal of Biological Chemistry* 282, 21561-21571.
- 37) Sarry, J., **Chen, S.**, Collum, R., Liang, S., Peng, M., Lang, A., Yuan, C., Hippler, M., Rea P. (2007) Analysis of the vacuolar luminal proteome of yeast *Saccharomyces cerevisiae*. *FEBS Journal* 274, 4287-4305.
- 36) **Chen, S.**, Harmon, A. (2006) Advances in plant proteomics. *Proteomics* 6, 5504-5516.

## **PUBLICATIONS PRIOR TO UNIVERSITY OF FLORIDA**

- 35) Sheffield, J.<sup>#</sup>, Taylor, N., Fauquet, C., **Chen, S.** (2006) Cassava root proteome: protein identification and differential expression. *Proteomics* 6, 1588-1598 (**Cover**).
- 34) Alvarez, S.<sup>§</sup>, Goodger, J., Marsh, E., **Chen, S.**, Schachtman, D.P. (2006) The proteome of maize xylem sap and changes after drought stress. *Journal of Proteome Research*. 5, 963-972.
- 33) **Chen, S.** (2006) Rapid protein identification using direct infusion nanoelectrospray ionization mass spectrometry. *Proteomics* 6, 16-25.
- 32) Zhu, J., **Chen, S.**, Asirvatham, V.<sup>§</sup>, Schachtman, D.P., Wu, Y., Sharp, R.E. (2006) Cell wall proteome in the maize primary root elongation zone. I. Extraction and identification of water soluble and lightly ionically-bound proteins. *Plant Physiology* 140, 311-325.
- 31) Herman, E.M., Rotter, K., Premakumar, R., Elwinger, G., Bae, R., King, L.E., **Chen, S.**, Livingston, D.P. (2006) Additional freeze hardiness in wheat acquired by exposure to -3 °C is correlated with changes in physiology, structure, transcriptome and proteome. *Journal of Experimental Botany* 57, 3601-3618.
- 30) **Chen, S.** (2006) High throughput protein separation and mass spectrometry characterization. In Plant Biotechnology Application Guide, chapter 9. Chemical Industry Press, pp. 143-160.
- 29) Yan, X., Wang, Y., Zhang, Y., Yu, T., Ma, M., Ju, S., **Chen, S.** (2005) Tissue-specific and environmental regulation of camptothecin and 10-hydroxycamptothecin levels in *Camptotheca acuminata*. *Bot. Bull. Acad. Sin.* 46, 325-331.
- 28) Jez, J., Cahoon, B., **Chen, S.** (2004) *Arabidopsis thaliana* glutamate-cysteine ligase: Functional properties, kinetic mechanism and regulation of activity. *Journal of Biological Chemistry* 279, 33463-33470.
- 27) Maathuis, F.J.M., Filatov, V., Herzyk, P., Krijger, G.C., Axelsen, K.B., **Chen, S.**, Green, B.J., Li, Y., Madagan, K.L., Sánchez-Fernández, R., Forde, B.J., Palmgren,

- M.G., Rea, P.A., Williams, L.E., Sanders, D., Amtmann, A. (2003) Transcriptome analysis of root transporters reveals participation of multiple gene families in the response to cation stress. **Plant Journal** 35, 675-692.
- 26) Rea, P.A., Sanchez-Fernandez, R., **Chen, S.**, Peng, M., Klein, M., Geisler, M., Martinoia, E. (2003) Plant ABC Transporters. In: Book ABC transporters from bacteria to humans, SP Cole, K Kuchler, C Higgins, B Holland (eds), Academic Press, UK pp.335-356.
- 25) **Chen, S.**, Glawishnig, E., Jorgensen, K., Naur, P., Jorgensen, B., Olsen, C.E., Rasmussen, H., Pickett, J.A., Halkier, B.A. (2003) CYP79F1 and CYP79F2 have distinct functions in the biosynthesis of aliphatic glucosinolates in *Arabidopsis*. **Plant Journal** 33, 923-937.
- 24) Petersen, B.L., **Chen, S.**, Hansen, C., Halkier, B.A. (2002) Composition and content of glucosinolates in developing *Arabidopsis thaliana*. **Planta** 214, 562-571.
- 23) **Chen, S.**, Andereason, E. (2001) Update on glucosinolate metabolism and transport. **Plant Physiology and Biochemistry** 39, 743-758 (**Cover**).
- 22) **Chen, S.**, Petersen, B.L., Olsen, C.E., Shulz, A., Halkier, B.A. (2001) Glucosinolate uptake and long-distance transport in *Arabidopsis thaliana*. **Plant Physiology** 127, 194-201.
- 21) **Chen, S.**, Halkier, B.A. (2000) *In vivo* synthesis and purification of radioactive *p*-hydroxybenzylglucosinolate in *sinapis alba*. **Phytochemical Analysis** 11, 174-178.
- 20) Wittstock, U., **Chen, S.**, Halkier, B.A. (2000) Expression cloning of plasma membrane transporter proteins by screening for uptake of radiolabelled substrates. **Journal of Experimental Botany** 51, 955-960.
- 19) **Chen, S.**, Halkier, B.A. (2000) Characterization of glucosinolate transporter in *Brassica napus* leaf cells. **Journal of Biological Chemistry** 275, 22955-22960.
- 18) **Chen, S.**, Schopfer, P. (1999) Hydroxyl radical production in physiological reactions - a novel function of peroxidase. **European Journal of Biochemistry** 260, 726-735.
- 17) **Chen, S.**, Halkier, B.A. (1999) Functional Expression and Characterization of *Brassica napus* Myr1 myrosinase in *Saccharomyces cerevisiae*. **Protein Expression and Purification** 17, 414-420.

## **GRADUATE AND UNDERGRADUATE WORK IN CHINA**

- 16) **Chen, S.**, Li, L., Jiao, X.Z. (1998) Effect of osmotic shock on protein phosphorylation in *Dunaliella salina* cells. **Journal of Integrative Plant Biology** (*Acta Botanica Sinica*) 40, 126-131.
- 15) Jiao, X.Z., **Chen, S.** (1998) The plasma membrane transport systems of higher plants. In Yu SW, Tang ZC eds, **Plant Physiology & Molecular Biology**, 2<sup>nd</sup> edition. Science Publisher, Beijing. Chapter 21. pp. 320-335.
- 14) **Chen, S.**, Li, L., Yen, C.C., Xu, Z.K., Jiao, X.Z. (1997) Inositol phospholipid signal transduction system in *Dunaliella salina* and its function in osmotic shock. **Chinese Science** 42, 151-155.
- 13) **Chen, S.**, Yen, C.C., Jiao, X.Z. (1996) Plant plasmalemma Transport Systems and osmotic shock signal transduction. Doctoral Dissertation at Shanghai Institute of Plant Physiology, *Chinese Academy of Sciences* and East China Normal University.
- 12) Li, L., **Chen, S.**, Jiao, X.Z. (1996) Application of flow cytometry in plant biology research. **Plant Physiology Communications** 32, 441-443.

- 11) Huang, X.H., **Chen, S**, Yen, C.C. (1996) Study on the plant cell wall receptors of *Agrobacterium rhizogenes*. **Journal of East China Normal University** 1, 95-100.
- 10) **Chen, S.**, Li, L., Yen, C.C., Jiao, X.Z. (1996) Relationship of plasmalemma redox activity to K<sup>+</sup> uptake by *Dunaliella salina* cells. **Journal of Integrative Plant Biology (Acta Botanica Sinica)** 38, 295-301.
- 9) **Chen, S.**, Li, L., Yen, C.C., Jiao, X.Z. (1996) The Plasmalemma redox system in unicellular alga *Dunaliella salina*. **Acta Phytophysiologica Sinica** 22, 197-203.
- 8) **Chen, S.**, Yen, C.C., Jiao, X.Z. (1996) Effect of osmotic shock on the redox system in the plasma membrane of *Dunaliella salina*. **Cell Research** 1996, 6, 31-38.
- 7) **Chen, S.**, Huang, X.H., Yen, C.C. (1995) The ion effect in attachment of *Agrobacterium rhizogenes* to plant cells. **Acta Biologiae Experimentalis Sinica** 28, 215-225.
- 6) **Chen, S.** (1995) Advances in the study of agrobacterium attachment to the receptors in plant cell wall. **Journal of Biology** 5, 12-14.
- 5) **Chen, S.**, Jiao, X.Z. (1995) Physiological functions of plasmalemma redox system. **Life Sciences** 7, 24-32.
- 4) **Chen, S.**, Jiao, X.Z. (1994) Inositol phospholipid signal transduction system in plant cells. **Plant Physiology Communications** 30, 405-413.
- 3) **Chen, S.** (1993) The interaction between Agrobacteria and plants. **Biology Bulletin** 3, 13
- 2) **Chen, S.**, Li, H.Q. (1993) Recent advancement in the research of the transformation of monocotyledon mediated by Agrobacteria. **BioTechnology** 3, 1-5.
- 1) Du, A.Z., **Chen, S.**, Li, Y.L. (1992) Study on beverages of *Schisandra chinensis* bail. **Journal of Harbin Normal Univ.** 8, 85-88.

## **INVITED SEMINARS AND LECTURES**

- 57) Towards systems biology of guard cell signaling and glucosinolate networks. The 2nd International Conference on Plant Metabolism. Qingdao, China, June 30-July 3, 2011.
- 56) Toward Systems Biology of Plant Signaling and Metabolic Networks. Department of Biology, University of Pennsylvania, March 16-18, 2011.
- 55) Elucidation of plant molecular networks through "fishing expedition and the study of fish". Department of Horticulture, Zhejiang University, December 17, 2010.
- 54) The application of proteomics in biological research. College of Life Sciences, Northeast Agricultural University, December 13, 2010.
- 53) The promise and challenges of plant biotechnology. Sunshine Stage Seminar Series. Heilongjiang University, December 9, 2010.
- 52) "Omics" for hypothesis generation research. The 4th Symposium of Science, Engineering and Biomedicine. Orlando, September 3-6, 2010.
- 51) Identification of redox sensitive proteins in Brassica napus guard cells: new evidence for crosstalk between ABA and MeJA signaling pathways. Plant Biology 2010 - the Annual Meeting of American Society of Plant Biologists. Montreal, Canada, July 31 - August 4, 2010.
- 50) Current advances in 2D gel electrophoresis and applications. Proteomics Workshop organized by the Biotechnology Core of the College of Pharmacy and

- Pharmaceutical Sciences at Florida A&M University. Tallahassee, Florida, May 19 - 20, 2010.
- 49) Advances in quantitative membrane proteomics. Harbin No. 1 Medical University, Harbin, December 22, 2009.
  - 48) Proteomics of plant redox regulatory networks. Department of Horticulture, Zhejiang University, December 27, 2009.
  - 47) Elucidating cellular molecular networks using proteomics and metabolomics. College of Life Sciences, Heilongjiang University, Harbin, December 29, 2009.
  - 46) Proteomics of plant redox regulatory networks. 3rd Mexican Symposium on Mass Spectrometry Molecular and Cellular Proteomics, San Luis Potosi, S.L.P., Mexico, November 8-12, 2009.
  - 45) Quantitative proteomics revealed plant guard cell signaling and metabolic networks. 1st International Congress on Analytical Proteomics, Caparica, Lisbon, Portugal, September 30-October 3, 2009.
  - 44) Towards systems biology of plant signaling networks. Department of Plant Biology, Cornell University, Ithaca, New York, September 18, 2009.
  - 43) Towards a systems analysis of plant molecular networks. 2009 World In Vitro Biology Conference, Charleston, South Carolina, USA, June 6-12, 2009.
  - 42) Comparative proteomics of redox regulated proteins. The second Moffitt Symposium on Mass Spectrometry. Tampa, Florida, February 12, 2009.
  - 41) Towards systems biology of plant signaling and metabolic networks. Plant Pathology Department, University of Florida, USA. November 4, 2008.
  - 40) Towards a systems level analysis of plant molecular networks. Florida Citrus Research and Education Center, Lake Alfred, Sept. 12.
  - 39) Functional characterization of an Arabidopsis isopropylmalate dehydrogenase involved in leucine and glucosinolate biosynthesis. Banff International Conference on Plant Metabolism, Banff, Alberta, Canada, August 2, 2008.
  - 38) Proteomics applications in biomedical research: current examples and future perspectives. Center of Analytical Medicine, Harbin Medical University, Harbin, May 19, 2008.
  - 37) Redox proteomics of jasmonate signaling in Arabidopsis. Botany Institute, Chinese Academy of Sciences, Beijing, China, April 28, 2008.
  - 36) Plant proteomics and metabolomics – our success and lessons. Department of Biological Sciences, China Agricultural University, Beijing, China, April 25, 2008.
  - 35) Alteration of glucosinolate metabolism leads to heavy metal resistance in *Arabidopsis*. Microbiology and Cell Sciences, University of Florida, April 21, 2008
  - 34) Functional characterization of AtLeuC1 in glucosinolate biosynthesis in Arabidopsis. Plant Pathology Department, University of Florida, Gainesville, Dec. 4, 2007
  - 33) Can plant biology research save the world ? Science for Life Lecture Series, University of Florida, Gainesville, October 16, 2007
  - 32) Towards systems biology of glucosinolate metabolism. Pennsylvania State University, State College, Pennsylvania, August 08, 2007
  - 31) Plant suspension cells as model systems to study biological questions. Northeast Forestry University, Harbin, China, June 18, 2007

- 30) Plant biology research and human future. Sunlight Lecture Series, Heilongjiang University, Harbin, China, June 11 - 22, 2007
- 29) Applications of proteomics in biological research and beyond. Department of Biochemistry, St. Louis University, St. Louis, May 21, 2007
- 28) Glucosinolate metabolism in Arabidopsis. Microbiology and Cell Science Department, University of Florida, Gainesville, Nov. 27, 2006
- 27) System biology in plant glucosinolate research. Gatersleben Lecture, Leibniz Gemeinschaft and SunGene, BASF, Gatersleben, Germany, Sept. 19, 2006
- 26) Vacuolar proteomics revealed important features of the glucosinolate-myrosinase system in Arabidopsis. The 1<sup>st</sup> International Conference on Plant Glucosinolate Metabolism, Jena, Germany, Sept. 12, 2006.
- 25) Plant systems biology: current status and future perspective. Northeast Forestry University, Harbin, China, Aug. 12, 2006.
- 24) Proteomics revealed targets for food genetic engineering. The 7<sup>th</sup> International Plant Genomics Conference, Harbin, China, Aug. 10, 2006.
- 23) Glucosinolate biosynthesis and systems biology. Genetics Institute Seminar Series, University of Florida, April 12, 2006.
- 22) Plant Proteomics and glucosinolate metabolism. PMCB Program, University of Florida, Feb. 23, 2006.
- 21) Cassava root proteomics. Biology Department. University of Missouri at Rolla. Rolla, U.S.A. Nov. 7, 2005
- 20) Current technologies for protein characterization. The 22<sup>nd</sup> Conference of Midwest Chinese Science and Technology, St. Louis, U.S.A. Oct. 15, 2005.
- 19) Arabidopsis glucosinolate metabolism. National key laboratory of Plant Physiology and Biochemistry, China Agricultural University, Beijing, China, July 14, 2005.
- 18) Metabolic engineering of plant secondary metabolites. College of Biological Sciences, Northeast Forestry University, Harbin, China. July 8, 2005.
- 17) Proteomics and mass spectrometry approaches to unraveling biological black-boxes. Department of Plant Biology, Southern Illinois University, Carbondale, U.S.A. March 22, 2005
- 16) Plant glucosinolate biosynthesis and vacuomics. Department of Botany, University of Florida, Gainesville, U.S.A. January 20, 2005
- 15) Protein fractionation and mass spectrometry characterization. Sigma Biotechnology Center, St. Louis, U.S.A. November 22, 2004
- 14) Vacuolar proteomics, an example for discovering novel protein functions. Department of Biology, University of Missouri at St. Louis, U.S.A. May 7, 2004
- 13) Proteomics and mass spectrometry tools for biomedical research. Department of Microbiology and Immunology, St. Louis University, St. Louis, March 16, 2004
- 12) Proteomics technologies, Instrumentation and Bioinformatics. Department of Biology, Washington University at St. Louis, U.S.A. February 3, 2004
- 11) Proteomics and mass spectrometry technologies and applications. Thursday Evening Seminar Series, Danforth Plant Science Center, St. Louis, U.S.A. January 22, 2004.

- 10) Vacuomics: definition of the vacuolar proteome of yeast and Arabidopsis. Pan-American Plant Membrane Biology Workshop, Cuernavaca, Mexico. May 28 - June 1, 2003
- 9) The AtATM *Arabidopsis* subfamily of mitochondrial ABC transporters is implicated in iron homeostasis. Pan-American Plant Membrane Biology Workshop, Cuernavaca, Mexico. May 28-June 1, 2003.
- 8) Cytochromes P450 CYP79F1 and CYP79F2 in the biosynthesis of glucosinolates in Arabidopsis. Department of Biology, University of Pennsylvania, U.S.A. May 2001
- 7) Glucosinolate metabolism and transport. Plant Physiology, Today and Tomorrow, Ph.D. Workshop, Tanumstrand, Sweden. August 7-11, 2000
- 6) Functional characterization of the myrosinase MYR1 from *Brassica napus* in *Saccharomyces cerevisiae*. European Research Conference on Plant Cell Biology and Biotechnology Applications, Rolduc, Netherlands. September, 1999
- 5) Plasma membrane glucosinolate transport systems. Center of Plant Physiology and Molecular Biology, University of Tuerbingen, Germany. May 1999.
- 4) Reactive oxygen species generated by plasma membrane NADH oxidase and the role in plant elongation growth. Center for Molecular Plant Physiology, Royal Danish Veterinary and Agricultural University, Frederiksberg, Denmark. April 1998.
- 3) Recent advancement in plant plasma membrane redox systems. Annual Cell Biology Conference, Chinese Society for Cell Biology, Shanghai. September 1995.
- 2) Biochemical characterization of a novel plasma membrane redox system. No. 6 National Conference of Cell Biology, Chinese Society for Cell Biology, Huangshan, China. June 1995
- 1) Osmotic signal transduction in *Dunaliella salina* and its implications in salt stress regulation. National Plant Environmental Physiology Conference, Fuzhou, China. October 1994

## **CONFERENCE PROCEEDINGS: POSTERS AND ABSTRACTS**

- 69) Parker, J., Zhu, N., Koh, J., Foele, M., Yi, S., **Chen, S.** (2011) Evolutionary tug of war: Examining proteome regulation in tomato defense against *Pseudomonas*. Plant Biology 2011 Annual Conference, American Society of Plant Biologists. Minneapolis, MN, USA, August 5-11.
- 68) He, Y., Zhu, N., Pang, Q., Parker, J., Yan, X., **Chen, S.** (2011) Integrated proteomics and metabolomics revealed metabolic acclimation to gene-dosage dependent perturbation of isopropylmalate dehydrogenases in Arabidopsis. The 2nd International Conference on Plant Metabolism. Qingdao, China, June 30-July 3.
- 67) Gookin, T.E., Jin, X., **Chen, S.**, Assmann, S.M. (2011) Candidate GPCR signaling systems integrate multiple environmental signals in G-protein dependent and independent pathways. The 22<sup>nd</sup> International Conference on Arabidopsis Research. Madison, Wisconsin, USA, June 22-June 25.
- 66) Chen, Y., Yan, X., **Chen, S.** (2011) Exploring the molecular network of glucosinolate biosynthesis using bioinformatic tools. The 22<sup>nd</sup> International Conference on Arabidopsis Research. Madison, Wisconsin, USA, June 22-June 25.
- 65) Koh, J., **Chen, S.**, Zhu, N., Soltis, P.S., Soltis, D.E. (2011) Comparative proteomics in the recently and recurrently formed allopolyploid *Tragopogon mirus* (Asteraceae)



- and its diploid parents. The 18th Biennial Plant Biology Symposium. Pennsylvania State University, State College, USA, May 18-21.
- 64) Chen, Y., Pang, Q., He, Y., Branstrom, I., Yi, S., **Chen, S.** (2011) Glucosinolate metabolic network delineated by metabolomic and proteomic analysis. Plant Molecular and Cellular Biology Annual Conference, Daytona Beach, May 6-7.
  - 63) Parker, J., Zhu, N., Foele, M., Yi, S., **Chen, S.** (2011) Evolutionary Tug of War: Examining proteome regulation in tomato defense against *Pseudomonas*. Plant Molecular and Cellular Biology Annual Conference, Daytona Beach, May 6-7.
  - 62) Foele, M., Parker, J., **Chen, S.** (2011) The effects of Pst and its virulence factors on stomatal movement in Tomato (*Solanum lycopersicum*). HHMI Undergraduate Research Symposium. University of Florida, April 21.
  - 61) Zhu, M., Zhu, N., Jin, X., Assmann, S., **Chen, S.** (2011) Identification of redox sensitive proteins in *Brassica napus* guard cells. Keystone Symposia-Plant Abiotic Stress Tolerance Mechanisms, Water and Global Agriculture. Keystone, Colorado, USA, January 17-22.
  - 60) Chen, Y., Yan, X., **Chen, S.** (2010) Bioinformatic analysis of molecular networks related to glucosinolate biosynthesis. 2010 NSF Research Day. Gainesville, Florida, October 25-26.
  - 59) Zhu, M., Zhu, N., Jin, X., **Chen, S.** (2010) Identification of redox sensitive proteins in *Brassica napus* guard cells: new evidence for crosstalk between guard cell ABA and MeJA signaling pathways. Plant Biology 2010-the Annual Meeting of American Society of Plant Biologists. Montreal, Canada, July 31-August 4.
  - 58) **Chen, S.**, He, Y., Chen, L., Zhou, Y., Mawhinney, T., Chen, B., Kang, B., Hauser, B. (2010) Functional characterization of Arabidopsis isopropylmalate dehydrogenases reveals their important roles in gametophyte development. Plant Biology 2010-the Annual Meeting of American Society of Plant Biologists. Montreal, Canada, July 31-Aug 4.
  - 57) Diaz, C., Chow, M., Chong, A., Zheng, R., **Chen, S.** (2010) Proteomics and mass spectrometry applications in biomedical research. Annual Meeting of the Association of Biomolecular Resource Facilities. Sacramento, CA, March 20 – 21.
  - 56) Booy, A., Simons, B., Seymour, S.L., Zhu, M., **Chen, S.** (2010) Elucidation of methyl jasmonate signaling in *Brassica napus* guard cells by LC MALDI. Fifty eighth ASMS Conference on Mass Spectrometry. Salt Lake City, Utah, May 23 – 27.
  - 55) Chen, Y., Dai, S., Wang, Y., **Chen, S.**, Yan, X. (2009) Proteome and glucosinolate changes in leaves of *Arabidopsis thaliana* in response to methyljasmonate. Fifth Asia Pacific Conference on Chemical Ecology. Hawaii, Oct. 27-30.
  - 54) McClung, S., Chow, M., Chung, A., Zheng, R., Bryant, C., Zhu, N., **Chen, S.** (2009) Quantitative proteomic approaches in biomedical research. American Biological Resources Facility (ABRF) Conference. Memphis, Tennessee, Feb. 7-10.
  - 53) Zhu, M., Dai, S., McClung, S., **Chen, S.** (2009) Comparative proteomics revealed functional specification of guard cells and mesophyll cells. ABRF Conference. Memphis, Tennessee, Feb. 7-10.
  - 52) McClung, S., Chow, M., **Chen, S.** (2009) Quantitative proteomic approaches in biomedical research. The second Moffitt Symposium on Mass Spectrometry. Tampa, Florida, Feb. 11-12.

- 51) Zhu, M., Dai, S., McClung, S., **Chen, S.** (2009) ITRAQ proteomics revealed functional specification of guard cells. The second Moffitt Symposium on Mass Spectrometry. Tampa, Florida, Feb. 11-12.
- 50) Alvarez, S., Zhu, M., Wilson, G., McClung, S., **Chen, S.** (2009) Comparative proteomics of redox regulated proteins. The second Moffitt Symposium on Mass Spectrometry. Tampa, Florida, Feb. 11-12.
- 49) McClung, S., Chow, M., Zheng, R., Chung, A., Bryant, C., Zhu, N., **Chen, S.** (2008) Proteomics and mass spectrometry applications in biomedical research. Florida Genetics 2008 Conference, University of Florida, Oct. 29-30.
- 48) He, Y., Chen, B., Abraham, L., **Chen, S.** (2008) Arabidopsis isopropylmalate dehydrogenase, an enzyme involved in leucine biosynthesis and methionine chain-elongation process of aliphatic glucosinolate biosynthesis. Florida Genetics 2008 Conference, University of Florida, Oct. 29-30.
- 47) He, Y., Zhu, M., Alvarez, S., Abraham, L., **Chen, S.** (2008) Functional characterization of Arabidopsis isopropylmalate isomerases implicated in the biosynthesis of methionine-derived glucosinolates. Florida Genetics 2008 Conference, University of Florida, Oct. 29-30.
- 46) Dai, S., Shi, Y., Sun, G., **Chen, S.** (2008) Proteomic analysis of leaves from alkali grass under salt stress. Florida Genetics 2008 Conference, University of Florida, Oct. 29-30.
- 45) Low, J.M., Chauhan, A.K., Gibson, D.S., Zhu, M., **Chen, S.**, Rooney, M.E., Moore, T.L. (2008) Proteomic analysis of circulating immune complexes reveals disease-associated proteins. HUPO 7th Annual World Congress, Amsterdam, August 16 - 20, The Netherlands.
- 44) Zhu, M., Dai, S., McClung, S., **Chen, S.** (2008) Functional differentiation of *Brassica napus* guard cells and mesophyll cells revealed by comparative proteomics. Banff International Conference on Plant Metabolism, Banff, Canada, July 30 – August 3.
- 43) He, Y., Alvarez, S., **Chen, S.** (2008) Functional characterization of an Arabidopsis isopropylmalate dehydrogenase involved in leucine and glucosinolate biosynthesis. Banff International Conference on Plant Metabolism, Banff, Alberta, Canada, July 30 – August 3.
- 42) Alvarez, S., Wilson, G.H., Zhu, M., **Chen, S.** (2008) Identification of redox regulated proteins in response to methyl jasmonate in Arabidopsis shoots and roots using comparative proteomics. Banff International Conference on Plant Metabolism, Banff, Alberta, Canada, July 30 – August 3.
- 41) He, Y., Zhu, M., Alvarez, S., **Chen, S.** (2008b) Arabidopsis isopropylmalate isomerase involved in methionine chain-elongation pathway of aliphatic glucosinolate biosynthesis. Plant Molecular and Cellular Biology Annual Conference, Jacksonville Beach, May 16-17.
- 40) He, Y., Hall, J., **Chen, S.** (2008a) Biochemical characterization of an Arabidopsis isopropylmalate dehydrogenase. Plant Molecular and Cellular Biology Annual Conference, Jacksonville Beach, May 16-17.
- 39) Zhu, M., Dai, S., McClung, S., **Chen, S.** (2008) Functional differentiation of *Brassica napus* guard cells and mesophyll cells revealed by comparative proteomics. Plant Molecular and Cellular Biology Annual Conference, Jacksonville, May 16-17.

- 38) Dai, S., Shi, Y., Sun, G., **Chen, S.** (2008) Proteomic analysis of leaves from alkali grass under salt stress. Plant Molecular and Cellular Biology Annual Conference, Jacksonville Beach, May 16-17.
- 37) Alvarez, S., Yan, He., Wang, Y., **Chen, S.** (2007a) Study of the glucosino-late-myrosinase defense system using Arabidopsis suspensions cells in response to methyl jasmonate. The 24<sup>th</sup> International Plant Biology Symposium, University of Missouri, May 22-24.
- 36) Alvarez, S., Wilson, G., Zhu, M., **Chen, S.** (2007b) Proteomics of redox regulated proteins in methyl jasmonate treated plants. Florida Genetics Conference, University of Florida, Nov. 7-8.
- 35) He, Y., Walker, R., Alvarez, S., **Chen, S.** (2007) Functional characterization of 3-isopropylmalate dehydrogenase in Arabidopsis. Florida Genetics Conference, University of Florida, Nov. 7-8.
- 34) Wang, Y., Vijayvargiga, K., Godsmith, J., **Chen, S.** (2007) Characterization of myrosinases and interacting proteins. The 24<sup>th</sup> International Plant Biology Symposium, University of Missouri, May 22-24.
- 33) **Chen, S.**, Sarry, E., Collum, R., Wang, E., Yuan, C., Rea, P.A. (2007) New properties of the glucosinolate-myrosinase defense system discovered by vacuolar proteomics. 18<sup>th</sup> International Conference on Arabidopsis Research, Beijing, China, June 20-23, 2007. poster 494 on p. 140
- 32) **Chen, S.**, Fernandez, R.S., Lyver, E., Dancis, A., Rea, P.A. (2007) Functional characterization of Arabidopsis half-molecule ABC transporters implicated in iron homeostasis. 18<sup>th</sup> International Conference on Arabidopsis Research, Beijing, China, June 20-23, 2007. poster 537 on p. 152
- 31) Zhu, J., Alvarez, S., LeNoble, M., Marsh, E., **Chen, S.**, Cho, I-J., Nguyen, H., Wu, Y., Sharp, R. (2007) Cell wall proteome in the maize primary root growth zone: region-specific responses to water deficit. XI International Cell Wall Meeting, Copenhagen, Denmark. August 12-17, 2007.
- 30) Wang, Y., Vijayvargiga, K., Godsmith, J., **Chen, S.** (2006) Functional characterization of myrosinase and interacting proteins in Arabidopsis. Florida Genetics Conference, University of Florida, Nov. 1, 2006.
- 29) Sharp, R., Zhu, J., Alvarez, S., LeNoble, M., **Chen, S.**, Schachtman, D., Wu, Y., Tao, W., Nguyen, H. et al., (2006) Root growth maintenance during water deficit: physiology to cell wall proteomics - and back to physiology. ASA-CSSA-SSSA International Conference, Indianapolis, November 13, USA.
- 28) Jez, J., Cahoon, R., Bonner, E., **Chen, S.** (2005) Redox-Regulation of Glutathione Synthesis in Plants. ASBMB annual conference, San Diego, April 2-6, USA.
- 27) Zhu, J., Alvarez, S., **Chen, S.**, Schachtman, D., Wu, Y., Sharp, R.E. (2005) Cell wall proteome in the maize primary root growth zone. Plant Biology Conference, Seattle, July 16-20, USA.
- 26) Alvarez, S., Goodger, J., Marsh, E., **Chen, S.**, Schachtman, D. (2005) Changes of the proteome of maize xylem sap in response to water stress. Plant Biology Conference, Seattle, July 16-20, USA.
- 25) Zhu, J., Alvarez, S., Marsh, E., LeNoble, M., **Chen, S.**, Tao, W., Nguyen, H.T., Spollen, W.G., Springer, G.k., Wu, Y., Schachtman, D., Sharp, R.E. (2005) Cell

- wall proteome in the maize primary root growth zone: region-specific responses to water deficit. Missouri Life Sciences Week, Columbia, April 9, USA.
- 24) Collum, R., **Chen, S.**, Jean-Emanuel, S., Liang, S., Peng, M., Su, Y., Yuan, C., Klionsky, D., Rea, P. (2005) Vacuomics: quantitative definition of vacuolar proteins in yeast and Arabidopsis. Plant Biology Conference, Boston, August 5-9, USA.
  - 23) Speichinger, J., Taylor, N., Fauquet, C., **Chen, S.** (2005) Cassava root proteomics: protein identification and characterization. Proteome Society meeting, St. Louis, November 3-4.
  - 22) **Chen, S.** (2005) Protein identification using direct infusion and nanoflow HPLC electrospray ionization mass spectrometry. 53rd. Annual Conference of American Society for Mass Spectrometry, San Antonio, June 5-9.
  - 21) **Chen, S.**, Speichinger, J. (2005) Large scale characterization of cassava root proteins involved in tuber formation. Proteome informatics workshop. Ann Arbor, June 23- 24.
  - 20) Zhu, J.M., Wu, J., **Chen, S.**, Schachtman, D., Sharp, R. (2005) Cell wall proteome in the maize primary root growth zone: region-specific responses to water deficit. Plant & Animal Genomes Conference, San Diego, California, Jan 15-19, 2005
  - 19) **Chen, S.**, Speichinger, J. (2004) Towards understanding biological systems through proteomics and mass spectrometry technologies. 6<sup>th</sup> Annual Fall Symposium of Danforth Center, Cellular mechanisms of plant development, St. Louis, Sept 24-25.
  - 18) Herman, E.M., Rotter, K., **Chen, S.**, Livingston, D.P. (2004) Enhancement of freezing tolerance by frost temperature involves complex biological mechanisms. 6<sup>th</sup> Annual Fall Symposium of Danforth Center, Cellular mechanisms of plant development, St. Louis, Sept 24-25.
  - 17) Goodger, J., Sharp, R., Marsh, E., **Chen, S.**, Asirvatham, V., Schachtman, D. (2004) Analysis of xylem sap constituents and implications for controlling water loss of maize under water stress. 6<sup>th</sup> Annual Fall Symposium of Danforth Center, Cellular mechanisms of plant development, St. Louis, Sept 24-25, 2004.
  - 16) **Chen, S.**, Collum, R., Sarry, J.E., Su, Y., Liang, S., Yuan, C.X., Klionsky, D.J., Rea, P.A. (2004) Vacuolar luminal proteomics of yeast and Arabidopsis. 52th. Annual Conference of American Society for Mass Spectrometry, Nashville, May 21-May 28
  - 15) **Chen, S.** (2003) Proteomic analysis of plant vacuolar functions. 5th. Fall Annual Fall Symposium of Danforth Plant Science Center, October 17-18.
  - 14) **Chen, S.**, Liang, S., Peng, M., Yuan, C.X., Klionsky, D.J., Rea, P.A. (2003) Vacuomics: definition of the vacuolar proteome of yeast and *Arabidopsis*. Pan-American Plant Membrane Biology Workshop, Cuernavaca, Mexico. May 28-June 1
  - 13) Peng, M., **Chen, S.**, Sánchez-Fernández, R., Lu, Y., Gu, H., Rea, P.A. (2003) The *Arabidopsis* ATP-binding-cassette transporter, AtMRP1, catalyzes the vacuolar transport of folates and confers tolerance to methotrexate in the intact plant. Pan-American Plant Membrane Biology Workshop, Cuernavaca, Mexico. May 28-June 1
  - 12) Peng, M., **Chen, S.**, Sánchez-Fernández, R., Gu, H., Rea, P.A. (2003) An *Arabidopsis* plasma membrane-localized multispecific ATP-binding cassette transporter, AtMRP4, extrudes glutathione-conjugates and confers tolerance to organic xenobiotics. Pan-American Membrane Biology Workshop, Cuernavaca, Mexico. May 28-June 1
  - 12) **Chen, S.**, Petersen, B.L., Olsen, C.E., Schulz, A., Halkier, B.A. (2001) Long-distance transport of glucosinolates in *Arabidopsis thaliana*. 12th International Workshop on Plant Membrane Biology, Wisconsin. August 11-16

- 11) Peng, M., Sanchez-Fernandez, R., **Chen, S.**, Rea, P.A. (2001) The *Arabidopsis* whole molecule ABC protein AtMRP4 is a folic acid transporter. 12th International Workshop on Plant Membrane Biology, Wisconsin. August 11-16
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