

CURRICULUM VITAE

Ling Li <http://biology.msstate.edu/people/staff.php?id=ll1230>

Assistant Professor, Department of Biological Sciences

315 Harned Hall, 295 Lee Blvd

P.O. Box GY, Mississippi State University, Starkville, MS 39762

Phone: (662) 325-7570; Fax: (662) 325-7939; Email: liling@biology.msstate.edu.

Professional Preparation

Peking University, Beijing, China	Biology	B.S.	1997
Peking University, Beijing, China	Botany	M.S.	2000
Iowa State University, Ames, IA	Genetics (Minor: Statistics)	Ph.D.	2006
Iowa State University, Ames, IA	Gen, Devel & Cell Biol	Postdoc	2006-2007

Appointments

2017-present Assistant Professor, Biological Sciences, Mississippi State University

2018-present Affiliate Assistant Professor, Biochemistry, Biophysics and Molecular Biology, Iowa State University

2017-present Guest Professor, South China Agricultural University

2011-2017 Adjunct Assistant Professor, Genet, Develop and Cell Biol, Iowa State University

2010-2015 Associate Scientist, Genetics, Development and Cell Biol, Iowa State University

2008-2010 Assistant Scientist II, Genetics, Development and Cell Biol, Iowa State University

2007-2008 Research Associate II, Genetics, Develop and Cell Biol, Iowa State University

Career Achievements

25 peer-reviewed publications (6 as first author and 7 as corresponding author), 6 patents/pending patents; 9 funded research grants (8 as PI and one as Co-PI); 44 invited talks; 17 honors and awards; taught or co-taught 6 graduate or undergraduate level courses; graduate advisor for 5 graduate students, postdoc-scholar mentor for 7 postdocs, hosted 4 visiting scholars; experiment training for 30 graduate students, 44 undergraduate students, 9 high-school students, and 16 postdocs; topic editor for a peer-reviewed journal and ad-hoc reviewer for 17 journals.

Publications

Qi M, Zheng W, Zhao X, Hohenstein J, Kandel Y, O'Conner S, Wang Y, Du C, Nettleton D, Macintosh G, Tylka G, Wurtele E, Whitham S, and **Li L** (2018) QQS orphan gene and its interactor NF-YC4 reduce susceptibility to pathogens and pests, **Plant Biotechnology Journal**, DOI:10.1111/pbi.12961. *Impact Factor 7.44*

O'Conner S, Neudorf A, Zheng W, Qi M, Zhao X, Du C, Nettleton D, and **Li L** (2018) From Arabidopsis to crops: the Arabidopsis QQS orphan gene modulates nitrogen allocation across species. In: Shrawat A, Zayed A, Lightfoot DA. eds. **Engineering Nitrogen Utilization in Crop Plants**, Springer, ISBN 978-3-319-92957-6.

Reem N, Chen H, Hur M, Zhao X, Wurtele ES, Li X, **Li L**, and Zabolina O (2018) Comprehensive transcriptome analyses correlated with untargeted metabolome reveal differentially expressed pathways in response to cell wall integrity alterations. **Plant Molecular Biology**, <https://doi.org/10.1007/s11103-018-0714-0>. *Impact Factor 3.4*

- Tong Z, Wang D, Sun Y, Yang Q, Meng X, Wang L, Feng W, **Li L**, Wurtele ES, and Wang X (2017) Comparative proteomics of rubber latex revealed multiple protein species of REF/SRPP family respond diversely to ethylene stimulation among different rubber tree clones. **International Journal of Molecular Sciences**, 18: 958. *Impact Factor 3.3*
- Guan X, Okazaki Y, Lithio A, **Li L**, Zhao X, Jin H, Nettleton D, Saito K, and Nikolau BJ (2017) The 3-hydroxyacyl-ACP dehydratase component of the plant mitochondrial fatty acid synthase system. **Plant Physiology**, 173: 2010-2028. *Impact Factor 6.3*
- Tong Z, Sun Y, Wang D, Wang L, **Li L**, Meng X, Feng W, Wurtele ES, and Wang X (2016) Identification and functional characterization of HbOsmotin from *Hevea brasiliensis*. **Plant Physiology and Biochemistry**, 109: 171-180. *Impact Factor 2.9*
- Jones D, Zheng W, Huang S, Zhao X, Du C, Yennamalli RM, Sen TZ, Nettleton D, Wurtele ES, and **Li L*** (2016) A clade-specific Arabidopsis gene connects primary metabolism and senescence. **Frontiers in Plant Science**, 7: 983 (*corresponding author). *Impact Factor 4.5*
- Soták M, Czeranková O, Klein D, Jurčáková Z, **Li L**, and Čellárová E (2016) Comparative transcriptome reconstruction of four *Hypericum* species focused on hypericin biosynthesis. **Frontiers in Plant Science**, 7: 1039. *Impact Factor 4.5*
- Soták M, Czeranková O, Klein D, Nigutová K, Altschmied L, **Li L**, Jose A, Wurtele ES, and Čellárová E (2016) Differentially expressed genes in hypericin-containing hypericum perforatum leaf tissues as revealed by de novo assembly of RNA-Seq. **Plant Molecular Biology Reporter**, doi:10.1007/s11105-016-0982-2. *Impact Factor 2.3*
- Li L***, Zheng W, Zhu Y, Ye H, Tang B, Arendsee Z, Jones D, Li R, Ortiz D, Zhao X, Du C, Nettleton D, Scott P, Salas-Fernandez M, Yin Y, and Wurtele ES* (2015) The QQS orphan gene regulates carbon and nitrogen partitioning across species via NF-YC interactions. **PNAS**, 112: 14734-14739 (*corresponding authors; *Faculty of 1000 Recommendation*, doi: 10.3410/f.725926590.793512579; *Paper of the month in TAIR for Feb 2016*). *Impact Factor 9.7*
- Li L***, and Wurtele ES* (2015) The QQS orphan gene of Arabidopsis modulates carbon and nitrogen allocation in soybean. **Plant Biotechnology Journal**, 13: 177-187 (*corresponding authors). *Impact Factor 6.1*
- Li L***, Hur M, Lee J, Zhou WX, Song Z, Ransom N, Demirkale Y, Nettleton D, Westgate M, Arendsee Z, Iyer V, Shanks J, Nikolau BJ, and Wurtele ES* (2015) A systems biology approach toward understanding seed composition in soybean. **BMC Genomics**, 16 (Suppl 3): S9 (*corresponding authors). *Impact Factor 3.9*
- Jiang F, An C, Bao Y, Zhao X, Jernigan R, Lithio A, Nettleton D, **Li L**, Wurtele E, Nolan L, Lu C, and Li G (2015) ArcA Controls Metabolism, Chemotaxis and Motility Contributing to the Pathogenicity of Avian Pathogenic *E. coli*. **Infection and Immunity**, 83: 3545-3554. *Impact Factor 3.6*
- Arendsee Z, **Li L***, and Wurtele ES* (2014) Coming of age: orphan genes in plants. **Trends in Plant Science**, 19: 698-708 (*corresponding authors; *Chosen Top 10 Editorial Board Favorites 2014*). *Impact Factor 10.9*
- Hur M, Cambell AA, Almeida-de-Macedo M, **Li L**, Ransom N, Jose A, Crispin M, Nikolau BJ, and Wurtele ES (2013) A global approach to analysis and interpretation of metabolic data for plant natural product discovery. **Natural Product Reports**, 30: 565-583. *Impact Factor 11.0*
- Ngaki MN, Louie GV, Philippe RN, Manning G, Pojer F, Bowman ME, **Li L**, Larsen E, Wurtele ES, and Noel JP (2012) Evolution of the chalcone isomerase fold from fatty acid-binding to stereospecific enzyme. **Nature**, 485: 530-533. *Impact Factor 38.1*

- Zhang L, Berleant D, Wang Y, **Li L**, Cook D, and Wurtele ES (2012) BirdsEyeView: graphical overviews of experimental data. **BMC Bioinformatics**, 13: S11. *Impact Factor 2.4*
- Feng YP, Hurst J, Almeida-De-Macedo M, Chen X, **Li L**, Ransom N, and Wurtele ES (2012) A massive human co-expression-network and its medical applications. **Chemistry & Biodiversity**, 9: 868-887. *Impact Factor 1.4*
- Li X, Ilarslan H, Brachova L, Qian HR, **Li L**, Che P, Wurtele ES, and Nikolau BJ (2011) Reverse genetic analysis of the two biotin-containing subunit genes of the heteromeric acetyl-CoA carboxylase in *Arabidopsis thaliana* indicates a unidirectional functional redundancy. **Plant Physiology**, 155: 293-314. *Impact Factor 6.3*
- Jia M, **Li L**, Boggess E, Wurtele ES, and Dickerson JA (2010) Visualizing multivariate hierarchic data using enhanced radial space-filling layout. In: **Advances in Visual Computing**, Volume 6453. Berlin/Heidelberg, Germany: Springer, 350-360. doi: 10.1007/978-3-642-17289-2_34.
- Li L**, Foster C, Gan Q, Nettleton D, James MG, Myers AM, and Wurtele ES (2009) Identification of the novel protein QQS as a component of the starch metabolic network in *Arabidopsis* leaves. **Plant Journal**, 58: 485-498 (*Faculty of 1000 Recommendation, DOI: 10.3410/f.1162758.624354*). *Impact Factor 5.5*
- Li L**, Ilarslan H, James MG, Myers AM, and Wurtele ES (2007) Genome wide co-expression among the starch debranching enzyme genes *AtISA1*, *AtISA2*, and *AtISA3* in *Arabidopsis thaliana*. **Journal of Experimental Botany**, 58: 3323-3342. *Impact Factor 5.7*
- Wurtele ES, **Li L**, Berleant D, Cook D, Dickerson JA, Ding J, Hofmann H, Lawrence M, Lee EK, Li J, Mentzen W, Miller L, Nikolau BJ, Ransom N, and Wang Y (2007) MetNet: Systems Biology Software for *Arabidopsis*. In: Nikolau BJ and Wurtele ES, eds. **Concepts in Plant Metabolomics**, Chapter 10. Dordrecht, the Netherlands: Springer, 145-158.
- Dickerson JA, Berleant D, Du P, Ding J, Foster CM, **Li L**, and Wurtele ES (2005) Creating, modeling and visualizing metabolic networks. In: Hsinchun Chen, Sherrilynne S Fuller, Carol Friedman, and William Hersh, eds. **Medical informatics: knowledge management and data mining in biomedicine**, Chapter 17. New York, USA: Springer, 491-518.
- Li L**, Ji C, and You R (2001) Ultrastructural studies on megasporogenesis in *Triticum aestivum* L.. **Acta Scientiarum Naturalium Universitatis Pekinensis**, 37: 444-453.

Patents and Patent Applications

- Li L**, Wurtele ES (2018) Modification of transcriptional repressor binding site in NF-YC4 promoter for increased protein content and resistance to stress, Chinese Patent Application No. 201680022422.6, Chinese patent office.
- Li L**, Wurtele ES (2017) Materials and methods for modifying a biochemical component in a plant, U.S. App. 14/852,594, U.S. patent 9850494, U.S. patent office.
- Li L**, Wurtele ES (2015) Plant genes for increased protein content and resistance to stress, U.S. Provisional Pat. App. No. 62/244,131, U.S. patent office.
- Li L**, Wurtele ES (2015) Increasing protein content by modifying transcription factor, U.S. provisional Pat. App. No. 62/117,924, U.S. patent office.
- Li L**, Wurtele ES (2015) Materials and method for increasing a plant's resistance to stress, CIP App. No. 14/918,525, U.S. patent office.
- Li L**, Wurtele ES (2012) Materials and methods for modifying a biochemical component in a plant, U.S. App. 20120222167 A1, U.S. patent 9157091, U.S. patent office.

Active Grants

Industry funded project: High-protein crops, **PI: Ling Li**; \$240,000, 2018-2020.

Completed Grants

Iowa Soybean Association: Non-transgenic soybeans with broad plant disease resistance and high protein, **PI: Ling Li**; \$149,443, 2016-2018.

Iowa Soybean Association: Non-transgenic soybeans with broad plant disease resistance and high protein, **PI: Ling Li**; \$78,661, 2015-2016.

National Science Foundation MCB #0951170: Uncovering novel signaling interactions in plant metabolic networks, PI: Eve Wurtele, **Co-PI: Ling Li**, Taner Sen; \$920,000, 2010-2015.

Bridge funding from ISU Graduate School, **PI: Ling Li**, \$19,817, 2015.

United Soybean Board "Identify oil and meal traits and the genes that influence those traits to improve the quality and value of U.S. soybeans" program: High-protein soybeans, **PI: Ling Li**; \$299,015, 2011-2013.

Iowa State University Research Foundation: A molecular tool to increase the protein content of commercial crop, **PI: Ling Li**; \$30,000, 2011-2012.

Iowa State University Research Foundation: QQS role in seed composition determination, **PI: Ling Li**; \$10,000, 2011.

Iowa State University Research Foundation: Identification of the novel protein QQS as a component of the starch metabolic network, **PI: Ling Li**; \$3,672, 2011.

Invited Speaker (Conferences, Universities, Institutes and Industries)

Li L (2018) "From Arabidopsis to crops: the Arabidopsis QQS orphan gene modulates composition across species", **Women in Science Conference: International Conference on Genomics (ICG-13) satellite**, Shenzhen, China; "A molecular tool to increase protein content and broad disease resistance in crops", **ICG-13**, Shenzhen, China, **Academia Sinica Agricultural Biotechnology Research Center**, Taiwan, **the 7th National Plant Protein Research Conference & the 5th Meeting of Asia Oceania Agricultural Proteomics Organization (AOAPO)**, Jinan, China, **South China Agricultural University**, Guangzhou, China.

Li L (2018) "From Arabidopsis to crops: the QQS orphan gene modulates carbon and nitrogen allocation across species", **Department of Biochemistry, Molecular Biology, Entomology and Plant Pathology**, Mississippi State University, and **MidSouth Computational Biology and Bioinformatics Society (MCBIOS)**, Starkville, MS, USA.

Li L (2018) "The Arabidopsis QQS orphan gene modulates carbon and nitrogen allocation across species", and "A molecular tool to increase protein content and broad disease resistance in crops", **PAG** (Plant and Animal Genome Conference) 2018, San Diego, CA, USA.

Li L (2016) "The Arabidopsis QQS orphan gene improves crop seed quality", **Plant Protein Biology 2016 meeting**, Haikou, China.

Li L (2016) "The Arabidopsis QQS orphan gene modulates carbon and nitrogen allocation across species", **Plant Cell Signaling 2016**, Beijing, China.

Li L (2016) "A molecular tool to increase protein content and broad disease resistance in crops", **SIMPLOT**, ID, USA.

- Li L (2016) "A molecular tool to increase protein content and broad disease resistance in soybeans", **SOY2016 Molecular and Cellular Biology of the Soybean 16th Biennial Conference**, Columbus, OH, USA.
- Li L (2016) "The Arabidopsis QQS orphan gene modulates carbon and nitrogen allocation across species", **ASPB** (American Society of Plant Biology) 2016 meeting, Austin, TX, USA.
- Li L (2016) "From Arabidopsis to crops: the Arabidopsis QQS orphan gene modulates seed composition across species", **ICAR** (International Conference on Arabidopsis Research) 2016 meeting, Gyeongju, Korea.
- Li L (2016) "From Arabidopsis to crops: the Arabidopsis QQS orphan gene modulates seed composition across species". **Mississippi State University**, Starkville, MS, USA.
- Li L (2016) "From Arabidopsis to crops: the Arabidopsis QQS orphan gene modulates seed composition across species". **South China Agricultural University**, Guangzhou, China.
- Li L (2016) "From Arabidopsis to crops: the Arabidopsis QQS orphan gene modulates seed composition across species". **International Symposium on Topics in Plant Research**, Beijing, China.
- Li L (2016) "From Arabidopsis to crops: the Arabidopsis QQS orphan gene modulates seed composition across species". College of Biological Sciences, **China Agricultural University**, Beijing, China.
- Li L (2016) "A molecular tool to increase protein content and broad disease resistance in soybeans". **Soybean Breeders Workshop**, St. Louis, MO, USA.
- Li L (2016) "The Arabidopsis QQS orphan gene modulates carbon allocation across species". **PAG** (Plant and Animal Genome Conference) 2016, San Diego, CA, USA.
- Li L (2015) "A molecular tool to increase protein content and broad disease resistance in crops". **ASA, CSSA and SSSA** (American Society of Agronomy, Crop Science Society of America, and Soil Science Society of America) 2015 Meeting, Minneapolis, MN, USA.
- Li L (2015) "From Arabidopsis to crops: the Arabidopsis QQS orphan gene modulates seed composition across species". **University of Kentucky**, Lexington, KY, USA.
- Li L (2015) "The Arabidopsis QQS orphan gene modulates carbon allocation across species". **ICAR** (International Conference on Arabidopsis Research) 2015 meeting, Paris, France.
- Li L (2015) "The Arabidopsis QQS orphan gene modulates carbon allocation across species". **Wesleyan University**, Middletown, CN, USA.
- Li L (2015) "The Arabidopsis QQS orphan gene modulates carbon allocation across species". **Auburn University**, Auburn, AL, USA.
- Li L (2015) "Transgenic biotechnology". **US Soybean Export Council**, Beijing, China.
- Li L (2014) "An Arabidopsis orphan gene modulates carbon allocation across species". **Institute of Crop Science, Chinese Academy of Agricultural Sciences**, Beijing, China.
- Li L (2014) "An Arabidopsis orphan gene modulates carbon allocation across species". **Institute of Hydrobiology, Chinese Academy of Sciences**, Wuhan, China.
- Li L (2014) "Systems biology approach to understand seed composition". **ISBRA2014** (the 10th International Symposium on Bioinformatics Research and Applications), Zhangjiajie, China.
- Li L (2014) "An Arabidopsis orphan gene modulates carbon allocation across species". **The 6th International Symposium on Frontiers in Agriculture Proteome Research**, Harbin, Heilongjiang, China.
- Li L (2014) "High-protein soybeans". **United Soybean Board Composition Workshop**, St. Louis, MO, USA.

- Li L** (2013) "Uncovering novel signaling interactions in plant metabolic networks". **Southwest University**, Chongqing, China.
- Li L** (2012) "Uncovering novel signaling interactions in plant metabolic networks". Genome Center of Wisconsin, **University of Wisconsin – Madison**, WI, USA.
- Li L** (2012) "Uncovering novel signaling interactions in plant metabolic networks". **Gordon Conference 2012 -Plant Molecular Biology**, Holderness, NH, USA.
- Li L** (2012) "Uncovering novel signaling interactions in plant metabolic networks". College of Biological Sciences, **China Agricultural University**, Beijing, China.
- Li L** (2012) "Uncovering novel signaling interactions in plant metabolic networks". The Institute of Botany, **Chinese Academy of Sciences**, Beijing, China.
- Li L** (2012) "Uncovering novel signaling interactions in plant metabolic networks". The School of Life Sciences, **Peking University**, Beijing, China.
- Li L** (2011) "Uncovering novel signaling interactions in plant metabolic networks". **ASPB** (American Society of Plant Biology) 2011 meeting, Minneapolis, MN, USA.
- Li L** (2011) "Uncovering novel signaling interactions in plant metabolic networks". **ICAR** (International Conference on Arabidopsis Research) 2011 meeting, Madison, WI, USA.
- Li L** (2008) "Identification of the novel protein QQS as a component of the starch metabolic network in Arabidopsis leaves". School of Life Sciences, **Peking University**, Beijing, China.
- Li L** (2007) "Down-regulation of a novel small gene confers a starch-excess phenotype in Arabidopsis". **ASPB** (American Society of Plant Biology) 2007 meeting, Chicago, IL, USA.
- Li L** (2007) "Systems biology approach to understand seed composition". **NPLC** (National Plant Lipid Conference) 2007 meeting, Fallen Leaf, CA, USA.

Poster Presentation

- O'Conner S, Zheng W, **Li L**, Study of orphan gene sheds light on gene evolution, ICAR (International Conference on Arabidopsis Research) 2017 meeting, St. Louis, MO, USA.

Honors and Awards

- ASPB (American Society of Plant Biology) 2018 meeting travel award, Montreal, Canada.
- Mississippi State University College of Arts & Sciences 2018 Academic Excellence award.
- ISU Faculty Foreign Travel Grant 2015, for ICAR (International Conference on Arabidopsis Research) 2015 meeting, Paris, France.
- ASPB (American Society of Plant Biology) 2015 meeting travel award, Minneapolis, MN, USA.
- ASPB (American Society of Plant Biology) 2014 meeting travel award, Portland, OR, USA.
- 10th International Symposium on Bioinformatics Research and Applications (ISBRA) 2014 conference travel fellowship, Zhangjiajie, China.
- Iowa State University Professional & Scientific Excellence Award, 2013. Awarded to achieved excellence in the research.
- Posttranslational modification networks Gordon Research Conference travel award, 2013. Awarded to early career PIs.
- ICAR (International Conference on Arabidopsis Research) travel award, 2013. Awarded to early career PIs (limited to only receive this award twice in lifetime).

ICAR (International Conference on Arabidopsis Research) travel award, 2012. Awarded to early career PIs.

ICLGG5 (International Conference on Legume Genomics and Genetics) travel award, 2010. Awarded to limited number of junior scientists from USA to cover meeting registration.

ICLGG4 (International Conference on Legume Genomics and Genetics) travel award, 2008. Funds from NSF awarded to limited number of junior scientists from USA to cover meeting registration).

NPLC (National Plant Lipid Conference) travel award, 2007. Awarded to a limited number of young researchers, to cover meeting registration and lodging costs.

Iowa State University Research Excellence Award, 2006. Awarded to top 10% of graduating doctoral students for outstanding research/creativity.

Fung Award, 2006. Award for graduate student achievement in pursuit of research in department of GDCB.

Dale W. Young and W.E. Loomis Award, 2005. Award for graduate student achievement in pursuit of research in department of GDCB.

PACE Award (Premium for Academic Excellence) – Iowa State University, 2000. Awarded to outstanding incoming graduate students.

Selected News Reports:

“The future is now for CRISPR technology” – by Iowa Soybean Association in March 2018, <https://www.iasoybeans.com/news/articles/the-future-is-now-for-crispr-technology/>

“The amazing QQS!” – by GARNet Community in July 2016, <http://blog.garnetcommunity.org.uk/amazing-qqs-gene/>

“QQS orphan gene: a new avenue for sustainable protein sources?” - by NSF Division of Molecular and Cellular Biosciences on April 8, 2016: <https://mcbblog.nsfbio.com/2016/04/08/sharing-science-qqs-orphan-gene-a-new-avenue-for-sustainable-protein-sources/>

“‘Orphan gene’ may have potential to boost protein value of crops” - by Iowa State University News in Nov 2015 <http://www.news.iastate.edu/news/2015/11/13/orphangene>. Taken up by other online websites, such as ScienceDaily: <http://www.sciencedaily.com/releases/2015/11/151113120253.htm>, and Sequencing China, Nov 2015, <http://seq.cn/portal.php?mod=view&aid=18996>

“Dr. Ling Li from Iowa State University visits IHB” - by Institute of Hydrobiology, Chinese Academy of Sciences in July 2014, http://english.ihb.cas.cn/education/snews/201407/t20140718_124662.html

“Researcher looks for genes that control soybean protein content” - by United Soybean Board in Feb 2014, <http://unitedsoybean.org/article/genes-that-control-soybean-protein-content/>

News report by WHOTV news; video taped by Roger Riley; part of the taped video is available online, <https://www.youtube.com/watch?v=BqEwjhZPk4A>

“Weed brings protein power to soybeans” - by Iowa Public Radio in April 2011, <http://harvestpublicmedia.org/blog/526/weed-brings-protein-power-soybeans/5#.VKo2wivF-So>

“Researchers put gene in soybean to increase protein” - by Radiolowa in April 2011, <http://www.radioiowa.com/2011/04/18/researchers-put-gene-in-bean-to-increase-protein/>

"Starch-controlling gene fuels more protein in soybean plants" - by Iowa State University News in April 2011, <http://www.news.iastate.edu/news/2011/apr/wurtele>. Taken up by >30 online websites.

Teaching

Fall 2013-2016: BIOL 212 Lab (**Principles of Biology Lab II**, 400 undergraduate students in fall and 900 in spring), Co-faculty in charge, lab course for introduction to the chemical, molecular, and cellular basis of life, form and function of microbial, plant, and animal life.

Spring 2016: PLBIO 696 (**Graduate Student/faculty Seminar in Plant Biology**, 21 graduate students), to improve the ability of the graduate students to evaluate and present scientific presentation in plant biology.

2008-2016: BIOL 490 (**Independent Study**) and BIOL 499 (**Independent Research**), 13 undergraduate students, created course syllabus, supervised research, data interpretation, and work with students on effective oral and written presentation of results.

Fall 2013 and Spring 2014: GENET 690 (**Graduate Student Seminar in Genetics**, 25 graduate students), to improve the ability of the graduate students to evaluate and present scientific presentation.

Fall 2011: GDCB 513 (**Plant Metabolism**, Section Instructor, 15 graduate students), particularly respiration, lipids/fatty acids, isoprenoids, alkaloids, and regulation of metabolism.

2007-2011: GDCB 512 (**Plant Growth Regulation**, Section Instructor, 10 graduate students), discussed original research articles on gibberellin metabolism; presented MetNet software workshops, taught students using the software to identify genes for hypothesis development.

Aug 17, 2011: Organized University Teaching Seminar for incoming teaching assistants, prepared and presented three seminars: "International Issues and Welcome to Ames", "Hands on with Students: Lab work, Independent Study, and being a boss", and "Time Management".

Mentoring

Spring 2018: Mississippi School for Mathematics and Science research program mentor.

Spring 2016: mentor for 1st year undergraduate students in **Honors Mentor Program**, Iowa State University.

2015: Iowa State University Mentoring Program for **New Underrepresented (URM)** Graduate Students, listen to their concerns about starting as a new graduate student (teaching, courses, research, new community), and offer suggestions, to help new graduate student with transition.

2007-2011: Preparing Future Faculty (PFF), participated in PFF program, including presenting seminars, mock classes, teaching approaches, preparation of class materials.

2002-present: Trained and/or supervised 34 undergraduate students, 28 graduate students, 18 postdocs/staff and 5 visiting scholars in hypothesis development and experimental design, molecular and computational techniques, helped with troubleshooting, interpreting and evaluating results; Supervised 9 high school students and teachers in research projects, stimulated their interest in science.

Graduate Advisor of: Seth O'Conner, Rewan Tanvir, Dallas Jones.

Postdoctoral Scholar Mentor: six scholars.

Visiting Scholar Host: five, Wenli Ping, Institute of Tobacco Research, Henan Academy of Agricultural Sciences; Wenying He, College of Chemistry and Chemical Engineering, Hainan Normal University; Xuchu Wang, Institute of Tropical Bioscience and Biotechnology, Chinese Academy of Tropical Agricultural Sciences; Yanbing Zhu, Jimei University; Miroslav Soták, Pavol Jozef Šafárik University in Košice.

Synergistic Activities

Member: American Society of Plant Biologists: *PlantingScience* scientist-mentor for student-centered plant investigations that integrate scientific practices and big ideas in biology and meet the guidelines in the Next Generation Science Standards; nominated to be on North American Arabidopsis Steering Committee.

Member: American Society of Agronomy; Crop Science Society of America; Soil Science Society of America: Participated the annual conference, exhibited my research and exchange with others.

Panelist:

NSF Graduate Research Fellowship Program 2018, Genetics, Genomics & Proteomics Panel

1890 Institution Research Capacity Building Grants (CBG) Program, NIFA (National Institute of Food and Agriculture), USDA

evaluated MSU Biology Graduate Teaching Assistants on August 17, 2018

Exploratory Research proposal for NIFA, the Exploratory Research program of the Agriculture and Food Research Initiative (AFRI)

Organization Committee: Plant Protein Biology 2016 meeting, Haikou, China.

Topic Editor: topic "Carbon allocation", 2016, *Frontiers in Plant Science*.

Journal Reviewer (for 17 Journals): Trends in Plant Science; PLOS Genetics; Plant Physiology; BBA - Gene Regulatory Mechanisms; Scientific Reports; BMC Plant Biology; Frontiers in Plant Science; BMC Genomics; The FEBS Journal; Crop Science; Plant Cell Reports; Infection, Genetics and Evolution; Plant Growth Regulation; and In Vitro Cellular and Developmental Biology–Plant.

Reviewer: National Science Bowl middle school science questions (2012).

Biotechnology Education: invited as the scientific expert by the United Soybean Export Council, 6-day workshop, Beijing, China (2015).