

Meng Chen, Ph.D., Principal Investigator

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EDUCATION

Postdoc The Salk Institute, 1999-2007.
Ph.D. Iowa State University, Plant Physiology, 1999, with distinction.
B.S./M.S. Iowa State University, Biochemistry, 1994.
FR/SO Nankai University (China), Biochemistry, 1989-1991.

RESEARCH AND PROFESSIONAL EXPERIENCE

2017-present Associate Professor, Department of Botany and Plant Sciences, UC Riverside.
Member, CMDDB, GGB, and BMB Graduate Programs.
2015-2017 Assistant Professor, Department of Botany and Plant Sciences, UC Riverside.
2008-2015 Assistant Professor, Department of Biology, Duke University.
2005-2007 Senior Research Associate, Dr. Joanne Chory lab, HHMI/The Salk Institute.
1999-2005 Research Associate, Dr. Joanne Chory lab, HHMI/The Salk Institute.
1994-1999 Research Assistant, Iowa State University. Advisor: Dr. Steven R. Rodermel.
1992-1994 Research Assistant, Iowa State University. Advisor: Dr. Herbert J. Fromm.
1992 Research Assistant, Iowa State University. Advisor: Dr. Donald J. Graves.

HONORS AND AWARDS

2016- Editorial Board Member, Journal of Biological Chemistry.
2016 Regents Faculty Development Award, UC Riverside.
2015 Chair, Light and Temperature session, ASPB annual meeting, Minneapolis, MN
2015 Early Career Award, International Symposium on Plant Photobiology.
2012 Chair, Cell Signaling session, ASPB annual meeting, Austin, TX
2010 Chair, Light Signaling session, ASPB annual meeting, Montreal, Canada
1999 Doctoral Research Excellence Award, Iowa State University.
1999 Doctoral Teaching Excellence Award, Iowa State University.

GRANTS

Current Support

2010-2020 NIH 2R01GM087388-07: Function of photobodies in plant light signaling. (PI)
2017 NIH 2R01GM087388-08S1, Equipment Supplement. (PI)

Past Support

2016 NIH 3R01GM087388-06S1, S2, Equipment Supplement. (PI)
2013-2016 NIH R01-GM087388-04S1, Macromolecular Interaction Competitive Revision. (PI)

- 2011-2015 NSF IOS-1051602: Uncover HEMERA-mediated phytochrome signaling mechanisms in *Arabidopsis*. (PI)
- 2012-2014 NIH R01GM087388-02S1, Diversity Supplement. (PI)
- 2013 NIH R01GM087388-03S1. Supplement. (PI)
- 2012-2013 NSF IOS-1237675, REU. (PI)
- 2011-2012 NSF IOS-1135065, REU. (PI)
- 2011 NIH R01GM087388-01S1 Supplement. (PI)
- 2009-2010 NSF IOS-0923722: Mechanistic links between phytochrome signaling and chloroplast differentiation. (PI)

PUBLICATIONS

23. Qiu, Y., Pasorek, E.K., Reddy, A.K., Nagatani, A., Ma, W., Chory, J., Chen, M. (2017) Mechanism of early light signaling by the carboxy-terminal output module of *Arabidopsis* phytochrome B. **Nat Commun** 8(1):1905. doi: 10.1038/s41467-017-02062-6.
22. Nevarez, P.A., Qiu, Y., Inoue, H., Yoo, C., Benfey, P.N., Schnell, D.J., Chen, M. (2017) Mechanism of dual-targeting of the phytochrome signaling component HEMERA/pTAC12 to plastids and the nucleus. **Plant Physiol** 173(4):1953-66.
21. Huang, H., Yoo, C., Bindbeutel, R.K., Goldsworthy, J., Tielking, A., Alvarez, S., Naldrett, M.J., Evans, B., Chen, M., Nusinow, D.A. (2016) PCH1 integrates circadian and light-signaling pathways to control photoperiod-responsive growth in *Arabidopsis*. **eLife** 5:e13292.
20. Qiu, Y., Li, M., Van Buskirk, E.K., Long, L., Shi, Y., Galvão, R.M., Chou, C.L., Sun, A.Y., Zhang, Y.C., Jiang, A., Chen, M. (2015) HEMERA couples the proteolysis and activity of PHYTOCHROME INTERACTING FACTORS. **Plant Cell** 27(5):1409-27.
19. Van Buskirk, E.K., Reddy, A.K., Nagatani, A., Chen, M. (2014) Photobody localization of phytochrome B is tightly correlated with prolonged and light-dependent inhibition of hypocotyl elongation in the dark. **Plant Physiol** 165(2):595-607.
18. Feng, C.-M., Qiu, Y., Van Buskirk, E.K., Yang, E.J., Chen, M. (2014) Light-regulated gene repositioning in *Arabidopsis*. **Nat Commun** 5:3027 doi: 10.1038/ncomms4027.
17. Galvão, R.M., Li, M., Kothadia, S.M., Haskel, J.D., Decker, P.V., Van Buskirk, E.K., Chen, M. (2012) Photoactivated phytochromes interact with HEMERA and promote its accumulation to establish photomorphogenesis in *Arabidopsis*. **Genes Dev** 26(16):1851-63.
16. Van Buskirk E.K., Decker, P.V., Chen, M. (2012) Photobodies in light signaling. **Plant Physiol** 158(1):52-60.
15. Chen, M.*, Chory, J.* (2011). Phytochrome signaling mechanisms and the control of plant development. **Trends Cell Biol** 21(11):664-71 (* Corresponding author).
14. Chen, M.*, Galvão, R.M., Li, M., Burger, B., Bugea, J., Bolado, J., Chory, J.* (2010). *Arabidopsis* HEMERA/pTAC12 initiates photomorphogenesis by phytochromes. **Cell** 141(7): 1230-1240 (* Corresponding author).
13. Fankhauser C.*, Chen, M. (2008). Transposing phytochrome into the nucleus. **Trends Plant Sci** 13(11):596-601 (* Corresponding author).
12. Chen, M. (2008). Phytochrome nuclear body: an emerging model to study interphase nuclear dynamics and signaling. **Curr Opin Plant Biol** 11(5):503-8.

11. Chen, M., Tao, Y., Lim, J., Shaw, A., Chory, J. (2005). Regulation of phytochrome B nuclear localization through light-dependent unmasking of nuclear localization signals. ***Curr Biol*** 15(7):637-42.
10. Chen, M., Chory, J., Fankhauser, C. (2004). Light signal transduction in higher plants. ***Annu Rev Genet*** 38:87-117.
9. Chen, M., Schwab, R., and Chory, J. (2003). Characterization of requirements for localization of phytochrome B to nuclear bodies. ***Proc Natl Acad Sci USA*** 100(24):14493-14498.
8. Wang, Z.Y., Nakano, T., Gendron, J., He, J., Chen, M., Vafeados, D., Yang, Y., Fujioka, S., Yoshida, S., Asami, T., Chory, J. (2002). Nuclear-localized BZR1 mediates brassinosteroid-induced growth and feedback suppression of brassinosteroid biosynthesis. ***Dev Cell*** 2(4):505-513.
7. The *Arabidopsis* genome initiative (Chen, M. and Chory, J.). (2000). Analysis of the genome sequence of the flowering plant *Arabidopsis thaliana*, ***Nature*** 408:796-815.
6. Chen M., Choi, Y., Voytas, D.F., Rodermel, S. (2000). Mutations in the *Arabidopsis* VAR2 locus cause leaf variegation due to the loss of a chloroplast FtsH protease, ***Plant J*** 22(4):303-313.
5. Chen, M., Jensen, M., Rodermel, S. (1999). The *yellow variegated* mutant of *Arabidopsis thaliana* is plastid autonomous and delayed in chloroplast biogenesis. ***J Hered*** 90:207-14.
4. Martin, B.L., Luo, S., Kintanar, A., Chen, M., and Graves, D. J. (1998). Effect of citrulline for arginine replacement on the structure and turnover of phosphopeptide substrates of protein phosphatase-1. ***Arch Biochem Biophys*** 359:179-191.
3. Chen, M., Chen, L., and Fromm, H.J. (1994). Replacement of glutamic acid 29 with glutamine leads to a loss of cooperativity for AMP with porcine fructose-1,6-bisphosphatase. ***J Biol Chem*** 269:5554-5558.
2. Chen, L., Hegde, R., Chen, M., and Fromm, H.J. (1993). Site-specific mutagenesis of the metal binding sites of porcine fructose-1,6-bisphosphatase. ***Arch Biochem Biophys*** 307:350-354.
1. Burton, V.A., Chen, M., Ong, W.C., Ling, T., Fromm, H.J., and Stayton, M.M. (1993). High-level expression of porcine fructose-1,6-bisphosphatase in *E. coli*: purification and characterization of the enzyme. ***Biochem Biophys Res Commun*** 192:511-517.

INVITED SEMINARS AND SYMPOSIA

48. Plenary Talk, Western Regional ASPB Meeting, Fullerton, CA (2018)
47. International Symposium on Plant Photobiology, Matsue, Japan (2018)
46. Workshop in Genetics – The 4D Nucleus, Interdepartmental Genetics and Genomics Program, Iowa State University, Ames, IA (2017)
45. Symposium on Plant Development, Signaling, and Epigenetics, ShenZhen University (2017)
44. XIX International Botanical Congress, ShenZhen, China (2017)
43. Nuclear Architecture & Control of Cell Fate session, Society for Developmental Biology 76th Annual Meeting, Minneapolis, MN (2017)
42. 13th International Conference on Tetrapyrrole Photoreceptors of Photosynthetic Organisms, Chicago, IL (2017)
41. Carnegie Institution for Science, Department of Plant Biology, Stanford, CA (2017)
40. Department of Cell Biology and Molecular Genetics, University of Maryland, College Park, MD (2016)
39. Walter and Helen Parke Loomis Minisymposium, Iowa State University, Ames, IA (2016)
38. Salk Seminar, The Salk Institute, La Jolla, CA (2016)

37. Joanne Chory 60th Birthday Symposium, the Salk Institute, La Jolla, CA (2016)
36. Joint Seminars in Molecular Biology, UC Davis, CA (2016)
35. CEPCEB Annual Awards Symposium, UC Riverside, Riverside, CA (2015)
34. 11th International Congress on Plant Molecular Biology, Iguazu Falls, Argentina/Brazil. (2015)
33. 2015 ASPB annual meeting, Minneapolis, MN. Light and Temperature session (Chair) (2015)
32. International Symposium on Plant Photobiology, Austin, TX (2015)
31. Department of Plant & Microbial Biology, NC State University, Raleigh, NC (2015)
30. University of Texas at Austin, MCDB, Austin, TX (2013)
29. University of North Texas, Dept of Biological Sciences, Denton, TX (2013)
28. International Symposium on Plant Photobiology, Edinburgh, UK (2013)
27. Plant Biology Program, UMass Amherst, MA. (2013)
26. 10th International Congress on Plant Molecular Biology, Jeju, Korea. (2012)
25. ASPB annual meeting, Austin, TX. Cell Signaling session (Chair). (2012)
24. University of North Carolina at Chapel Hill, Dept. of Biology, Chapel Hill, NC. (2012)
23. 26th Annual Plant Molecular Biology Retreat, Wrightsville Beach, NC (2012)
22. Keystone Symposium on Nuclear Events in Plant Gene Expression and Signaling, Taos, NM. (2012)
21. Strategies of plants under Global Changing Environments, Kurashiki, Japan. (2011)
20. Michigan State University, Plant Research Laboratory, East Lansing, MI. (2011)
19. Institute of Genetics and Developmental Biology, Beijing, China. (2011)
18. Fudan University, Shanghai, China. (2011)
17. International Symposium on Plant Photobiology, Beijing, China. (2011)
16. Science and Technology University of China, Hefei, China. (2011)
15. Duke University, Department of Biochemistry, Durham, NC. (2011)
14. North Carolina State University, Department of Genetics, Raleigh, NC. (2010)
13. ASPB annual meeting, Montreal, Canada. Light Signaling session (Chair). (2010)
12. University of Southern California, Department of Molecular and Computational Biology, Los Angeles, CA. (2010)
11. ASPB annual meeting, Hawaii. (2009)
10. Dynamic Organization of Nuclear Function, Cold Spring Harbor Laboratory, Long Island, NY. (2008)
9. ASPB annual meeting, Chicago, IL. (2007)
8. Department of Biology, Duke University, Durham, NC (2007)
7. Worcester Polytechnic Institute, Worcester, MA (2007)
6. Institute of Botany, the Chinese Academy of Sciences, Beijing, China. (2006)
5. Institute of Genetics and Developmental Biology, Chinese Academy of Sciences, Beijing, China. (2006)
4. Institute of Plant Physiology and Ecology, the Chinese Academy of Sciences, Shanghai, China. (2006)
3. Gordon Conference on Photosensory Receptors & Signal Transduction, Il Ciocco, Italy. (2006)

2. International Plant Photobiology Meeting, Paris, France. (2006)
1. The Missouri Symposium on Plant Photobiology, Columbia, MO. (2001)

UNIVERSITY SERVICE

UC Riverside

- Plant Growth Environments Facility-Working Group, 2017.
- UCR Microscopy Core Advisory Committee, 2017-.
- Seminar Committee, Center for Plant Cell Biology, 2016-17.
- CMDB Graduate Admission Committee, 2016-18.
- Undergraduate Educational Advisory Committee, Department of Botany and Plant Sciences, 2015-18.
- Multidisciplinary Research Building 1 Planning Committee, 2015.

Duke

- Organizer, Duke Plant Biology Forum, 2008-2014.
- Plant Growth Facility Committee, Department of Biology, 2008-2014.
- Graduate Admission Committee, Department of Biology, 2008, 2010-2014.
- Curriculum Committee, Department of Biology, 2008-12.
- Executive Committee, Department of Biology, 2011-12.
- Seminar Committee, Department of Biology, 2011.

SCIENTIFIC AND PUBLIC SERVICE

- 2016- Editorial Board Member, Journal of Biological Chemistry.
- 2015 Chair, Light and Temperature session, ASPB annual meeting, Minneapolis, MN
- 2012 Chair, Cell Signaling session, ASPB annual meeting, Austin, TX
- 2010 Panel Member for the NSF Integrative Organismal Systems panel.
- 2010 Chair, Light Signaling session, ASPB annual meeting, Montreal, Canada
- 2008- Referee of grants and contracts for the following funding agencies: BARD, BBSRC, German Research Foundation, Hungarian Scientific Research Fund, NSF, and NSF of China.
- 2008- Referee for the following scientific journals: *Genes Dev*; *Nature*, *Nat Commun*, *Nat Plant*, *Plant Cell*, *Plant J*, *Plant Physiol*, *PLoS Genet*, *Proc Natl Acad Sci USA*, *Science*.

COURSES TAUGHT

UC Riverside

- Molecular Biology, Biol107A: S2016, W2017-18.
- Cell Biology, CMDDB200: W2017-18
- BPSC seminar, BPSC250: S2018

Duke

- Cell and Developmental Biology, Bio220: F2009-10, F2012-14.
- Cell Signaling and Diseases, Bio213: S2011, F2012-14.
- Developmental Genetics, Bio/CBI283: F2010-13.

Current Topics in Plant Biology, Bio295S: F2009.

Duke Plant Biology Forum, Bio717S: S2008-14.

Iowa State University

Genetics Lab, Gen301L: S1997.

ADVISING

UC Riverside

Project Scientist (2): Yongjian Qiu (current), Chan Yul Yoo (current).

Specialist (2): Joseph Hahm (current), Keunhwa Kim (current).

Postdoc (1): Xiaoteng Cai (current)

Graduate Student:

Rotation Student (5): Annie Giang (BMB, F16), Elizabeth Hann (BPSC, S18), Desiree Williams (CMDDB, S17), Ruth Jean Ae Kim (BPSC, F17), Kevin To (BPSC, F17).

Graduate Qualifying Exam Committee (10): Marschal Bellinger (BPSC, Carolyn Rasmussen advisee), Eva Hawara (Wenbo Ma advisee), Li Liu (BPSC, Xuemei Chen advisee), Pablo Martinez (BMB, Carolyn Rasmussen advisee), Alison Mills (BMB, Carolyn Rasmussen advisee), Paul Roche (BPSC, Linda Walling advisee), Ryan Schiefelbein (BMB, Paul Larsen advisee), Jacob Schrier (CMDDB, Xuan Liu advisee), Jessica Toth (BPSC, Jaimie Van Norman advisee), Ye Xu (Plant Pathology, Xuemei Chen advisee).

Graduate Dissertation Committee (6): Marschal Bellinger (BPSC, Carolyn Rasmussen advisee), Eva Hawara (Wenbo Ma advisee), Travis Lee (BPSC, Julia Bailey-Serres advisee), Li Liu (BPSC, Xuemei Chen advisee), Pablo Martinez (BMB, Carolyn Rasmussen advisee), Irma Ortiz (BPSC, Linda Walling advisee).

Undergraduate Researchers (4): Chris Cheng (W17-), Brooke Gomez (REU, 2016), Carisha Moore (S17-), Ngoc Tran (REU, 2017).

Duke

Postdoc (8): Peter Decker, Laura Dixon, Chunmiao Feng, Rafaelo Galvão, Meina Li, Yongjian Qiu, Yiting Shi, Chan Yul Yoo.

Graduate Student (4): Tao Ma (M.A. 2011), Andrew Nevarez (Ph.D. 2016), Elise Van Buskirk (Ph.D. 2014), Emily J. Yang (Ph.D. 2017).

Rotation Student (3): Benjamin Byeon (S2008), Ning Sui (F2011), Benjamin Stormo (F2011).

Undergraduates Independent Study (15): Brandon Chao (F2012-S2013), Charles Chen (F2009-S2010), Conrad Chou (S2011-S2012), Suny Gill (F2012-14), Jonathan Haskel (S2010-S2013), Anna Jiang (F2012-14), Sonya Kothadia (S2011-S2012), Mengyun Lu (2013-14), Vanessa Osman (F2013), Crystal Owens (S2012-F2012), Amit Reddy (F2009-S2011), Amanda Sun (S2009, S2011), Kristen Yang (F2008-S2009), Catherine Zhang (2013-15), Ruochen Zhu (S2011).

Graduate student committees (17): Scott Barish (UPGG), Benjamin Byeon (Biology), Yutao Chen (Biology), Heidi Cederholm (UPGG), Colleen Drapek (CMB), Andrew George (CMB), Yuanjie Jin (Biology), Fay-Wei Li (Biology), Ning Sui (Biology), Katherine Toll (UPGG), Ashley Troth (Biology), Manuel Valdes (UPGG), Wei Wang (Biology), Zheng Wang (UPGG), Jessica Wojtaszek (Biochem), Yan Xue (Biology), Mian Zhou (Biology), Paul Zurek (UPGG).