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Associate Professor

Department of Biochemistry and Molecular Biology

Oklahoma State University

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EDUCATION:

B.S, M.S. and Ph.D. (Ph.D. obtained in 1996) in Botany

Sri Krishnadevaraya University, Anantapur, India

Ph.D. Advisor: Dr. Chinta Sudhakar

WORK EXPERIENCE:

Post-doctoral fellow (Nov 1997-June 2000)

Department of Plant Sciences, Weizmann Institute of Science, Israel

Advisor: Dr. Hillel Fromm

Post-doctoral fellow (July 2000-Jan 2003)

Department of Botany, University of Bonn, Germany

Advisor: Dr. Dorothea Bartels

Research Associate (Feb 2003-Dec 2003)

Department of Plant Sciences, University of Tucson, USA

Advisor: Dr. Jian-Kang Zhu

Assistant Specialist & Visiting Professional Researcher (Jan 2004-June 2006)

Department of Botany and Plant Sciences, University of California, Riverside, USA

Advisor: Dr. Jian-Kang Zhu

Assistant Professor (July 2006- June 2011)

Department of Biochemistry and Molecular Biology, Oklahoma State University

Associate Professor (July 2011- June 2016)

Department of Biochemistry and Molecular Biology, Oklahoma State University

Professor (July 2016 -)

Department of Biochemistry and Molecular Biology, Oklahoma State University

AWARDS AND HONORS

- 2016 Oklahoma State University President's Fellows Faculty Research Award
- 2015 The Sarkeys Distinguished Professor Award, DASNR, OSU
- 2014 Highly Cited Researcher (Thomson Reuters) for the period 2002-2013
- 2014 President's Cup for Creative Interdisciplinary Research at OSU (2nd Place)
- 2013 President's Cup for Creative Interdisciplinary Research at OSU (1st Place)
- 2011 USDA-NIFA Partnership Award for Mission Integration

- 2000 – 2002 Alexander-Von-Humboldt Fellowship, University of Bonn, Germany.
 1998 – 1999 Sir Charles Clore Post-doctoral Fellowship, Weizmann Institute, Israel.
 1997 – 1998 Feinberg Post-doctoral Fellowship, Weizmann Institute of Science, Israel.
 1996 – 1997 Research Associate, Council of Scientific and Industrial Research, India.
 1995 DAAD Fellowship for six months, University of Wurzburg, Germany.
 1994 – 1996 Senior Research Fellowship, Council of Scientific and Industrial Research, India.

RESEARCH GRANTS

Since 2006, received 17 research grants amounting more than **\$2.3 million** for various research projects from the NSF, USDA, OCAST, OTRC and Noble Foundation

PUBLICATIONS AND SCHOLARLY ACTIVITIES

1. Varsheny R, Shi, C., Thudi, M., Mariac, C., Wallace, J., Zhang, H., Ghatak, A., Chaturvedi, P., Zhao, Y., Wang, X., Rathore, A., Wang, J., Srivastava, R., Chitikineni, A., Fan, G., Punnuri, S., Gupta, S., Jiang, Y., Couderc, M., Bajaj, P., Katta, M., Paudel, D., Mungra, K., Chen, W., Harris-Shultz, K., Garg, V., Desai, N., Doddamani, D., Kane, N., Conner, J., Subramaniam, S., Yadav, O., Berthouly-Salazard, C., Falalou, H., Liang, X., Clotault, J., Gueye, M., Sunkar, R., Dupuy, C., Sparvoli, F., Cheng, S., Mahala, R., Singh, B., Yadav, R., Lyons, E., Datta, S., Hash, C., Devos, K., Buckler, E., Bennetzen, J., Paterson, A., Ozias-Akins, P., Grando, S., Wang, J., Reif, J., Weckwerth, W., Liu, X., Vigouroux, Y., Xu, X. Cropping harsh environments: insights from the pearl millet genome, *Nature* (under revision)
2. Hivrale, V., Zheng, Y., Puli, C.O.R., Jagadeeswaran, G., Kakani, G., Gowdu, K., Barakat, A. and Sunkar, R. (2016). Characterization of drought- and heat-responsive microRNAs in switchgrass. *Plant Science*, 242, 214-223
3. Yaish, M.W., Sunkar, R., Zheng, Y., Ji, B., Farooq, S.A., Al-Yahyai, R. (2015) A Genome-Wide Identification of the miRNAome in Response to Salinity Stress in Date palm (*Phoenix dactylifera* L.) *Frontiers in Plant Science* 6:946.
4. Ming, R., Van Buren, R., Wai, C.M., Tang, H., Schatz, M.C., Bowers, J.E., Lyons, E., Wang, M-L., Chen, Biggers, E., Zhang, J., Huang, L., Zhang, L., Miao, W., Zhang, J., Ye, Z., Miao, C., Lin, Z., Wang, H., Zhou, H., Yim, W.C., Priest, H.D., Zheng, C., Woodhouse, M., Edger, P.P., Guyot, R., Guo, H-B., Guo, H., Zheng, G., Singh, R., Sharma, A., Min, X., Zheng, Y., Lee, H., Gurtowski, J., Sedlazeck, F., Harkess, A., McKain, M.R., Liao, Z., Fang, J., Liu, J., Zhang, X., Zhang, Q., Hu, W., Qin, Y., Wang, K., Chen, L-Y., Shirley, N., Lin, Y-R., Liu, L-Y., Hernandez, A.G., Wright, C.L., Bulone, V., Tuskan, G.A., Heath, K., Zee, F., Moore, P.H., Sunkar, R., Leebens-Mack, J-H., Mockler, T., Bennetzen, J.L., Freeling, M., Sankoff, D., Paterson, A.H., Zhu, X., Yang, X., Andrew, J., Smith, C., Cushman, J.C., Paull, R.E.,

- Yu, Q (2015). The pineapple genome and the evolution of CAM photosynthesis, *Nature Genetics*, 47: 1435-1442.
- | 5. Singh, S., Zheng, Y., Jagadeeswaran, G., Sabith, J.E., Sikand, K., Gupta, S., and Sunkar, R., Shukla, G.C. Deep Sequencing of Small RNA Libraries from Human Prostate Epithelial and Stromal Cells Reveal Distinct Pattern of MicroRNAs Primarily Predicted to Target Growth Factors. *Cancer Letters* 371, 262–273
 - | 6. Lomate PR., Sangole KP., Sunkar, R and Hivrale V. (2015). Superoxide dismutase activities in the midgut of *Helicoverpa armigera* larvae: Identification and biochemical properties of a manganese superoxide dismutase. *Open Access Insect Physiology* 2015; 5
 - | 7. Formey, D., Iñiguez, L.P., Pelàez, P., Sunkar, R., Sanchez, F., Reyes, J.L., and Hernandez, G. (2015). Genome-wide identification of the *Phaseolus vulgaris* sRNAome using small RNA and degradome sequencing. *BMC Genomics* 16, 423.
 - | 8. Panda SK and Sunkar R. (2015). Nutrient- and other stress-responsive miRNAs in plants: Role for thiol-based redox signaling. *Plant Signaling and Behavior* 10:4, e1010916.
 - | 9. Srivastava, S., Zheng, Y., Kudapa, H., Jagadeeswaran, G., Hivrale, V., Varshney, R.K. and Sunkar, R. (2015). High-throughput sequencing of small RNA component of leaves and inflorescence revealed conserved and novel miRNAs as well as phasiRNA loci in chickpea. *Plant Science* 235: 46-57.
 - | 10. Jagadeeswaran, G., Li, Y-F. and Sunkar, R. (2014). Redox signaling mediates the expression of a sulfate-deprivation-inducible miR395 in *Arabidopsis*. *Plant Journal*, 77: 85-96.
 - | 11. Zheng, Y., Shengpeng, W and Sunkar, R. (2014). Genome-Wide Discovery and Analysis of Phased Small Interfering RNAs in Chinese Sacred Lotus. *PLoS One*, DOI:10.1371/journal.pone.0113790
 - | 12. Zhang, X., Zheng, Y., Jagadeeswaran, G., Sunkar, R, and Jiang, H. (2014). Identification of conserved and novel microRNAs in *Manduca sexta* and their possible roles in the expression regulation of immunity-related genes. *Insect Biochemistry and Molecular Biology*, 47C:12-22.
 - | 13. Ghorecha, V., Patel, K., Ingle, S., Sunkar, R. and Krishnayya, N.S.R (2014). Analysis of biochemical variations and microRNA regulation in wild and cultivated species exposed to in vivo water stress. *Physiology and Molecular Biology of Plants*, 20: 57-67.

14. Kravchik, R., Sunkar, R., Damodharan, S., Stav, R., Isaacson T, and Arazi, T. (2014). Global and local perturbation of the tomato microRNA pathway by a trans-activated DICER-LIKE 1 mutant. *Journal of Experimental Botany*, 65: 725–739.
- | 15. Aryal, R., Jagadeeswaran, G and Zheng, Y., Sunkar, R*., and Ming, R. (2014). Analysis of papaya small RNAs revealed a pericentric inversion triggering sex chromosome evolution. *BMC Genomics*,15:20 (Co-corresponding author).
- | 16. Zheng, Y., Jagadeeswaran, G., Gowdu, K., Wang, N, Li, S., Ming, R., Sunkar, R. (2013) Genome-wide analysis of microRNAs in sacred lotus, *Nelumbo nucifera* (Gaertn). *Tropical Plant Biology* 6: 117-130.
- | 17. Ming, R., VanBuren, R., Liu, Y., Yang, M., Han, Y., Li, L-T, Zhang, Q., Kim, M-J., Schatz, M., Campbell, M., Li, J., Bowers, JE., Tang, H., Lyons, E., Ferguson, A.A., Narzisi, G., Nelson, D.R., Blaby-Haas, C.E., Gschwend, A.R., Jiao, Y., Der, J.P., Zeng, F., Han, J., Min, X., Hudson, K.A., Singh, R., Grennan, A.K., Karpowicz, S.J., Watling, J.R., Ito, K., Robinson, S.A., Hudson, M.E., Yu, Q., Mockler, T.C., Carroll, A., Zheng, Y., Sunkar, R., Jia, R., Chen, N., Arro, J., Wai, C.M., Spence, A., Han, Y., Xu, L., Zhang, J., Peery, R., Haus, M.J., Xiong, W., Walsh, J.A., Wu, J., Wang, M.L., Zhu, Y. J., Paull, R.E., Britt, A.B., Du, C., Downie, S.R., Schuler, M.A., Michael, T.P., Long, S.P., Ort, D.R., Somerville, C.R., Schopf, J.W., Gang, D.R., Jiang, N., Yandell, M., dePamphilis, C.W., Merchant, S.S., Paterson, A., Buchanan, B.B., Li, S., Shen-Miller, J. (2013) The genome of the long-living sacred lotus (*Nelumbo nucifera*, Gaertn.). *Genome Biology* 14:R41
- | 18. Li, Y., Zheng, Y. Jagadeeswaran G. and Sunkar, R. (2013) Characterization of small RNAs and their target genes in wheat seedlings using sequencing-based approaches. *Plant Science*, 203: 17-24.
- | 19. Manohar, S., Jagadeeswaran, G., Nimmakayala, P., Tomason, Y., Almeida, A., Sunkar, R., Levi, A. and Reddy UK. (2013) Dynamic regulation of novel and conserved miRNAs across various tissues of diverse Cucurbit spp. *Plant Molecular Biology Reporter*, 31: 335-343.
- | 20. Aryal, R., Yang, X., Yu, Q., Sunkar, R., Li, L. and Ming, R. (2012) Asymmetric purine-pyrimidine distribution in cellular small RNA population of papaya. *BMC Genomics* 13:682.
- | 21. Sattar, S., Addo-Quaye, C., Song, Y., Anstead, J.A., Sunkar, R and Thompson, G.A. (2012). Expression of small RNA in *Aphis gossypii* and its potential role in the resistance interaction with melon. *PLoS ONE* 7(11): e48579.
- | 22. Alabi, O. J., Zheng, Y., Jagadeeswaran G., Sunkar, R. and Naidu, R.A. (2012) Profiling of small RNAs in grapevine affected with grapevine leaf-roll disease. *Molecular Plant Pathology*, 13, 1060-1076.

23. Jagadeeswaran G., Nimmakayala, P. Zheng, Y., Gowdu, K., Reddy U.K. and Sunkar, R. (2012). Characterization of small RNA component of the leaves and fruits from four cucurbit species. *BMC Genomics*, 13(1):329. [Impact Factor-3.99] (Highly accessed article as per BioMed Central).
24. Sattar, S., Song, Y., Anstead, J.A., Sunkar, R. and Thompson, G.A. (2012). Cucumis melo microRNA expression profile during aphid herbivory in resistant and susceptible interaction. *Molecular Plant Microbial Interactions*, 25(6): 839-48.
25. Zhang, X., Zheng, Y., Jagadeeswaran, G., Ren, R., Sunkar, R. and Jiang, H. (2012). Identification and developmental profiling of conserved and novel microRNAs in *Manduca sexta*. *Insect Biochemistry and Molecular Biology*, 42, 381-395.
26. Iyer, N., Jia, X., Sunkar, R., Tang, G. and Mahalingam, R. (2012). Analysis of microRNAs responsive to ozone-induced oxidative stress in *Arabidopsis thaliana*. *Plant Signaling and Behavior* 7, 484-491.
27. Fu, C., Sunkar, R., Zhou, C., Shen, H., Zhang, J., Matts, J., Wolf, J., Mann, D.G.J., Neal Stewart, C., Tang, Y. and Wang, Z-Y (2012). Overexpression of miR156 in switchgrass results in various morphological alterations and leads to improved biomass production. *Plant Biotechnology Journal*, 10, 443-452.
28. Zheng, Y., Li, Y., Sunkar, R. and Zhang, W. (2012). Seq-Tar: An effective method for identifying microRNA guided cleavage sites from degradome of polyadenylated transcripts in plants. *Nucleic Acids Research*, 40(4), e28.
29. Sunkar, R., Li, Y. and Jagadeeswaran, G. (2012). Functions of microRNAs in plant stress responses. *Trends in Plant Science*, 17, 196-203.
30. Li, Z., Zheng, Y., Jagadeeswaran, G. Li, Y., Gowdu, K and Sunkar, R. (2011). Identification and temporal expression analysis of conserved and novel miRNAs in *Sorghum*. *Genomics*, 98: 460-468.
31. Li, Y., Zheng, Y., Addo-quaye, C., Li, Z., Saini, A., Jagadeeswaran, G., Axtell M, Zhang, W., Sunkar, R. (2010). Transcriptome-wide identification of microRNA targets in rice. *Plant Journal*, 62(5): 742-759.
32. Matts, J., Roe, B.A. and Sunkar, R. (2010). Identification of microRNAs and their targets in switchgrass, a model cellulosic biofuel plant species. *Journal of Plant Physiology*, 167(11): 896-904.
33. Jagadeeswaran, G., Zheng, Y, Sumathipala, N., Arese E., Soulages, J.L., Zhang, W. and Sunkar, R (2010). Deep sequencing of small RNA libraries reveals dynamic regulation of conserved and novel microRNAs and microRNA-stars during silkworm development. *BMC Genomics*, 11:52.

34. Yao Y, Ni Z, Peng H, Sun F, Xin M, Sunkar R, Zhu JK, Sun Q. (2010). Non-coding small RNAs responsive to abiotic stress in wheat (*Triticum aestivum* L.). *Functional & Integrative Genomics*, 10(2): 187-190.
- | 35. Addo-quaye, C., Snyder, J.A., Park, Y.B., Li, Y., Sunkar, R. and Axtell M. (2009). Sliced microRNA targets and precise loop-first processing of MIR319 hairpins revealed by analysis of the *Physcometrella patens* degradome. *RNA*, 15:2112-2121.
- | 36. Jagadeeswaran, G., Zheng, Y., Li, Y., Shukla, L., Matts, J., Hoyt, P., Graham, M.S., Roe, B.A., Zhang, W, and Sunkar, R (2009). Sequencing of a small RNA library from *Medicago truncatula* revealed four families of novel legume-specific and candidate microRNAs. *New Phytologist*, 184:85-98.
- | 37. Reddy, A.M., Zheng, Y., Jagadeeswaran, G., Graham, M., Roe, B., DeSliva, U., Zhang, W. and Sunkar, R (2009). Cloning, characterization and expression analysis of porcine microRNAs. *BMC Genomics*, 10:65.
- | 38. Jagadeeswaran, G., Saini, A and Sunkar, R (2009). Biotic and abiotic stress down-regulate miR398 expression in *Arabidopsis*. *Planta*, 229: 1009-1014.
- | 39. Zhou, X., Sunkar, R., Jin, H., Zhu, J-K and Zhang, W. (2009). Genome-wide identification and analysis of small RNAs originated from natural antisense transcripts *Oryza sativa*. *Genome Research*, 19: 70-78.
- | 40. Sunkar, R and Jagadeeswaran, G. (2008). In silico identification of conserved miRNAs in large number of diverse plant species. *BMC Plant Biology*, 8:37.
- | 41. Subramanian, S., Fu, Y., Sunkar, R., Barbazuk, B. W., Zhu, J-K. and Yu, O. (2008). Novel and nodulation-regulated microRNAs in soybean roots. *BMC Genomics*, 9:160.
- | 42. Sunkar, R., Zhou, X., Zheng, Y., Zhang, W. and Zhu, J-K. (2008). Identification of novel and candidate miRNAs in rice by high throughput sequencing. *BMC Plant Biology*, 8:25.
- | 43. Yao, Y., Guo, G., Ni. Z., Sunkar, R., Du, J., Zhu, J.K. Sun, Q. (2007). Cloning and characterization of microRNAs from Wheat, (*Triticum aestivum* L.). *Genome Biology*, 8: R96.
- | 44. Sunkar, R. (2010). MicroRNAs with macro effects on plant stress responses. *Seminars in Cell and Developmental Biology*, 21 (8), 805-81,
- | 45. Sunkar, R. (2010). Small Inhibitory RNAs. *Encyclopedia of Biotechnology in Agriculture and Food*, 1:1, 579-582.

46. Shukla, L., Chinnusamy, V. and Sunkar, R (2008). The role of microRNAs and other endogenous small RNAs in plant stress responses. *Biochem. Biophys. Acta; Gene Regulatory Mechanisms*, 1779, 743-748.
- | 47. Sunkar, R, Chinnusamy, V., Zhu, J. and Zhu, J.K. (2007). Small RNAs as big players in plant abiotic stress responses and nutrient deprivation. *Trends in Plant Science*, 12: 301-309.
- | 48. Sunkar, R and Zhu, J.K. (2007). Micro RNAs and short-interfering RNAs in plants. *Journal of Integrative Plant Biology*, 49: 817-826.
- | 49. Sunkar, R., Kapoor, A. and Zhu, J.K. (2006). Posttranscriptional induction of two Cu/Zn superoxide dismutase genes in *Arabidopsis* is mediated by down-regulation of miR398 and important for oxidative stress tolerance. *Plant Cell*, 18, 2051-2065.
- | 50. Borsani, O. Zhu, J.H., Verslues, P.E., Sunkar, R. and Zhu, J.K. (2005). A novel biogenesis pathway and physiological function for endogenous siRNAs from natural cis-antisense transcripts in *Arabidopsis*. *Cell*, 123, 1279-1291.
- | 51. Sunkar, R., Girke, T. and Zhu, J-K. (2005). Identification and characterization of endogenous small-interfering RNAs from rice. *Nucleic Acids Research*, 33, 4443-4454, 2005.
- | 52. Sunkar, R., Girke, T., Jain, P.K. and Zhu, J-K. (2005). Cloning and characterization of microRNAs from rice. *Plant Cell*, 17, 1397-1411. (Highlighted in the same issue of *Plant Cell* 17, 1251-1252, 2005).
- | 53. Bartels, D. and Sunkar, R. (2005). Drought and salt tolerance in plants. *Critical Reviews in Plant Sciences*, 24, 23-58.
- | 54. Kirch, H-H., Schlingensiepen, S., Kotchoni, S., Sunkar, R and Bartels, D. (2005). Detailed expression analysis of selected genes of the aldehyde dehydrogenase (ALDH) gene super family in *Arabidopsis thaliana*. *Plant Molecular Biology*, 57, 315-332.
- | 55. Sunkar, R and Zhu, J-K. (2004). Novel and stress-regulated microRNAs and other small RNAs from *Arabidopsis*. *Plant Cell*, 16, 2001-2019. (Highlighted in *Science STKE* and also in the same issue of *Plant Cell*).
- | 56. Sunkar, R. and Zhu, J-K. (2004). Abscisic acid. *Encyclopedia of Biological Chemistry*, 1, 6-11, Edited by William Lennarz and M.Daniel Lane, Elsevier Science Publishers, San Diego, USA.
- | 57. Sunkar, R., Bartels, D and Kirch, H-H. (2003). Improved abiotic stress tolerance of transgenic *Arabidopsis* plants overexpressing a stress-inducible aldehyde dehydrogenase. *Plant Journal*, 35, 452-464.

- | 58. Sunkar, R., Kaplan, B., Nicolas, B., Arazi, T., Dolev, D., Talke, I.N., Maathius, F.J.M., Sanders, D., Bouchez, D. and Fromm, H. (2000). Expression of a truncated tobacco NtCBP4 channel in transgenic plants and disruption of the homologous Arabidopsis CNGC1 gene confer Pb²⁺ tolerance. *Plant Journal*, 24:533-542.
- | 59. Arazi, T, Sunkar, R*, Kaplan, B., and Fromm, H. (1999). A tobacco plasma membrane calmodulin-binding transporter confers Ni²⁺ tolerance and Pb²⁺ hypersensitivity in transgenic plants. *Plant Journal*, 20, 171-182, (* co-first author).
- | 60. Sunkar, R. and Bartels, D. (2002). Drought- and desiccation-induced modulation of gene expression in plants. *Plant, Cell & Environment*, 25,141-151.
- | 61. Arazi, T., Kaplan, B., Sunkar, R and Fromm, H. (2000). Cyclic nucleotide- and Ca²⁺/calmodulin-regulated channels in plants: targets for manipulating heavy metal tolerance, and possible physiological roles. *Biochemical Society Transactions*, 28, 471-475.
- | 62. Sunkar, R. and Sudhakar, C. (2000). Proline metabolism during dehydration in two mulberry genotypes with contrasting drought tolerance. *Journal of Plant Physiology*, 157, 81-85.
- | 63. Sunkar, R. and Sudhakar, C. (2001). Alleviation of NaCl salinity stress by calcium is partly related to the increased proline accumulation in mulberry (*Morus alba* L.) callus. *Journal of Plant Biology*, 28, 203-206.
- | 64. Kumar, S.G., Lakshmi, A., Madhusudhan, K.V., Sunkar, R. and Sudhakar, C. (1999). Photosynthesis parameters in two cultivars of mulberry differing in salt tolerance. *Photosynthetica*, 36, 611-616.
- | 65. Sunkar, R., Kaiser, W.M. and Dietz, K-J. (1999). Salt and drought stress differentially affect the accumulation of extracellular proteins in barley. *Zeitschrift fur Naturforschung*, 54c, 337-347.
- | 66. Sreenivasulu, N., Sunkar, R., Kini, K.R., Prakash, H.S., Shetty, H.S., Savithri, H.S. and Sudhakar, C. (1999). Total peroxidase activity and peroxidase isoforms as modified by salt stress in two cultivars of fox-tail millet with differential salt tolerance. *Plant Science*, 141, 1-9.
- | 67. Sunkar, R., Sreenivasulu, N. and Sudhakar, C. (1998). Effect of water stress on photosynthesis in two mulberry genotypes with different drought tolerance. *Photosynthetica*, 35, 279-284.

68. Sunkar, R., Sreenivasulu, N., Kumar, S.G. and Sudhakar, C. (1998). Photosynthetic characteristics in mulberry during water stress and rewatering. *Photosynthetica*, 35, 259-263.
- | 69. Reddy, P.S., Sunkar, R., Veeranjanyulu, K. and Sudhakar, C. (1998). Differential sensitivity of stomatal and non-stomatal components to NaCl or Na₂SO₄ salinity in horsegram, *Macrotyloma uniflorum* (Lam.). *Photosynthetica*, 35, 99-105.
- | 70. Blinda, A., Koch, B., Sunkar, R. and Dietz, K-J. (1997). de novo synthesis and accumulation of apoplasmic proteins in leaves of heavy metal exposed barley seedlings. *Plant, Cell & Environment*, 20, 969-981.
- | 71. Sunkar, R. and Sudhakar, C. (1997). Drought tolerance is partly related to amino acid accumulation and ammonia assimilation: A comparative study in two mulberry genotypes differing in drought sensitivity. *Journal of Plant Physiology*, 150, 345-350.
- | 72. Sudhakar, C., Sunkar, R., Reddy, P.S. and Veeranjanyulu, K. (1997). Response of some Calvin cycle enzymes subjected to salinity shock in vitro. *Indian Journal of Experimental Biology*, 35, 665-667.
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- | 77. Sunkar, R., Veeranjanyulu, K. and Sudhakar, C. (1993). Physiological changes induced by NaCl in mulberry var. Mysore local. *Indian Journal of Plant Physiology*, 36, 273-275.
- | 78. Sunkar, R., Veeranjanyulu, K. and Sudhakar, C. (1992). Sodium, potassium and nitrogen status of some mulberry (*Morus alba* L.) cultivars under NaCl salinity. *Plant Physiology and Biochemistry*, 19, 103-106.

Book chapters

- | 1. Vallabhi, G., Krishnayya, R. and Sunkar R. (2014). Impact of climate change on microRNA expression in plants. In "Climate Change and abiotic stress tolerance"

Wiley-VCH Verlag GmbH & Co. Germany, Tuteja, N. and Gill, S.S. editors, pp507-520.

- | 2. Li, Y. and Sunkar, R. (2013). Global identification of small RNA targets by sequencing sliced ends of messenger RNAs. *Rice protocols: Methods in Molecular Biology*, 956:119-129.
- | 3. Jagadeeswaran, G. and Sunkar, R. (2013). Cloning of small RNAs for the discovery of novel miRNAs in rice. *Rice protocols: Methods in Molecular Biology*, 956: 109-118.
- | 4. Clarke, S.L., Davis M.R, and Sunkar, R. (2013). Biogenesis of Mammalian miRNA. In: *MicroRNAs as tools in Biopharmaceutical production* (edited by Niall Barron) (Springer Publishers) pp15-27.
- | 5. Saini, A., Li, Y-F, Jagadeeswaran, G. and Sunkar, R. (2012). Role of microRNAs in plant adaptation to environmental stresses. In: *MicroRNAs in Plant Development and Stress Responses* (Sunkar, R. editor), Springer-Verlag, Germany, pp219-232.
- | 6. Reyes, J.L., Arenas-Huertero, C. and Sunkar, R (2010). Cloning of stress-responsive microRNAs and other small RNAs from plants. *Methods in Molecular Biology*, 639, 239-251.
- | 7. Chinnusamy, V., Zhu, J-K. and Sunkar, R (2010). Gene regulation during cold stress acclimation in plants. *Methods in Molecular Biology*, 639, 31-55.
- | 8. Sreenivasulu, N., Sunkar, R., Wobus, U. and Strickert, M. (2010), Array platforms and bioinformatics tools for the analysis of plant transcriptome in response to abiotic stress. *Methods in Molecular Biology*, 639, 71-93.
- | 9. Sunkar, R., Arazi, T., Kaplan, B., Dolev, D. and Fromm, H. (2001). Calmodulin and plant response to the environment: Modulation of plant tolerance to toxic metals by a plasma membrane calcium/calmodulin-binding channel. In: *Signal Transduction in Plants: Current Advances*. Ed. by Sopory, S.K. Oelmuller, R. and Maheswari, S.C. Kluwer Academic/Plenum Publishers, pp113-123.

Publications in the news letters

1. Sunkar R. (2010). MicroRNAs: Investigating impact on biomass production. *OKEPSCoR Research Connection*, 7:10.
2. Sunkar, R. and Sudhakar, C. (1995). Bio-slurry - A potential organic manure for mulberry. *Indian Silk*, 33, 15-18.
3. Sunkar, R and Sudhakar, C. (1992). Feeding response of silkworm - Role of secondary metabolites. *Indian Silk*, 30, 22-23.

Patents

1. Zhu, J.K. and Sunkar, R. Cloning and characterization of microRNAs from rice. U.S. Patent #7414125.
2. Zhu, J.K. and Sunkar, R. Plant Superoxide dismutase Expression Resistant to Micro-RNA Regulation. University of California Case number. 2006-613-1 (filed), International Application No. PCT/US2007/008680.
3. Zhu, J.K. and Sunkar, R. Cloning and characterization of microRNAs from rice. New International patent Application and New Argentina patent Applications corresponding to U.S. Patent #20060236429.

ADVISING GRADUATE, UNDERGRADUATE, POSTDOCOTORAL AND VISITING SCIENTISTS

Graduate students

1. Jessica Matts (2006-2010)
2. Zhang Li (2008-2010)
3. Cherie Ognabiene (2009-2012)
4. Robert Pokoo (2013- current).

Visiting Graduate Students

1. Ms. Vallbhi Ghorecha (July 2012-Dec, 2012). Graduate Student from MS University, Baroda, India
2. Ms. Ferhunde Aysin (Oct 2012- Dec 2013), Graduate Student from Middle East Technical University, Turkey.

Undergraduate students

Andrea Reeve, Sandra Mikulin, Preston Pearson, Jung-To Shen, Will Heise (Wentz Scholar), Brondon Humble, Justin Tom, Jina Lee and Joseph Crook (Niblack Scholar) Jeddaiiah Love Vann (Langston University, May-June, 2014) Olanrewaju Adumatioge (University of Texas, Arlington, May-Jun, 2015).

Post-doctoral fellows

1. Dr. Guru Jagadeeswaran (April 2007 – June 2012) – currently working as Research Specialist, OSU
2. Dr. Yongfang Li (June 08-May 2013) – currently working as an Assistant Professor, College of Life Science, Henan Normal University, Xinxiang, P. R. China
3. Dr. Alok Ranjan (April-Sept, 2013)
4. Dr. Reddy Alavala (Aug 07-July 08) – currently working as Associate Professor, Department of Zoology, Nannaya University, Rajahmundry, India.
5. Dr. Sampurna Sattar (January 2009-May, 2011) – currently working as Research Associate, Penn State University
6. Dr. Guosheng Li (Aug 09-July 10) – currently working as Research Associate, University of Arizona, Tucson

7. Dr. Nagabhusana Naidu (Jan - June, 2009) – currently working as Research Associate, University of Saskatchewan, Canada
8. Dr. James Anstead (Feb-August 2007) – currently working as Supervisor, DNA solutions, Oklahoma City

Visiting professors/scientists

1. Dr. Chandra Obula Reddy Puli (Dec 2014-Nov 2015), UGC- postdoctoral Fellow, Department of Botany, Yogi Vemana University, Kadapa, India.
2. Dr. Sanjib Panda (April 2013-Dec 2014), Indo-US Science and Technology Forum Fellowship, Assam University, Silchar, India.
3. Dr. Piyalee Panda (Aug-Dec 2014), Visiting postdoctoral fellow, Assam University, India.
4. Dr. Vandana Hivrale (Sept 2013-Aug 2014), UGC postdoctoral Fellow, Department of Biochemistry, Marathwada University, Aurangabad, India
5. Dr. Zhifang Wang (May 2014-Oct-2014), Institute of Applied Microbiology, Xinjiang Academy of Agriculture Science, Urumqi, Xinjiang Uygur Autonomous Region, P.R. China
6. Dr. VLN Reddy (Aug 13 -July 2014), UGC postdoctoral Fellow, Acharya NG Ranga Agricultural University, Hyderabad, India
7. Dr. Sangeeta Srivastava (May 2013- Oct 2013), DBT-CREST Fellow, Principal Scientist, Indian Institute of Sugarcane Research, Lucknow (ICAR), India.
8. Dr. Bhaben Tanti (July 2013-June 2014), DBT-CREST Fellow, Associate Professor, Department of Botany, Guwahati University, Assam, India.
9. Dr. Shuvasish Choudary (Sept 2013-Aug 2014), DBT-CREST Fellow, Assam University, Silchar, India.
10. Dr. Sudripta Das (Sept 2011- June, 2012), DBT-CREST Fellow, Tea Research Foundation, India
11. Dr. Yun Zheng, Associate Professor (April 1-April 30, 2010 and May1-June 8, 2013), Fudan University, Shanghai, China.
12. Dr. Lata Shukla (June 07-Feb 08) BOYSCAST Fellow, Pondicherry University, India.
13. Dr. B. Ravi Prasad Rao, Professor of Botany, (April 1-April 30, 2009), Sri Krishnadevaraya University, Anantapur, India.
14. Dr. Ajay Saini (June 08-May 09) BOYSCAST Fellow. Bhabha Atomic Research Centre, Mumbai.

Service in dissertation/thesis committees

1. Gabriela Orquera-Tornakian, Entomology and Plant Pathology, OSU
2. Naichong Chen, Department of Biochemistry and Molecular Biology, OSU
3. Jorge Lightfoot, Department of Microbiology and Molecular Genetics, OSU
4. Fredy Saudale, Department of Biochemistry and Molecular Biology, OSU
5. Tyson Kerr, Department of Biochemistry and Molecular Biology, OSU
6. Li Zhang, Veterinary Medicine, OSU (Graduated)
7. Steve Pennington, Department of Biochem. and Mol. Biology, OSU (Graduated)
8. Xiufeng Zhang, Department of Entomology and Plant Pathology, OSU (Graduated)
9. Songyue Chen, Department of Biochem. and Mol. Biology, OSU (Graduated)

10. Gloria Perez, Department of Biochemistry and Molecular Biology, OSU (Graduated)
11. Zhiyan Fu, Department of Biochemistry and Molecular Biology, OSU (Graduated)
12. Lila Pele, Department of Biochemistry and Molecular Biology, OSU (Graduated)
13. Subhashini Mahalakshmi, Department of Chemistry, OSU (Graduated)
14. Sebastian Harris, Department of Biochem. and Mol. Biology, OSU (Graduated)
15. Baskar Nammalvar, Department of Chemistry, OSU (Graduated)
16. Amanda Miles, Department of Biochem. and Mol. Biology, OSU (Graduated)
17. Alisha Howard, Department of Biochemistry and Molecular Biology, OSU (Graduated)

CHAired SESSIONS AT THE MEETINGS

Workshop organizer/session Chair at the International conferences

1. “Abiotic Stress” session-Plant and Animal Genome Conference-Asia, March 17-19, 2013, Singapore
2. “Abiotic and Biotic Stress Tolerance” session-Society for In Vitro Biology, June 15-19th, 2013, Providence, USA.
3. “Abiotic Stress” session-Plant and Animal Genome Conference-Asia, May 19-21, 2014, Singapore
4. Pearl Millet Genome Sequencing Consortium- Co-chair of the session, Shenzhen, Sept 11, 2014, China

TEACHING

BIOC6753: Epigenetics

BIOC6793: Plant Biochemistry

BIOC5002: Advances in Biochemical Techniques

BOOKS EDITED

1. “Methods in Molecular Biology: Plant Stress Tolerance-Methods and Protocols”, volume 639, 386 pages, 2010, Humana Press.
2. “MicroRNAs in Plant Development and Stress Responses”, Springer-Verlag, Germany..
3. Methods in Molecular Biology: Plant Stress Tolerance- Methods and Protocols” – 2nd edition---updated and additional protocols (in progress).

INVITED TALKS

National and International scientific meetings

1. Plant MicroRNAs and their Targets: Roles in Plant Development and Stress Responses, BIT’s 6th Annual world congress of Molecular and Cell Biology 2016, April 25-28, 2016, Dalian, China.

2. "Plant MicroRNAs and their Targets: Roles in Plant Development and Stress Responses" Workshop on "MicroRNAs in Plant Development and Stress" organized by the International Center for Genetic Engineering and Biotechnology, New Delhi, India, Nov 17th 2015,
- | 3. "Role of microRNAs in plant abiotic stress responses" Plant and Animal Genome XXIII, San Diego, Jan10-14, 2015.
- | 4. "Role of microRNAs in plant stress responses" Plant and Animal Genome conference-Asia, Singapore, May19-21, 2014
- | 5. "Comparative and integrative 'Omics' approaches to decipher salt tolerance in rice", 11th International Symposium on Rice Functional Genomics New Delhi, India, Nov 20-23, 2013.
- | 6. "Small RNAs and Plant Stress" Plant and Animal Genome conference-Asia, Singapore, March 17-19th, 2013
- | 7. "Small RNAs in Sorghum and Switchgrass" XX International Plant and Animal Genome Conference, San Diego, January14-18th, 2012.
- | 8. "MicroRNAs in biofuel plant species and their utility to improve biomass production or stress tolerance" International Conference on New Horizons in Biotechnology, Trivandrum, India Nov 21-24, 2011.
- | 9. "Conserved and novel miRNAs identified in sorghum by deep sequencing small RNAs", Plant and Animal Genome Conference, San Diego, January 15-19, 2011.
- | 10. "Role of endogenous small RNAs in plant stress responses", New York Academy of Sciences organized conference on "RNA in Stress Response and Longevity", New York, May 12, 2009.
- | 11. "Role of microRNAs in Plant stress responses". NanoFocus and Oklahoma NSF EPSCoR Annual State Conference, Oklahoma City, OK, USA, March 6-7, 2008.
- | 12. "Role of microRNAs in Plant stress responses". In vitro Biology meeting, Minneapolis, MN, USA. June 3-7, 2006.
- | 13. "Role of miR398 in plant oxidative stress responses". Symposium on "Mechanisms Regulating Cellular Processes and Systems Biology", Oklahoma State University, Stillwater, OK, USA, July 26-27, 2006.

Invited Seminars by academic institutions

1. “Exploring plant microRNAs for engineering and understanding gene regulation” Chinese Academy of Sciences, Wuhan Botanic Garden, Wuhan, China, April 29th, 2016
- | 2. “Plant MicroRNAs: Targets for improving biomass production and stress tolerance”, Huazhong Agricultural University, China, April 28th, 2016
- | 3. “Plant MicroRNAs and their Targets: Role in Plant Stress Tolerance” University of Alabama, Huntsville, Nov 24th, 2014.
- | 4. “MicroRNAs as macro regulators of plant stress responses” Kunming University of Science and Technology, Kunming, China, Sept 15th, 2014.
- | 5. “MicroRNAs as macro regulators of plant stress responses” ICRISAT, Hyderabad, India, July 16th, 2014.
- | 6. “MicroRNAs as macro regulators of plant stress responses” University of South Dakota, Vermillion, USA, March 17th, 2014.
- | 7. “Plant MicroRNAs and their utility to improve biomass production and stress tolerance”, Yogi Vemana University, Kadapa, India, Nov 25th, 2013.
- | 8. “MicroRNAs in biofuel plant species and their utility to improve biomass production or stress tolerance” BioPEC Seminar series, Oklahoma State University, Stillwater, April 18th, 2013.
- | 9. “Small RNAs and Their Roles in Abiotic Stress Responses in Plants” Department of Botany, Sri Krishnadevaraya University, India, March 22nd, 2013.
- | 10. “Plant Small RNAs and Their Targets: Roles in Abiotic and Biotic Stresses” Department of Botany, Oklahoma State University, Stillwater, January 30th, 2013.
- | 11. “Exploring ‘miRNOME’ and ‘degradome’ for the discovery of novel miRNAs and miRNA targets in model plants” Department of Microbiology and Molecular Genetics, Oklahoma State University, Stillwater, September 26th, 2011,
- | 12. “Identification and characterization of microRNAs important for biomass accumulation and stress tolerance in switchgrass” NAS-EPSCoR Mid-Program Review, Samuel Roberts Noble Foundation, Ardmore, OK, June 29-30, 2011.
- | 13. “Exploring ‘miRNOME’ and ‘degradome’ for the discovery of novel miRNAs and miRNA targets in model plants” Department of Crop, Soil and Environmental Sciences, University of Arkansas, Fayetteville, April 15th, 2011.

14. "Exploring 'miRNOME' and 'degradome' for the discovery of novel miRNAs and miRNA targets in model plants" Biochemistry and Molecular Biology, Oklahoma State University, Stillwater, November 19th, 2010,
- | 15. "Cloning and characterization of microRNAs from switchgrass", NSF EPSCoR Biofuels Retreat, Oklahoma City, May 27th 2009.
- | 16. "Role of microRNAs in Plant stress responses", Department of Botany and Microbiology, University of Oklahoma, Norman, April 10th, 2008.
- | 17. MicroRNAs: New players in plant stress responses, Department of Biochemistry and Molecular Biology, Oklahoma State University, Stillwater, OK, USA, Feb 27th, 2006.
- | 18. Identification of novel and stress-regulated microRNAs from Arabidopsis thaliana, Depart of Botany and Plant Sciences, University of California, Riverside, April 23rd, 2004.
- | 19. "Role of Aldehyde dehydrogenases in plant stress responses" Department of Botany, University of Bonn, Germany, Oct 22nd, 2001.
- | 20. "Calmodulin-binding channels in plants: Targets for manipulating heavy metal tolerance," Department of Botany, University of Bonn, Germany, October 27th, 2000.
- | 21. "Calmodulin-binding channels in plants: Targets for manipulating heavy metal tolerance, International Rice Research Institute, Manila, Philippines, May 26th, 2000.

SERVICES AND OTHER ACTIVITIES

Grant Review Panelist

USDA-NIFA-Grant Review Panel, Washington, D.C. May 13-17th, 2013

Grant proposal reviewer

NSF (USA), BBSRC (UK), NSERC (Canada), BSF (Israel-US Bi-National Science Foundation), ERA-CAPS (European Research Area-Coordinating Action in Plant Sciences), Swiss National Science Foundation, Louisiana Board of Regents-Baton Rouge, Kentucky Science and Engineering Foundation,-Lexington, California Department of Food and Agriculture, and, the USDA-ARS-Panelist for Mid-West Area Research project.

Handling/Associate Editor

2015-current	Journal of Experimental Botany (Handling editor)
2009-2015	BMC Plant Biology
2010-2015	BMC Genomics
2013-current	Frontiers in Plant Genetics and Genomics
2014-current	PLoS ONE

Editorial Board Member

2008-current

Molecular Biotechnology

Manuscript reviewer for journals

Nature Communications, Proceeding of National Academy of Sciences USA, Plant Cell, Plant Journal, Plant Physiology, Genome Biology, Trends in Plant Sciences, PLoS Pathogens, PLoS ONE, New Phytologist, Plant Cell and Environment, Planta, Plant Molecular Biology, FEBS Letters, BMC Genomics, BMC Plant Biology, RNA, Molecular and Plant Microbe Interactions, Journal of Experimental Botany, Functional Plant Biology, Functional & Integrative Genomics, Molecular Plant, Journal of Plant Physiology, Plant Physiology and Biochemistry, Plant Cell Reports, Progress in Botany, Genomics, Proteomics & Bioinformatics, Physiologia Plantarum, Plant Signaling and Behavior, FEBS Journal, Gene, Frontiers in Plant Genetics and Genomics, Frontiers in Biology, Silence, Journal of Hazardous Materials, Plant Molecular Biology Reporter

Services in the college level and departmental committees

(a). College level committee

Departmental representative for the CASNR Committee on Teaching Technology and Student Tech Fee (2008-2011). The role of this committee is to provide leadership, direction, and vision relative to the issues of technology in teaching and for the allocation of student tech fees.

(b). Departmental committees

Chair, Seminar program committee (2007-2008 and 2012-2013)

Member, Bio-Safety committee, (2007-2008)

Member, Seminar program committee (2008-2009)

Member, Under-graduate student committee (2008)

Member, Alumni committee (2009-2010)

Member, Graduate student admission committee (2015 --)

Member. Graduate student curriculum committee (2015--)

Poster/abstract presentations in conferences/symposia

1. Robert Pokoo and Ramanjulu Sunkar. A comparative analysis of microRNAs in Flaveria species of C3, C3-C4 intermediate and C4 photosynthesis, **27th Research Symposium** February 15 - 16, 2016. Oklahoma State University, Stillwater, OK
2. **Ray Ming**, Ching Man Wai, Haibao Tang, Michael Schatz, John E. Bowers, David Sankoff, Romain Guyot, Margaret R. Woodhouse, Yann-rong Lin, Ramanjulu Sunkar, Jim Leebens-Mack, Todd C. Mockler, Jeffrey L. Bennetzen, Andrew H. Paterson, Xinguang Zhu, Xiaohan Yang, Andrew Smith, John C. Cushman, Robert E. Paull, Qingyi Yu, Sequencing of the Pineapple Genome as a Model CAM species, PAG, San Diego, 9-13 January, 2016

3. Kunduru., S., Puli, COR., Naik J., Krishna Kumar, G., Suresh Raju, K, Akila, C.S., Arjula, AR. And Sunkar, R. Isolation and characterization of endophytic bacteria from a naturally occurring Uranium-tolerant Species, *Prosopis juliflora* and their potential use for Phytoremediation of Uranium. Annual meeting of the American Society of Plant Biologists, Minneapolis, July 2015
4. Puli, COR., Hivrale, V., Zheng, Y., Jagadeeswaran, G., Kakani, G., Barakat, A. and Sunkar, R. Characterization of drought- and heat-responsive microRNAs in switchgrass. Annual meeting of the American Society of Plant Biologists, Minneapolis July 2015
5. Seeve, C.M., Sunkar, R., Sharp, R.E. and Oliver, M.J. A miR399 target mimic is induced in maize root tips under water deficit stress. IPG 2015 University of Missouri, USA
6. Damien Formey, Luis P Iñiguez, Georgina Navarrete-Estrada, Ramanjulu Sunkar, Federico Sanchez, Jose L Reyes, Georgina Hernandez, Genome-Wide Identification of the *Phaseolus vulgaris* sRNAome using Small RNA and Degradome Sequencing, Plant and Animal Genome XXIII, January 10 - 14, 2015, San Diego
7. Yun Zheng and R Sunkar. Genome-Wide Discovery and Analysis of Phased Small Interfering RNAs in Chinese Sacred Lotus. The 13th International Conference on Bioinformatics (InCoB2014) will be held in Novotel Sydney Brighton Beach, Sydney, New South Wales, Australia. 30th July- August 2nd, 2014.
8. Hivrale, V., Jagadeeswaran, G., Zheng, Y., Kakani, G., Marek, S and Sunkar, R. Profiling of abiotic and biotic stress responsive miRNAs in switchgrass using high-throughput sequencing platform, The XIth MidSouth Computational Biology & Bioinformatics Society Conference, Oklahoma State University, March 6-8, 2014, Stillwater, OK.
9. Sunkar, R., Li, YF., Zheng, Y. and Reddy VLN. Discovery of differentially expressed genes under salt stress employing mRNA and polysomal RNA-seq in rice. Plant & Animal Genome Conference XXII, January 11-15, 2014, San Diego, USA.
10. Pokoo, R. and Sunkar, R. Role of MicroRNAs in diurnal regulation of gene expression in *Arabidopsis*. Biochemistry and Molecular Biology Graduate Student Association Symposim 19-20, Sept, 2013.
11. Srivastava, S and Sunkar, R. Emerging role of microRNA in drought stress tolerance in the biofuel, bioenergy crop sugarcane. Biotechnology-2013, Raleigh NC, Sept 23-25, 2013.
12. Pokoo, R., Jagadeeswaran G., and Sunkar, R. Identification of conserved, novel and stress-responsive microRNAs in switchgrass. Oklahoma EPSCoR Annual State Conference, April 23rd, 2013, Oklahoma State University, Stillwater, USA.

13. Mckale Davis, Grant M. Tinsely, Elizabeth Rendina, Edralin A. Lucas, Brenda J. Smith, Yun Zheng, Raman Sunkar, and Stephen L. Clarke. Characterization of the microRNA response to dietary iron deficiency. 24th Annual Research Symposium, Oklahoma State University, Stillwater, OK, Feb 18-22, 2013.
14. Reddy, UK., Nimmakayala, P., Manohar, S., Thompson, J., Almeida, A., Tomason, Y., Gopinath, V., Jagadeeswaran G., Levi, A. and Sunkar, R. Gene expression across ploidy levels of watermelon. Plant & Animal Genome Conference XXI, January 12-16, 2013, San Diego, USA.
15. Jagadeeswaran, G., Zheng, Y., Himabindu, K, Varshney, R.K. and Sunkar, R. Identification of conserved and novel miRNAs in chickpea (*Cicer arietinum* L.) by high-throughput sequencing of small RNA libraries. VI International Conference on Legume Genetics and Genomics. October 2-7, 2012.
16. Sattar, S., Sunkar, R. and Thompson, G. MicroRNA mediated regulation during aphid herbivory in susceptible and resistant interactions in melon. Annual meeting of the American Society of Plant Biologists. Austin, Texas, US. July 20-24, 2012 (P25046).
17. Sunkar, R and Jagadeeswaran G. MicroRNA component of small RNAs in switchgrass. Annual meeting of the American Society of Plant Biologists. Austin, Texas, US. July 20-24, 2012 (P04020).
18. Alabi, O.J., Zheng, Y., Jagadeeswaran G., Sunkar, R and Naidu, R.A. High-throughput sequence analysis of small RNAs in grapevine (*Vitis vinifera* L.) affected by grapevine leafroll disease. 17th Meeting of the International Council for the Study of Virus and Virus-Like Diseases of the Grapevine. University of California, Davis, October 7-14, 2012.
19. José Luis Reyes, Cecilia Contreras-Cubas, Yongfang Li, Ramanjulu Sunkar, Mario Arteaga, and Alejandra A Covarrubias. Water deficit responses regulated by microRNAs in *Phaseolus vulgaris*, Annual meeting of the American Society of Plant Biologists. Austin, Texas, US. July 20-24, 2012 (P14007).
20. Fu, C., Sunkar, R., Zhou, C., Shen, H., Zhang, J., Matts, J., Wolf, J., Mann, D., Stewart, N., Jr., Tang, Y., Wang, ZY. Overexpression of miR156 for switchgrass improvement. In Vitro cellular and Developmental Biology, 2012.
21. Jagadeeswaran G., Jose, S. and Sunkar, R. Identification of conserved, novel and stress-responsive microRNAs in switchgrass using high-throughput sequencing of small RNA libraries. Oklahoma EPSCoR Annual State Conference, April 10th, 2012, Oklahoma State University, Stillwater, USA.
22. Sunkar, R. Small RNAs in Sorghum and Switchgrass. Plant & Animal Genome Conference XX, January 14-18, 2012, San Diego, USA.

23. Sattar, S., Anstead J., Sunkar, R. and Thompson, G. MicroRNA, transcription factor and defense gene expression during susceptible and resistant aphid interactions in melon. Plant & Animal Genome Conference XX, January 14-18, 2012, San Diego, USA.
24. Sunkar, R. MicroRNAs in biofuel plant species and their utility to improve biomass production and stress tolerance. International Conference on New Horizons in Biotechnology, November 21-24, 2011, Trivandrum, India.
25. Sunkar, R. and Jagadeeswaran, G. MicroRNAs in switchgrass and their utility for improving stress tolerance. International Conference on New Horizons in Biotechnology, November 21-24, 2011, Trivandrum, India.
26. Zhang, X., Jagadeeswaran G., Zheng, Y., Sunkar, R. and Jiang, H. Identification and developmental profiling of conserved and novel microRNAs in *Manduca sexta*. Fifth Arthropod Genomics Symposium, June 9-12, 2011. Kansas City, USA.
27. Sattar, S., Anstead JA., Sunkar, R. and Thompson, G. Expression profile of miRNA during aphid herbivory. Annual Meeting of the American Society for Plant Biology, August 6-10, 2011, Minneapolis, USA.
28. Jagadeeswaran, G. Matts, J. and Sunkar, R. Deep sequencing of small RNA libraries for identification of Novel and Stress-regulated miRNAs in switchgrass. Oklahoma EPSCoR Annual State Conference, April 21st, 2011, University of Oklahoma, Norman, USA.
29. Fu, C., Sunkar, R. and Wang, Z-Y. Overexpression of PvmiRNA156b enhances biomass yield of transgenic switchgrass. Oklahoma EPSCoR Annual State Conference, April 21st, 2011, University of Oklahoma, Norman, USA.
30. Sattar, S., Sunkar, R. and Thompson, G. Differential expression of miRNAs during early and late stages of aphid infestation on a resistance host. Plant & Animal Genome Conference, January 15-19, 2011, San Diego, USA.
31. Anstead, J., Sattar, S., Sunkar, R. and Thompson, G.A. Small RNAs and their targets are differentially expressed in susceptible and resistant interaction between *Aphis gossypii* and *Cucumis melo*. Annual Meeting of Entomological Society of America. November 13-16, 2011, Reno, USA.
32. Li, Y., Zheng, Y., Addo-quaye, C., Li, Z., Saini, A., Jagadeeswaran, G., Axtell M, Zhang, W., Sunkar, R. Transcriptome-wide identification of microRNA targets in rice. RNA Silencing Mechanisms in Plants, Keystone Symposia Feb 21-26, 2010 Santa Fe, NM, USA.
33. Addo-quaye, C., Snyder, J.A., Park, Y.B., Li, Y., Sunkar, R. and Axtell M. Sliced microRNA targets and precise loop-first processing of MIR319 hairpins revealed by analysis of the *Physcometrella patens* degradome. RNA Silencing Mechanisms in Plants, Keystone Symposia Feb 21-26, 2010 Santa Fe, NM, USA.

34. Sattar, S., Anstead, J., Jagadeeswaran G., Sunkar, R. and Thompson, G. MicroRNA regulation of host plant resistance to aphids. Plant and Animal Genome Conference Jan 9-13, 2010, San Diego, USA.
35. Sampurna Sattar, James Anstead, Cherie Ognibene and Gary A. Thompson. Differences in smRNA expression profiles in *Aphis gossypii* in susceptible and resistant interactions with *Cucumis melo*. Annual meeting of Entomological Society of America. December 12–15, 2010, San Diego, USA
36. Matts, J., Jagadeeswaran, G. and Sunkar, R. Identification of conserved and novel microRNAs in switchgrass using high-throughput sequencing of small RNA libraries. Oklahoma EPSCoR Annual State Conference, April 12th, 2010, University of Oklahoma, Norman, USA.
37. Ognibene, C., Sattar, S., Sunkar, R. and Thompson, G. Determining the role of small RNAs in phloem-localized aphid resistance. International Conference on Plant vascular Biology, July 24-28th, 2010, Columbus, Ohio, USA.
38. Sattar, S., Anstead, J., Ognibene, C., Sunkar, R. and Thompson, G.A. Role of miRNA in Vat mediated aphid resistance in melon. USDA Arthropod Nematode Biology workshop March 2010. Abstract and Poster.
39. Alabi, O.J., jagadeeswaran G., Sunkar, R. and Naidu, RA. Profiling host-specific and virus-derived small RNAs in a woody perennial plant species infected with an ampelovirus. American Phytopathological Society Annual Meeting, August 7th-11th, 2010, Nashville, TN, USA
40. Anand, A., Vagchhipawala, Z., Sunkar, R., Dai, X., Zhao, P., Mysore, K.S. Unravelling the whole genome response of *Agrobacterium* to acetosyringone. 30th Annual Crown Gall conference, November 21-22, 2009, Ardmore, USA.
41. Matts, J., Wu, Y. and Sunkar, R. MicroRNA analysis in switchgrass, OSU 20th Annual Research Symposium, February 16-20, 2009, Stillwater, USA.
42. Matts, J., Wu, Y. and Sunkar, R. MicroRNAs in switchgrass, AAAS-SWARM, March, 28, 2009, Tulsa, USA.
43. Sunkar, R., Orazco-Cardenas, M., Saini, A., and Yong-Fang Li. Improving abiotic stress tolerance through engineering miR398-resistant superoxide dismutases in rice and tomato. USDA-Genes to products: Agricultural Plant, Microbe, & Bio-based Products: Research Project Directors Meeting. May 4-6, 2009, Washington D.C. USA.
44. Saini A and Sunkar R. Superoxide dismutases in Rice: Splice variants and their response to diverse abiotic stresses. Plant and Animal Genome Conference, January 10-14, 2009, San Diego, USA

45. Zhou, X., Sunkar, R. Jin, H., Zhu, J-K. and Zhang, W. Genome-wide identification and analysis of small RNAs originated from natural antisense transcripts *Oryza sativa*. RECOMB Regulatory Genomics and Systems Biology 2008, 29th Oct – 2nd Nov, 2008, Boston, USA.
46. Subramanian, S., Fu, Y., Sunkar, R., Barbazuk, B. W., Zhu, J-K. and Yu, O. Novel and nodulation-regulated microRNAs in soybean roots. American Society for Plant Biologists, 2008, Mexico.
47. Matts, J., Wu, Y. and Sunkar, R. MicroRNAs in switchgrass (*Panicum virgatum* L.). Biochemistry and Molecular Biology Graduate student Association, Oklahoma State University, Stillwater, USA, Sept 24th, 2007.
48. Sunkar, R., Gong, Z. and Zhu, J-K. Small RNAs and DNA demethylation in *Arabidopsis*. Key Stone Symposium on “miRNAs and siRNAs” Keystone Resort, Colorado, USA, April, 2004.
49. Sunkar, R., Kotchoni, S., Kirch, H-H and Bartels, D. Overexpression of a stress-inducible aldehyde dehydrogenase confers abiotic stress tolerance to transgenic plants Gordon Research Conference on Water and Salt stress in Plants, Oxford, UK, 14-19th July, 2002.
50. Kotchoni O. S., Sunkar, R., Kirch H-H and Bartels D. Overexpression of an *Ath*-ALDH 3 gene in transgenic *Arabidopsis* plants confer tolerance to drought and high salinity. European Workshop on Environmental Stress and Sustainable Agriculture, St. Constantine and Helena Resort, Varna, Bulgaria, 07-12 September 2002.
51. Sunkar, R., Kotchoni O. S., Bartels D. and Kirch H-H. Ectopic expression of stress-inducible aldehyde dehydrogenase genes decreases oxidative stress and improves abiotic stress tolerance in *Arabidopsis thaliana*. 13th International conference on *Arabidopsis* Research, Seville, Spain, 28 June -2 July, 2002.
52. Sunkar, R., Kirch, H-H. and Bartels, D. Improved salt tolerance of transgenic *Arabidopsis* plants overexpressing a novel dehydration-inducible aldehyde dehydrogenase gene. Workshop on "Molecular basis of ion homeostasis and salt tolerance in plants" Centre for International Meetings on Biology, Juan March Institute, Madrid, Spain, 22-24 October, 2001.
53. Bartels, D., Smith-Espinoza, C., Sunkar, R. and Kirch, H-H. Manipulating dehydration tolerance. 10th European Congress on Biotechnology: Biotechnological challenges in the new millennium. Madrid, Spain, 8-11 July, 2001.
54. Kirch, H-H., Nair, A., Abrams, S., Sunkar, R. and Bartels, D. Isolation and characterization of a novel dehydration inducible aldehyde dehydrogenase from *Cratogeomys plantagenium*. American Society of Plant Biology, 2001.

55. Sunkar, R., Kaplan, B., Arazi, T., Dolev, D. and Fromm, H. Cyclic nucleotide- and calcium/calmodulin-regulated channel in plants: targets for manipulating heavy metal tolerance, and possible physiological roles. Annual Meeting of Biochemical Society. University of Leeds, Leeds, UK, 17-19 April, 2000.
56. Sunkar, R., Kaplan, B., Arazi, T., Dolev, D. and Fromm, H. Modulation of plant tolerance to heavy metals by manipulation of Calcium/calmodulin-binding plasma membrane channel protein. Annual Meeting of Israeli Society of Plant Sciences. ARO, Volcani, Israel, 17th February, 2000.
57. Arazi, T., Sunkar, R., Kaplan, B. and Fromm, H. Calmodulin and plant responses to the environment: Modulation of plant tolerance to toxic metals by a plasma membrane calcium/calmodulin-binding channel. First ICGEB Symposium on Plant Signal Transduction. New Delhi, India, 4-6 October, 1999.
58. Arazi, T., Sunkar, R. and Fromm, H. Functional studies of a novel family of calmodulin binding plasma membrane channels in transgenic plants. Annual Meeting of the American Society of Plant Physiologists, Baltimore MD, USA, 24-28 July 1999.
59. Sudhakar C., Surabhi, G-K and Sunkar, R. (1999) Salt stress induced proteins in two cultivars of mulberry (*Morus alba* L.) with different salt sensitivity, presented at the international conference on life sciences in the next millennium organized by school of life sciences, University of Hyderabad, Hyderabad, India. Dec. 11-14.
60. Sudhakar C., Surabhi, G-K and Sunkar, R. (1999) Changes in the anti-oxidant enzyme efficacy in two high yielding genotypes of mulberry (*Morus alba* L.) under NaCl salinity. "National seminar on Tropical sericulture" organized by Department of Sericulture, University of Agricultural Sciences, Bangalore, India. Dec. 18-30.
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