CURRICULUM VITAE
SANDEEP R. MARLA, Ph.D.

Address: Department of Agronomy, Kansas State University
3007 Throckmorton Plant Science Center, Manhattan, KS 66506
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EDUCATION

2014 **PhD – Plant Pathology**, Purdue University, USA
Dissertation: Characterization of adult plant resistance in the maize–*Cochliobolus carbonum* race 1 pathosystem revealed a close connection between plant immunity and metabolism.

2008 **MS – Plant Pathology**, Auburn University, USA
Thesis: The effect of cover crops on suppression of nematodes on peanuts and cotton in Alabama.

2005 **BSc – Agriculture**, Acharya N. G. Ranga Agricultural University, India

PROFESSIONAL APPOINTMENTS

2026 – Research Assistant Professor
Department of Agronomy, Kansas State University

2024 – 2026 Research Manager, Sorghum Traits Collaborative Innovation Network
Department of Agronomy, Kansas State University

2021 – 2023 Senior Research Scientist
Department of Agronomy, Kansas State University

2019 – 2021 Senior Research Scientist
Department of Plant Pathology, Kansas State University

2014 – 2019 Postdoctoral Research Associate
Department of Agronomy, Kansas State University

2009 – 2014 Graduate Research/Teaching Assistant
Department of Botany & Plant Pathology, Purdue University

2006 – 2008 Graduate Research Assistant
Department of Entomology & Plant Pathology, Auburn University

PATENTS

Patent No. US20240182899A1 (Application published)
Title: Short multi-repeat RNA targeting gene silencing
Inventors: David E. Cook, Veerendra Sharma, **Sandeep Marla**, Geoffrey Morris

Patent No. WO/2021/189034 (Application published)
Title: Methods and Compositions for Developing Cereal Varieties with Chilling Tolerance
Inventors: Geoffrey P. Morris, Terry Felderhoff, and **Sandeep R. Marla**

GRANTS

FUNDED RESEARCH GRANTS

1. Prashant Jha, Vipan Kumar, Sushil Paudyal, **Sandeep Marla (co-PI)**, Brandon Gerrish, Vara Prasad, Kaliramesh Siliveru, and Ramasamy Perumal. USDA NIFA AFRI. $617,000. 2026-2030. Pearl millet: Post-herbicide tolerant grain and forage hybrid development by integrating classical and molecular breeding approaches.
2. **Sandeep Marla (co-PI)**, Harold Trick, and Terry Felderhoff. Collaborative Sorghum Investment Program (CSIP) K-State. $223,000. 2024–2027. Accelerating Sorghum Native Traits Discovery with GRF4-GIF1 CRISPR-Cas9 Transformation Platform.
3. Ivan Grijalva, Terry Felderhoff, **Sandeep Marla (co-PI)**, and Brian McCornack. Sorghum Checkoff. $170,000. 2024–2026. Integrated pest management strategies manage chinch bugs in sorghum.

Submitted/Under Review

1. **Sandeep Marla (PI)**, Sarah Sexton-Bowser, Carlos Campabadal, and Terry Felderhoff. USDA NIFA AFRI in October 2025. $650,000. 2026–2030. Breeding low-dust, itch-free sorghum through forward and reverse genetics.

2. Rebecca Smith, Rajdeep Khangura, Sarah Kezar, Al Kovaleski, Erin Silva, and **Sandeep Marla (Co-PI)**. USDA NIFA AFRI March 2026. $5.1 million. Expanding Sorghum's Reach: Cold Tolerance, Allelopathy, And Adaptation Strategies for Northern Latitudes.

PEER REVIEWED PUBLICATIONS

1. **Sandeep R. Marla**, Marcus Olatoye, Matthew Davis, Vincent Otchere, Sarah Sexton-Bowser, Geoffrey P. Morris, and Terry Felderhoff. (2025). Mining sorghum pangenome enabled identification of new dw3 alleles for breeding stable-dwarfing hybrids. **G3 Genes| Genomes| Genetics**
2. Shuping Jiao, Sujan Mamidi, Mark A. Chamberlin, Mary Beatty, Shawn Thatcher, Kevin D. Simcox, Fanna Maina, Hu Wang-Nan, Gurmukh S. Johal, Lynn Heetland, **Sandeep R. Marla**, Robert B. Meeley, Jeremy Schmutz, Geoffrey P. Morris, Dilbag S. Multani. (2023). Parallel tuning of semi-dwarfism via differential splicing of *Brachytic1* in commercial maize and smallholder sorghum. **New Phytologist**
3. Anthony Schuh, Terry Felderhoff, **Sandeep R. Marla**, Geoffrey Preston Morris. (2023). Precise colocalization of sorghum's major chilling tolerance locus with Tannin1 is due to tight linkage drag not antagonistic pleiotropy. **Theoretical and Applied Genetics**
4. Ajay Prasanth Ramalingam, Williams Mohanavel, Rohit Kambale, Veera Ranjani Rajagopalan, **Sandeep R. Marla**, P. V. Vara Prasad, and Raveendran Muthurajan. (2023). Pilot-scale genome-wide association mapping in diverse sorghum germplasms identified novel genetic loci linked to major agronomic, root and stomatal traits. **Nature Scientific Reports**
5. **Sandeep Marla**, Terry Felderhoff, Chad Hayes, Ram Perumal, Xu Wang, Jesse Poland, Geoffrey P. Morris. (2023). Genomics and Phenomics Enabled Prebreeding Improved Early-Season Chilling Tolerance in Sorghum. **G3 Genes| Genomes| Genetics**
6. Veerendra Sharma, **Sandeep Marla**, Wenguang Zheng, Divya Mishra, Jun Huang, Wei Zhang, Geoffrey P. Morris, David E. Cook. (2022). RNA silencing by CRISPR in plants does not require Cas13. **Genome Biology**
7. Jacques Faye, Fanna Maina, Eyanawa Akata, Bassirou Sine, Cyril Diatta, Aissata Mamadou, **Sandeep Marla**, Sophie Bouchet, Niaba Teme, Jean-Francois Rami, Daniel Fonceka,

Ndiaga Cisse, Geoffrey P. Morris. (2021). A Genomics Resource for Genetics, Physiology, and Breeding of West African Sorghum. **The Plant Genome**

8. Marcus O. Olatoye, **Sandeep R. Marla**, Zhenbin Hu, Sophie Bouchet, Ramasamy Perumal, and Geoffrey P. Morris. (2020). Dissecting adaptive traits with nested association mapping: Genetic architecture of inflorescence morphology in sorghum. **G3 Genes| Genomes| Genetics**
9. Rajdeep Singh Khangura, Bala Venkata, **Sandeep Marla**, Michael Mickelbart, Singha Dhungana, David Braun, Brian Dilkes, Guri Johal. (2020). Interaction between induced and natural variation at *oil yellow1* delays flowering in maize. **G3 Genes| Genomes| Genetics**
10. **Sandeep R. Marla**, Gloria Burow, Ratan Chopra, Chad Hayes, Marcus O. Olatoye, Terry Felderhoff, Zhenbin Hu, Ramasamy Perumal, and Geoffrey P. Morris. (2019). Genetic architecture of chilling tolerance in sorghum dissected with a nested association mapping population. **G3 Genes| Genomes| Genetics**
11. Zhenbin Hu, Marcus Olatoye, **Sandeep Marla**, Geoffrey Morris. (2019). An integrated genotyping-by-sequencing polymorphism map for over 10,000 sorghum genotypes. **The Plant Genome**
12. Rajdeep S. Khangura, **Sandeep Marla**, Bala P. Venkata, Nicholas J. Heller, Gurmukh S. Johal, Brian P. Dilkes. (2018). A *Very Oil Yellow1* modifier of the *Oil Yellow1-N1989* allele uncovers a cryptic phenotypic impact of cis-regulatory variation in maize. **G3 Genes| Genomes| Genetics**
13. **Sandeep R. Marla**, Kevin Chu, Satya Chintamanani, Dilbag S. Multani, Antje Klempien, Alyssa DeLeon, Kim Bong-suk, Larry D. Dunkle, Brian P. Dilkes, Gurmukh S. Johal. (2018). Adult plant resistance in maize to northern leaf spot is a feature of partial loss-of-function alleles of *Hm1*. **PLOS Pathogens**
14. Xu Wang, Ph.D.; Daljit Singh; **Sandeep Marla**; Geoffrey P. Morris; Jesse A. Poland. (2018) Field-based high-throughput phenotyping of plant height in sorghum using different sensing technologies. **Plant Methods**
15. Fanna Maina, Sophie Bouchet, **Sandeep R. Marla**, Zhenbin Hu, Jianan Wang, Aissata Mamadou, Magagi Abdou, Abdoul-Aziz Saïdou, Geoffrey P. Morris. (2018) Population genomics of sorghum (*Sorghum bicolor*) across diverse agroclimatic zones of Niger. **Genome**
16. **Sandeep R. Marla**, Sunitha Shiva, Ruth Welti, Sanzhen Liu, John Burke, and Geoffrey P. Morris. (2017). Comparative transcriptome and lipidome analyses reveal molecular chilling responses in chilling-tolerant sorghums. **The Plant Genome**
17. Sophie Bouchet, Marcus O. Olatoye, **Sandeep R. Marla**, Ramasamy Perumal, Tesfaye Tesso, Jianming Yu, Mitch Tuinstra, and Geoffrey P. Morris. (2017). Increased power to dissect adaptive traits in global sorghum diversity using a nested association mapping population. **Genetics**
18. Junping Chen, Ratan Chopra, Chad Hayes, Geoffrey Morris, **Sandeep Marla**, John Burke, Zhanguo Xin, and Gloria Burow. (2017). Genome-wide association study of developing leaves' heat tolerance during vegetative growth stages in a sorghum association panel. **The Plant Genome**
19. Olukolu BA, Wang GF, Vontimitta V, Venkata BP, **Marla S**, Ji J, Gachomo E, Chu K, Negeri A, Benson J, Nelson R, Bradbury P, Nielsen D, Holland JB, Balint-Kurti PJ, and Johal, G. (2014). Genome-wide association study identifies specific biochemical pathways controlling the maize hypersensitive defense response. **PLOS Genetics**
20. Olukolu BA, Negeri A, Dhawan R, Venkata BP, Sharma P, Garg A, Gachomo E, **Marla S**, Chu K, Hasan A, Ji J, Chintamanani S, Green J, Shyu CR, Wisser R, Holland J, Johal G, Balint-

Kurti P. (2013). A connected set of genes associated with programmed cell death implicated in controlling the hypersensitive response in maize. **Genetics**

21. **S. R. Marla**, R. Huettel, and J. Mosjidis. (2008). Evaluation of *Crotalaria juncea* populations as a summer cover crop to manage *Meloidogyne incognita* and *Rotylenchulus reniformis*. **Nematropica**

BOOK CHAPTERS

1. **Sandeep R. Marla**. Cloning of economically significant sorghum mutant genes. (2016). The Sorghum Genome, Compendium of Plant Genomes. Ed. S. Rakshit and Ed. Y.H. Wang. Springer International Publishing AG. 243-255.

2. Srikanth Bollam, Mahesh Mahendrakar, **Sandeep Marla**, Vinutha Kanuganahalli, Krishnam Raju A, Rakesh K. Srivastava. (2023). Pearl millet: Genetic Improvements, Genomic Approaches and Accelerated Breeding.

K-12 OUTREACH EXPERIENCE

2011 Taught Mendelian genetics to high-school students (juniors and seniors) on "How to make plants resistant to diseases?" using maize–CCR1 pathosystem, Tri-county High School, Wolcott, IN

MENTORING EXPERIENCE

2018 Summer Undergraduate Research Intern at Kansas State University

2015– Five PhD and 2 MS students at Kansas State University

2012 Two PULSe (Purdue University Interdisciplinary Life Science Program) graduate students during their lab rotations in Dr. Gurmukh Johal lab, Purdue University

2012 Purdue SURF (Summer Undergraduate Research Fellowships) trainee, Purdue University. My former student is currently pursuing her PhD in Plant Pathology at Cornell University

LEADERSHIP ACTIVITIES

2017–2021 Co-chair, K-State Post-doctoral Association, Kansas State University

2016–2017 Chair for Professional Development, K-State Post-doctoral Association, Kansas State University

2011–2012 President, Botany and Plant Pathology Graduate Student Organization, Purdue University

PROFESSIONAL ACTIVITIES AND AFFILIATIONS

2008 Gamma Sigma Delta, Auburn Chapter

2008 Certified base and Advanced SAS programmers for SAS® 9

2017–2021 Co-Chair, Kansas State University Post-Doctoral Association