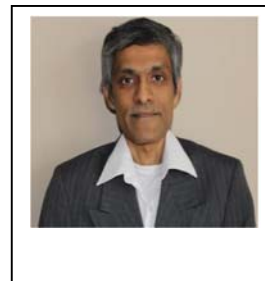


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Education

Ph.D. University of Pune/ National Chemical Laboratory (1995) Chemistry (Biochemistry/Plant Molecular Biology)

M.Phil. Hyderabad Central University (1990) Life Sciences (Biochemistry)

M.Sc. Hyderabad Central University (1988) Life Sciences (Biochemistry)

Experience

1995-1997 Research Associate National Chemical Lab, Pune
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1997-2003 Post-doctoral Fellow, Purdue University , West Lafayette, IN, USA
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2003-2009 Assistant Professor, Michigan Technological University , Houghton, MI, USA

2009-2015 Associate Professor, Michigan Technological University , Houghton, MI, USA

Professional Recognition/Awards/Scholarship

- Panel member for United States Department of Agriculture Plant Biology panel (2011)
- 1890 Institution Teaching, Research and Extension Capacity Building Grants Program of USDA (2012)
- Reviewer for competitive grant programs: National Science Foundation (NSF); U.S. Civilian Research and Development Fund; The United States - Israel Binational Agricultural Research and Development (BARD) Fund; Michigan Tech Research Excellence Fund (REF); Century II Campaign Endowed Equipment (C2E2) Fund
- 1990-1994: UGC-CSIR Junior and Senior Research Fellowship

Peer recognition

Editorial Board Member of Journals: Environmental & Analytical Toxicology; Frontiers in Plant Biotechnology (Reviews Editor); TheScientificWorldJournal and SOJ Biotechnology.

Areas of Interest/ specialization

- Plant growth promoting bacteria and their role in enhancing biomass, heavy metal remediation and soil health
- Systems Biology (Genomics, Proteomics and Metabolomics) to understand plant-microbe interactions
- Development of novel plant natural products as anti-cancer drugs

Publications

1. Sripathi SR, Sylvester O, He W, Moser T, Um JY, Lamoke F, Ramakrishna W, Bernstein PS, Bartoli M, Jahng WJ. Prohibitin as the molecular binding switch in the retinal pigment epithelium. **Protein J** In Press [*Impact factor (IF) = 0.9*]
2. Dhawi F, Datta R, Ramakrishna W. (2015) Mycorrhiza and PGPB modulate maize biomass, nutrient uptake and metabolic pathways in maize grown in mining-impacted soil. **Plant Physiol Biochem** 97:390-399 [*IF = 3.3*]
3. Dhadi SR, Xu Z, Shaik R, Driscoll K, Ramakrishna W. (2015) Differential regulation of genes by retrotransposons in rice promoters. **Plant Mol Biol** 87:603-613 [*IF = 4.3*]
4. Li K, Pidatala VR, Shaik R, Datta R, Ramakrishna W. (2014) Integrated metabolomic and proteomic approaches dissect the effect of metal resistant bacteria on maize biomass and copper uptake. **Environ Sci Technol** 48:1184–1193. [*IF = 5.5*]
5. Shaik R, Ramakrishna W. (2014) Machine learning approaches distinguish multiple stress conditions using stress-responsive genes and identify candidate genes for broad resistance in rice. **Plant Physiol** 164:481-495. [*IF = 7.9*]
6. Shaik R, Ramakrishna W. (2013) Genes and co-expression modules common to drought and bacterial stress responses in Arabidopsis and rice. **PLoS One** 8:e77261. [*IF = 3.5*]
7. Dhadi SR, Deshpande A, Driscoll K, Ramakrishna W. (2013) Major cis-regulatory elements for rice bidirectional promoter activity reside in the 5'-untranslated regions. **Gene** 526:400–410. [*IF = 2.3*]
8. Rafi S, Ramakrishna W. (2012) Bioinformatic analysis of epigenetic and microRNA mediated regulation of drought responsive genes in rice. **PLoS One** 7:e49331. [*IF = 3.5*]
9. Li K, Pidatala RR, Ramakrishna W. (2012) Mutational, proteomic and metabolomic analysis of a plant growth promoting copper-resistant *Pseudomonas* spp. **FEMS Microbiol Lett** 335: 140–148. [*IF = 2.7*]
10. Deshpande AD, Dhadi SR, Hager E, Ramakrishna W. (2012) Rice callus suspension cultures inhibit growth of two cancer cell lines. **Phytotherapy Res** 26:1075–1081. [*IF = 2.4*]
11. Krom N, Ramakrishna W. (2012) Retrotransposon insertions in rice gene pairs associated with reduced conservation of gene pairs in grass genomes. **Genomics** 99:308-314. [*IF = 2.9*]
12. Dhadi SR, Deshpande A, Ramakrishna W. (2012) A novel non-wounding transient expression assay for cereals mediated by *Agrobacterium tumefaciens*. **Plant Mol Biol Rep** 30:36-45. [*IF = 2.4*]
13. Li K, Ramakrishna W. (2011) Effect of multiple metal resistant bacteria from contaminated lake sediments on metal accumulation and plant growth. **J. Hazardous Materials** 189:531-539. [*IF = 5.1*]
14. Xu Z, Rafi S, Ramakrishna W. (2011) Polymorphisms and evolutionary history of retrotransposon insertions in rice promoters. **Genome** 54:629-638. [*IF = 1.6*]
15. Krom N, Ramakrishna W. (2010) Conservation, rearrangement, and deletion of gene pairs during the evolution of four grass genomes. **DNA Res** 17:343-352. [*IF = 5*]
16. Dhadi SR, Krom N, Ramakrishna W. (2009) Genome-wide comparative analysis of putative bidirectional promoters from rice, *Arabidopsis*, and *Populus*. **Gene** 429:65-73. [*IF = 2.3*]
17. Krom, N, Ramakrishna W. (2008) Comparative analysis of divergent and convergent gene

- pairs and their expression patterns in rice, Arabidopsis, and *Populus*. **Plant Physiol** 147:1763-1773. [IF = 7.9]
18. Krom, N, Recla J, Ramakrishna W. (2008) Analysis of genes associated with retrotransposons in the rice genome. **Genetica** 134:297-310. [IF = 1.8]
 19. Xu Z, Ramakrishna W. (2008) Retrotransposon insertion polymorphisms in six rice genes and their evolutionary history. **Gene** 412:50-58. [IF = 2.3]
 20. Oakley RV, Wang Y-S, Ramakrishna W., Harding SA, Tsai C-J. (2007) Differential expansion and expression of α - and β -tubulin gene families in *Populus*. **Plant Physiol** 145:961-973. [IF = 7.9]
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 22. Gorantla M, Babu P, Reddy Lachagari V, Reddy A, Wusirika R., Bennetzen JL, Reddy AR. (2007) Identification of stress-responsive genes in an *indica* rice (*Oryza sativa* L.) using ESTs generated from drought-stressed seedlings. **J Exp Bot** 58:253-265. [IF = 5.8]
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 27. Swigonova Z, Lai JS, Ma JX, Ramakrishna W., Llaca M, Bennetzen JL, Messing J. (2004) On the tetraploid origin of the maize genome. **Comp Funct Genomics** 5:281-284. [IF = 1.8]
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 29. Ramakrishna W., Dubcovsky J, Park Y-J, Busso C, Emberton J, SanMiguel P, Bennetzen JL. (2002) Different types and rates of genome evolution detected by comparative sequence analysis of orthologous segments from four cereal genomes. **Genetics** 162:1389-1400. [IF = 4.9] **Recommended by Faculty 1000** (<http://f1000.com/prime/1010750>)
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- order and orientation differentiate grass genomes. **Plant Mol Biol** 48:821-827. [IF = 4.1]
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- minisatellite loci in rice. **Cereal Res Communication** 27:365-371. [IF = 0.6]
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 53. Ramakrishna W, Lagu MD, Gupta VS, Ranjekar PK. (1994) DNA fingerprinting in rice with oligonucleotide probes specific for simple repetitive DNA sequences. **Theor Appl Genet** 88:402-406. [IF = 3.5]
 54. Gupta VS, Ramakrishna W, Rawat SR, Ranjekar PK. (1994) (CAC)₅ detects DNA fingerprints and sequences homologous to gene transcripts in rice. **Biochem Genet** 32:1-8. [IF = 0.8]

Book Chapters

1. Li K, Ramakrishna W. Essential information. **Genetics, Genomics and Breeding of Maize**. Edited by Ramakrishna W, Bohn M and Lai J. CRC Press (in press).
2. Shaik R. Ramakrishna W. Comparative genomics. **Genetics, Genomics and Breeding of Maize**. Edited by Ramakrishna W, Bohn M and Lai J. CRC Press (in press).
3. Ramakrishna W, Li K, Phillips RL, Bennetzen JL. (2011) *Zea*. **Wild Crop Relatives: Genomic and Breeding Resources** Edited by Kole C. Springer Verlag. 457-488.
4. Ramakrishna W, Bennetzen JL. (2003) Genomic colinearity as a tool for plant gene isolation. **Plant Functional Genomics, Methods in Molecular Biology** Edited by Grotewold E. Humana Press. 236:109-122.

Presentations in International Conferences

1. Dhawi F, Tarasoff C, Datta R, Ramakrishna W. Using big bluestem (*Andropogon Gerardii*) for restoration of metal contaminated stamp sands in Upper Peninsula, Michigan. Geological Society of America, Vancouver, British Columbia, Canada, October 19-22, 2014.

2. Ivancich MW, Shaik R, Ramakrishna W. SRGPs: An online resource for comparative analysis of stress responsive genes in plants. PAG XXI Conference, San Diego, CA, January 12-16, 2013.
3. Shaik R, Ivancich MW, Ramakrishna W. Meta-analysis of microarray studies identifies distinct molecular profiles of abiotic and biotic stress responses in plants. PAG XXI Conference, San Diego, CA, January 12-16, 2013.
4. Shaik R, Ramakrishna W. Epigenetic and microRNA mediated regulation of drought responsive genes in rice. Genomics Research, Boston, MA, April 19-20, 2012.
5. Dhadi SR, Ramakrishna W. Dissection of cis-regulatory code of bidirectional promoters in rice and other grass genomes. PAG XIX Conference, San Diego, CA, January 15-19, 2011 (Oral presentation).
6. Dhadi SR, Ramakrishna W. Functional analysis of bidirectional promoters in rice. PAG XIX Conference, San Diego, CA, January 15-19, 2011.
7. Li K, Ramakrishna W. Multiple metal resistant bacteria from metal contaminated Lake sediments promote metal accumulation and plant growth. PAG XIX Conference, San Diego, CA, January 15-19, 2011.
8. Datta R, Ramakrishna W, Sarkar D. Biofuel feedstock production on marginal lands. Consortium of Plant Biotechnology Research. Washington DC, February 2011.
9. Xu Z, Ramakrishna W. Evolutionary origin of retrotransposons inserted in rice promoters and genes and the effect of retrotransposon insertions in promoters on gene regulation. Annual Maize Genetics Conference, St. Charles, IL, March 12-15, 2009.
10. Kumar D, Dhadi SR, Krom N, Ramakrishna W. Dissecting cis-regulatory code of putative bidirectional promoters in cereal genomes. Annual Maize Genetics Conference, St. Charles, IL, March 12-15, 2009.
11. Ramakrishna W, Krom N. Conservation and expression patterns of divergent and convergent gene pairs and bidirectional promoters in plant genomes. International Grass Genome Initiative Workshop, PAG XVII Conference, San Diego, CA, January 10-14, 2009 (Oral presentation).
12. Krom N, Ramakrishna W. Conservation and expression of gene pairs and retrotransposon-associated genes in plant genomes. PAG XVII Conference, San Diego, CA, January 10-14, 2009.
13. Dhadi SR, Krom N, Ramakrishna W. Identification and characterization of bidirectional promoters in the rice genome: A pilot scale study. Genes to Products: Agricultural Plant, Microbe and Biobased Product Research, USDA Project Directors' Meeting, Washington DC, April 16-18, 2008.
14. Krom N, Dhadi SR, Ramakrishna W. Comparative analysis of divergent and convergent gene pairs, their expression patterns, and bidirectional promoters in rice, *Arabidopsis*, and *Populus*. 50th Annual Maize Genetics Conference, Washington DC, Feb. 27 - March 1, 2008.
15. Xu Z, Krom N, Ramakrishna W. Retrotransposon insertion polymorphisms in six rice genes and their evolutionary history. 50th Annual Maize Genetics Conference, Washington DC, Feb. 27 - March 1, 2008.

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17. Abdullahi AS, Wusirika R, Gretz MR. Phylogenetic analysis and differential expression of glycosyl transferase gene homologues from the model diatom *Thalassosira pseudonana*. J. Phycology, Vol. 42, pp. 46, Suppl. 1, Meeting Abstract: 149 April 2006.
18. Ervin N, Tso-Ching L, Ramakrishna W, Xu Z, Patricia K, Phillip S, Chiu-Ping C, Li J, Schertz K, Dunkle L, Bennetzen J. Mapping and characterization of the sorghum *pc* gene: a host disease resistance gene corrupted to assist infection by a fungal necrotroph. 48th Annual Maize Genetics Conference, Pacific Grove, CA, March 9-12, 2006.
19. Krom N, Ramakrishna W. Organization, evolution and expression of divergent and convergent gene pairs in rice. PAG Conference, San Diego, CA, January 14-18, 2006.
20. Xu Z, McCormick M, Ramakrishna W. Organization and evolution of genes with retrotransposon insertions in rice and maize. Plant Genetics, Mechanisms of Genetic Variation, Snowbird, Utah, October 12-16, 2005.
21. Swigonova Z, Lai J, Ma J, Ramakrishna W, Llaca V, Bennetzen JL, Messing J. On the tetraploid origin of maize genome. PAG XII Conference, San Diego, CA, January 10-14, 2004 (Oral presentation).
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23. Gorantla M, Babu PR, Ramakrishna W, Sekhar K, Bennetzen JL, Reddy AR. Identification of stress responsive genes in rice using ESTs generated from drought stressed seedlings. PAG XII Conference, San Diego, CA, January 10-14, 2004.
24. Ramakrishna W, Emberton J, SanMiguel P, Bennetzen J. Sequence analysis and organization of the *Rp1* complex in maize. PAG XI Conference, San Diego, CA, January 11-15, 2003.
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26. Ramakrishna W, Emberton J, SanMiguel P, Ogden M, Llaca V, Linton E, Messing J, Bennetzen J. Sequence and physical map analyses of the maize and sorghum *Rp1* complex uncovers numerous sites and unexpected mechanisms of local rearrangement. 44th Maize Genetics Conference, Orlando, FL, March 14-17, 2002 (Oral presentation).
27. Ma J, SanMiguel P, Dubcovsky J, Shiloff B, Rostoks N, Jiang Z, Busso C, Kleinhofs A, Devos K, Ramakrishna W, Bennetzen J. Genic rearrangements of *Wx1* homologous regions in barley, maize, pearl millet, rice, sorghum and diploid wheat revealed by comparative sequence analysis. 44th Maize Genetics Conference, Orlando, FL, March 14-17, 2002.
28. Maibe S, Belele C, Chandler VL, Ramakrishna W, Bennetzen J. A transcriptional enhancer and sequences required for *b1* paramutation co-localize in a region ~100 kb upstream of the *b1* transcription start site. 44th Maize Genetics Conference, Orlando, FL, March 14-17, 2002.
29. Ramakrishna W, Ma J, SanMiguel P, Emberton J, Shiloff B, Jiang Z, Dubcovsky J, Kleinhofs A, Messing J, Bennetzen J, Rostoks N, Busso C, Ogden M, Linton E, Devos K. Frequent genic rearrangements in two regions of grass genomes identified by comparative sequence

- analysis. Plant, Animal & Microbe Genomes (PAMG) X Conference, San Diego, CA, January 12-16, 2002 (Oral presentation).
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 34. Yan L, Echenique V, Busso C, Ramakrishna W, SanMiguel P, Bennetzen J, Harrington S, Dubcovsky J. Organization, structure and expression of the genes encoding SNF2-like proteins in cereal plants. PAMG X Conference, San Diego, CA, January 12-16, 2002.
 35. Ma J, SanMiguel PJ, Dubcovsky J, Shiloff BA, Rostocks N, Jiang Z, Busso CS, Kleinhofs A, Devos KM, Ramakrishna W, Bennetzen JL. Comparative sequence analysis of homologous *wx1* regions in barley, maize, pearl millet, rice, sorghum and diploid wheat. PAMG X Conference, San Diego, CA, January 12-16, 2002.
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 40. Llaca V, Linton E, Ramakrishna W, Nevill-Maning C, Young S, Kavchok S, SanMiguel P, Bennetzen J, Messing J. Collinearity of sorghum and maize at the DNA level. PAG IX Conference, San Diego, CA, January 13-17, 2001.
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43. Ramakrishna W, Dominguez JR, Handa AK. Differential expression and promoter analysis of fruit specific tomato pectin methylesterase genes. Plant Biology, San Diego, CA, July 15-19, 2000.
44. Ramakrishna W, Deng Z, Handa A. Functional genomics of tomato fruit quality attributes. Plant Biology, Baltimore, MD, July 24-28, 1999.
45. Deng Z, Ramakrishna W, Handa A. Molecular characterization and genomic organization of a gene designated bot 1 that regulates consistency of tomato fruit juice. Plant Biology, Baltimore, MD, July 24-28, 1999.
46. Ramakrishna W, Chowdari V, Rajebhosale M, Kumar LS, Gupta VS, Ranjekar PK. Use of RFLP & allied approaches in rice breeding in India. Plant Genome III Conference, San Diego, CA, January, 1995.
47. Ranjekar PK, Ramakrishna W, Chowdari KV, Lagu MD, Gupta VS. DNA fingerprinting in rice using simple repetitive DNA sequences and their characterization in rice. Plant Genome II Conference, San Diego, CA, January, 1994.

Research Grants Completed

Bioactive Components in Rice Callus Culture and Blueberry Extract as Anti-inflammatory Agents of the Gastrointestinal Tract.

Funded by United States Department of Agriculture (2/2014-8/2015)

PI: Aparna Deshpande

Co-PI: Ramakrishna Wusirika

Pilot Project with Natural Bacteria and Plants for Remediating Contaminated Mining Site.

Funded by Source: Superior Ideas (4/2014-3/2015)

PI: Ramakrishna Wusirika

Rice Callus: A Side-Effect-Free Solution to Cancer.

Funded by Source: Superior Ideas (8/2013-7/2014)

PI: Ramakrishna Wusirika

Bioactive fractions of rice callus suspension culture with anticancer activity.

Funded by Source: Michigan Research Excellence Fund (6/2014-5/2015)

PI: Aparna Deshpande

Co-PI: Ramakrishna Wusirika

Identification and characterization of bidirectional promoters in the rice genome.

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