

Madan Kumar Bhattacharyya

G303 Agronomy Hall,
Department of Agronomy
Iowa State University Ames, Iowa 50011-1010
Phone:(515)-294-2505, Fax:(515)-294-2299 E-mail: mbhattac@iastate.edu
<http://www.public.iastate.edu/~mbhattac/bhattacharyya/lab.htm>
<http://soysdsresistance.ag.iastate.edu/>
<http://scholar.google.com/citations?user=ZSvP6SsAAAAJ&hl=en>

EDUCATION

1987	Ph.D., Plant Sciences	University of Western Ontario	Canada
1978	M.Sc., Olericulture	Punjab Agricultural University	India
1975	B.Sc., (Ag.)	Assam Agricultural University	India

PROFESSIONAL EXPERIENCE

2014-present	Professor	Department of Agronomy, ISU
2003-2014	Associate Professor	Department of Agronomy, ISU
2000-2003	Assistant Professor	Department of Agronomy, ISU
1997-2000	Associate Scientist	Noble Foundation
1996-2000	Adjunct Assistant Professor	Oklahoma State University
1991-1996	Assistant Scientist	Noble Foundation
1990-1991	Postdoctoral Fellow	Noble Foundation
1987-1990	Higher Scientific Officer	John Innes Institute
1983-1987	Graduate Assistant	University of Western Ontario
1980-1982	Assistant Professor	Assam Agricultural University
1978-1980	Senior Research Assistant	Assam Agricultural University

HONORS AND AWARDS

1971-1975	Indian Council of Agricultural Research Scholarship
1975	University Gold Medal for obtaining first position in B.Sc. (Ag.)
1975-1978	IDA Fellowship
1983-1987	Canadian Commonwealth Scholarship
1983	Ruth Horner Arnold Fellowship
2015-2018	PSI Faculty Fellow

TEACHING EXPERIENCE:

Bhattacharyya taught Plant Genetics (Agron527) and teaches Applied Molecular Genetics & Biotechnology (Agron524) courses to graduate students.

EDITORIAL BOARD MEMBER/ASSOCIATE EDITOR

- Associate Editor - BMC Plant Biology, 2009-
- Associate Editor - BMC Plant Biology, 2010-
- Editorial Board member - Molecular Biotechnology, 2008 –
- Review Editorial Board - Agricultural Biol. Chemistry, Frontiers in Chemistry, 2014 -

PATENT AWARDS AND INVENTIONS

Patent Award

Bhattacharyya, M.K. “*Rps1-k* Gene Family, Nucleotide Sequences, and Proteins.” U.S. Patent No. 7,256,323 - Issued 8/14/2007.

Bhattacharyya, M.K. “*Rps1-k* Nucleotide Sequence and Proteins.” U.S. Patent No. 7,696,410 - Issued 4/13/2010.

Bhattacharyya, M.K. “Metacaspase II in Engineering Soybean for Disease Resistance.” U.S. Patent No. 7,943,825 - Issued 5/17/2011.

Bhattacharyya, M.K., Li, S. "Compositions and Methods for Enhancing Disease Resistance in Plants." U.S. Patent No. 8,173,794 - Issued 5/8/2012.

Patent Applications Filed

Bhattacharyya, M.K., Kambakam, S., Singh, P., Ngaki, M., “Arabidopsis Nonhost Resistance Genes(s) and Use Thereof to Engineer SDS Resistant Plants.” U.S. Prov. ID No. 62/100,306 – Filed 1/6/2015.

Bhattacharyya, M.K., Kambakam, S., Singh, P., Ngaki, M., “Glycine Max Resistance Genes(s) and Use Thereof to Engineer SDS Resistant Plants.” U.S. Prov. ID No. 62/100,312 – Filed 1/6/2015.

Bhattacharyya, M.K., and Sumit R., Identification and Application Arabidopsis Nonhost Resistance Gene(s) in Creating Disease Resistant Soybean Cultivars. U.S. Prov. ID No. 61/651,149 – Filed 5/24/2012; U.S. Ser. No. 13/783,682 - Filed 3/4/2013.

Bhattacharyya, M.K., and Pudake, R., “Modification Of Plants For FvTox1-Interacting Protein Carbonic Anhydrase To Enhance Foliar SDS Disease Resistance And Improve Yield.” U.S. Prov. ID No. 61/479,464 – Filed 4/27/2011; U.S. Ser. No. 13/457,858 – Filed 4/27/2012.

Bhattacharyya, M.K., Brar, H., “FvTox1-Interacting Proteins for Identifying and Introgressing SDS Resistance in Plants.” U.S. Prov. ID No. 61/479,460 – Filed 4/27/2011.

Bhattacharyya, M.K., Brar, H., “Use of plant antibodies in fighting pathogen toxin-induced plant diseases such as SDS in soybean.” U.S. Prov. ID No. 61/455,686 - Filed 10/25/2010; U.S. Ser. No. 13/280,801 – Filed 10/25/2011.

Bhattacharyya, M.K., Xu, M. and Palmer, R. “Transposable Elements in *Glycine max* And Methods of Use." U.S. Prov. ID No. 61/137,555 – Filed 7/31/2008; U.S. Ser. No. 12/533,792 - Filed 7/31/2009.

Disclosures Filed

Bhattacharyya, M.K., Brar, H., “A *Fusarium virguliformae* toxin gene in engineering soybean for SDS resistance.” Filed 6/21/2007.

Bhattacharyya, M.K., Pandey, S., “Development and Use of a Micro-Fluidic Technology for Identifying Chemicals that are Toxic to Oomycete Pathogens.” Filed 10/19/2010.

Bhattacharyya, M.K., “Engineering Crop Species for Nematode Resistance.” ISURF #03925 – Filed 4/28/2011.

Bhattacharyya, M.K., Sahu, B.B., “A Soybean Promoter Induced by Pathogen Infection.” ISURF #04034 – Filed 5/25/2012.

Bhattacharyya, M.K., Wang, B., “Synthetic Peptide Binders to FvTox1 in Foliar SDS in Soybean.” ISURF # 04277 – Filed 8/6/2014.

PUBLICATIONS (<http://scholar.google.com/citations?user=ZSvP6SsAAAAJ&hl=en>)

Peer Reviewed Journal Articles (* indicates the corresponding authors)

- Zhen Xu, Huawei Jiang, Binod Bihari Sahu, Sekhar Kambakam, Prashant Singh, Xinran Wang, Qiugu Wang, **Madan K. Bhattacharyya**, and Liang Dong* (2015) High-throughput humidity assay for plant-pathogen interactions in miniature controlled discrete humidity environments. *Lab On A Chip*, *under review*.
- Abeyssekara, N.S., Desai, N., Guo, L., and **Bhattacharyya, M.K.*** (2015) The Plant immunity inducer pipelicolic acid accumulates in the xylem sap and leaves of soybean seedlings following *Fusarium virguliforme* infection. *Plant Science*, in press.
- Wang, B., Zhang, B, Ye, J.Y., and **Bhattacharyya, M.K.*** (2015) Identification of *Fusarium virguliforme* FvTox1- interacting synthetic peptides for enhancing foliar sudden death syndrome resistance in soybean. *PLoS One*, in press.
- Swaminathan, S., Abeyssekara, N.S., Liu, M, Cianzio, C.R. and **Bhattacharyya, M.K.*** (2015) Identification of quantitative trait loci underlying the sensitivity of soybean to the *Fusarium virguliforme* toxins that induce foliar soybean sudden death syndrome in soybean. *Theor. Appl. Genet.*, in press.
- Min Liu, †Shuxian Li, Sivakumar Swaminathan, Binod B. Sahu, Leonor F. Leandro, Andrea J. Cardinal, **Madan K. Bhattacharyya**, Qijian Song, *David R. Walker, and *Silvia R. Cianzio (2015) Identification of a soybean rust resistance gene in PI 567104B. *Theor. Appl. Genet.*, in press.
- Cianzio, S.R.* ,P. Lundeen, **M. K. Bhattacharyya**, S. Swaminathan, G. Gebhart, and N. Rivera-Velez. (2015) Registration of AR11SDS soybean germplasm resistant to sudden death syndrome, soybean cyst nematode and with adequate iron deficiency chlorosis. *Journal of Plant Registrations* 9: (in press)
- Cianzio, S.R.*, **Bhattacharyya, M.K.**, Swaminathan, S, Westgate, M., Gebhart, G., Rivera-Velez, N, Lundeen, P., VanDerMolen, K. and Prusky. T. (2014) Registration of ‘AR10SDS’ soybean germplasm partially resistant to sudden death syndrome and resistance to soybean cyst nematode. *J. Plant Regist.* 8:200-210.
- Abeyssekara, N.S., and **Bhattacharyya, M.K.*** (2014) Analyses of the xylem sap proteomes identified candidate *Fusarium virguliforme* proteinacious toxins. *PLoS One*. 9:e93667. doi: 10.1371/journal.pone.0093667.
- Srivastava, S.K., Brar, H.K., Fakhoury, A.M., Bluhm, B.H., Huang, X., and **Bhattacharyya, M.K.*** (2014) The genome sequence of the fungal pathogen *Fusarium virguliforme* that causes sudden death syndrome in soybean. *PLoS One* 9:e81832. doi: 10.1371/journal.pone.0081832.
- Hughes, T.J.*, O’Donnel, K., Rooney, A.P., Sink, S., Scandiani, M.M., Luque, A., **Bhattacharyya, M.K.**, and Huang, X. (2014) Genetic architecture and evolution of the mating type locus in fusaria that cause soybean sudden death syndrome and bean root rot. *Mycologia*, 106:686-697.
- Ott, A., Yang, Y., **Bhattacharyya, M.K.**, Horner, H.T., Palmer, R.G., and Sandhu, S.* (2013) Molecular mapping of *D1*, *D2* and *ms5* revealed linkage between the cotyledon color

- locus *D2* and the male-sterile locus *ms5* in soybean. *Plants* 2:1-x. doi:10.3390/plants20x000x.
- Luckew A.S., Leandro, L.F., **Bhattacharyya, M.K.**, Nordman, D.J. Lightfoot, D.A., and Cianzio S.R.* (2013) Usefulness of 10 genomic regions in soybean associated with sudden death syndrome resistance. *Theor. Appl. Genet.* DOI 10.1007/s00122-013-2143-4.
- Pudake, R.N., Sahu, B.B., Swaminathan, S., Leandro, L.F., and **Bhattacharyya, M.K.*** (2013) Investigation of the *Fusarium virguliforme* *fvtox1* mutants revealed that the FvTox1 toxin is involved in foliar sudden death syndrome development in soybean. *Current Genetics* DOI 10.1007/s00294-013-0392-z.
- Geiser, D.M.*, Aoki, T., Bacon, C.W., Baker, S.E., **Bhattacharyya, M.K.** et al. (2012) One Fungus, One Name: Defining the genus *Fusarium* in a scientifically robust way that preserves longstanding use. *Phytopathology*, <http://dx.doi.org/10.1094/PHYTO-07-12-0150-LE>.
- Raval, J., Baumbach, J., Ollhoff, A.R., Palmer, R.G., **Bhattacharyya, M.K.**, and Sandhu, D.* (2012) A candidate male-fertility female-fertility gene tagged by the soybean endogenous transposon, *Tgm9*. *Funct. Integr. Genomics*, DOI 10.1007/s10142-012-0304-1.
- Baumbach, J., Slattery, R.A., Rogers J.P., Narayanan N.N., Xu, M., Palmer, R.G., **Bhattacharyya, M.K.**, and Sandhu, D.* (2012) Segregation distortion in a region containing a male-sterility, female-sterility locus in soybean. *Plant Science*, 195:151-156.
- Sumit, R., Sahu, B.B., Xu, M., Sandhu, D., and **Bhattacharyya, M.K.*** (2012) Arabidopsis nonhost resistance gene *PSSI* confers immunity against an oomycete and a fungal pathogen but not a bacterial pathogen that cause diseases in soybean. *BMC Plant Biology*, 12:62. (**Highly Accessed**)
- Brar, H.K. and **Bhattacharyya, M.K.*** (2012) Expression of a single-chain variable-fragment antibody against a *Fusarium virguliforme* toxin peptide enhances tolerance to sudden death syndrome in transgenic soybean plants. *Mol Plant Microbe Interact.* 25:817-824. (**Front Cover Article**)
- Sahu, B.B., Sumit, R., and **Bhattacharyya, M.K.*** (2012) Sequence based polymorphic (SBP) marker technology for targeted genomic regions: its application in generating a molecular map of the *Arabidopsis thaliana* genome. *BMC Genomics*, 13:20 doi:10.1186/1471-2164-13-20. (**Highly Accessed**)
- Yang, H., Qiao, X., **Bhattacharyya, M.K.**, and Dong, L.* (2011) Microfluidic droplet encapsulation of highly motile single zoospores for phenotypic screening of an antioomycete chemical. *Biomicrofluidics*, 5: 044103.
- Brar H.K., Swaminathan S., and **Bhattacharyya M.K.*** (2011) The *Fusarium virguliforme* toxin FvTox1 causes foliar sudden death syndrome-like symptoms in soybean. *Mol. Plant-Microbe Interact.*, 24: 1179-1188.
- Mbofung, G.C.Y., Fessehaie, A., **Bhattacharyya, M.K.**, and Leandro, L.F.S.* (2011) A new Taqman real-time PCR assay for quantification of *Fusarium virguliforme* in soil. *Plant Disease*, 95:1420-1426.
- Schmutz, J., Cannon, S.B., Schlueter, J., Ma, J., Hyten, D., Song, Q., Mitros, T., Nelson, W., May, G.D., Gill, N., Peto, M., Goodstein, D., Thelen, J.J., Cheng, J., Sakurai, T., Umezawa, T., Du, J., **Bhattacharyya, M.K.**, Sandhu, D., Grant, D., Joshi, T., Libault,

- M., Zhang, X.-C., Xu, D., Futrell-Griggs, M., Abernathy, B., Hellsten, U., Berry, K., Grimwood, J., Wing, R.A., Cregan, P., Stacey, G., Specht, J., Rokhsar, D., Shoemaker, R.C, and Jackson S.A.* (2010) Genome sequence of the paleopolyploid soybean (*Glycine max* (L.) Merr.). *Nature*, 463:178-83.
- Xu, M., Brar, H., Grosic, S., Palmer, R., and **Bhattacharyya, M.K.*** (2010) Excision of an active CACTA-like transposable element from *DFR2* led to variegated flowers in soybean. *Genetics*, 184:53-63.
- Sandhu, D., Tasma, M.I., Frasch, R. and **Bhattacharyya, M.K.*** (2009) Systemic Acquired Resistance in Soybean is regulated by Two Proteins, Orthologous to Arabidopsis NPR1-*Phytophthora sojae* interaction. *BMC Plant Biology*, 9:105. (**Highly Accessed**)
- Narayanan, N.N., Tasma, I.M., Grant, D., Shoemaker, R., and **Bhattacharyya, M.K.*** (2009) Identification of candidate signaling genes including regulators of chromosome condensation 1 proteins family differentially expressed in the soybean-*Phytophthora sojae* interaction. *Theoretical and Applied Genetics*, 118:399-412.
- Palmer, R. G.,* Sandhu, D., Curran, D. K. and **Bhattacharyya, M. K.** (2008) Molecular Mapping of 36 Soybean Male-sterile, Female-sterile Mutants. *Theoretical and Applied Genetics*, 117:711-719.
- Tasma, I.M., Brendel, V., Whitham S.A., and **Bhattacharyya, M.K.*** (2008) Expression and Evolution of the Phosphoinositide-specific Phospholipase C Gene Family in *Arabidopsis thaliana*. *Plant Physiology and Biochemistry* 46:627-637.
- Gao, H., and **Bhattacharyya M.K.*** (2008) The soybean-*Phytophthora* resistance locus *Rps1-k* encompasses coiled coil-nucleotide binding-leucine rich repeat-like genes and repetitive sequences. *BMC Plant Biol.* 8:29.
- Sandhu, D., Alt, J.L., Fehr, W.F., and **Bhattacharyya, M.K.*** (2007) Enhanced oleic acid content in the soybean mutant M23 is associated with the deletion in the *Fad2-1b* gene encoding a fatty acid desaturase. *Journal of the American Oil Chemists' Society* 84:229-235.
- Cao, Z., Zhang, J., Li, Y., Xu, X., Liu, G., **Bhattacharyya, M.K.**, Yang, H., and Ren, D.* (2007) Preparation of polyclonal antibody specific for AtPLC4, an Arabidopsis phosphatidylinositol-specific phospholipase C in rabbits. *Protein Expression and Purification* 52:306-312.
- Ji, J., Scott, M.P., and **Bhattacharyya, M.K.*** (2006) Light is essential for degradation of ribulose-1,5-biphosphate carboxylase-oxygenase large subunit during sudden death syndrome development in soybean. *Plant Biology* 8:597-605.
- Gao, H., Narayanan, N., Ellison, L., and **Bhattacharyya, M.K.*** (2005) Two classes of highly similar coiled coil-nucleotide binding-leucine rich repeat genes isolated from the *Rps1-k* locus encode *Phytophthora* resistance in soybean. *Mol. Plant-Microbe Interact.* 18:1035-1045. (**Front Cover Article**)
- Bhattacharyya, M.K.***, Narayanan, N.N., Gao, H., Santra, D.K., Salimath, S.S., Kasuga, T., Liu, Y., Espinosa, B., Ellison, L., Marek, L., Shoemaker, R., Gijzen, M., and Buzzell, R.I. (2005) Identification of a large cluster of coiled coil-nucleotide binding site-leucine rich repeat-type genes from the *Rps1* region containing *Phytophthora* resistance genes in soybean. *Theor. Appl. Genet.* 111:75-86.
- Sandhu, D., Schallock K.G., Rivera-Velez, N., Lundeen, P., Cianzio, S., and **Bhattacharyya, M.K.*** (2005) Soybean *Phytophthora* resistance gene *Rps8* maps closely to the *Rps3* region. *J. Heredity* 96:536-541.

- Sandhu, D., Gao, H., Cianzio, S., and **Bhattacharyya, M.K.*** (2004) Deletion of a disease resistance nucleotide-binding-site leucine-rich-repeat-like sequence is associated with the loss of the *Phytophthora* resistance gene *Rps4* in soybean. *Genetics* 168:2157-167.
- Chou, W-M., Shigaki, T., Dammann, C., Liu, Y-Q., and **Bhattacharyya, M.K.*** (2004) Inhibition of phosphoinositide-specific phospholipase C results in the induction of pathogenesis-related genes in soybean. *Plant Biology* 6:664-672.
- Xu, X., Cao, Z., Liu, G., **Bhattacharyya, M.K.**, and Ren, D.* (2004) Cloning and expression of *AtPLC6*, a gene encoding a phosphatidylinositol-specific phospholipase C in *Arabidopsis thaliana*. *Chinese Science Bulletin* 49:567-573.
- Santra, D. K., Sandhu, D., Tai, T., and **Bhattacharyya, M.K.*** (2003) Construction and characterization of a soybean yeast artificial chromosome library and identification of clones for the *Rps6* region. *Funct. Integr. Genomics* 3:153-159.
- Sigaki, T., and **Bhattacharyya, M.K.*** (2002) Nutrients induce an increase in inositol 1,4,5-trisphosphate in soybean cells: Implication for the involvement of phosphoinositide-specific phospholipase C in DNA synthesis. *Plant Biology* 4:53-61.
- MacGregor, T, **Bhattacharyya, M.**, Tyler, B., Bhat, R, Schmitthenner, A.F., and Gijzen, M.* (2002) Genetic and physical mapping of *Avr1a* in *Phytophthora sojae*. *Genetics* 160:949-959.
- Liu, Y.*, Dammann, C., and **Bhattacharyya, M.K.** (2001) The matrix metalloproteinase gene *GmMMP2* is activated in response to pathogenic infections in soybean. *Plant Physiol.* 127:1788-1797.
- Shigaki, T., and **Bhattacharyya, M.K.*** (2000) Phosphate induces rapid H₂O₂ generation in soybean suspension cells. *Plant Biology* 2:149-151.
- Shigaki, T., and **Bhattacharyya, M.K.*** (2000) Decreased inositol 1,4,5-trisphosphate content in pathogen-challenged soybean cells. *Mol. Plant-Microbe Interact.* 13:563-567.
- Shigaki, T., and **Bhattacharyya, M.K.*** (1999) Color coding the cell death status of plant suspension cells. *BioTechniques* 26:1060-1062.
- Salimath, S.S., and **Bhattacharyya, M.K.*** (1999) Generation of a soybean BAC library, and identification of DNA sequences tightly linked to the *Rps1-k* disease resistance gene. *Theoretical and Applied Genetics*, 98: 712-720.
- Bhattacharyya, M.K.***, Gonzales, R. A., Kraft, M., and Buzzell R.I. (1997) A copia-like retrotransposon *Tgmr* closely linked to the *Rps1-k* allele that confers race specific resistance of soybean to *Phytophthora sojae*. *Plant Mol. Biol.* 34:255-264.
- Kasuga, T., Salimath, S.S., Shi, J., Gijzen, M., Buzzell, R., and **Bhattacharyya, M.K.*** (1997) High resolution genetic and physical mapping of molecular markers linked to the *Phytophthora* resistance gene *Rps1-k* in soybean. *Mol. Plant-Microbe Interact.* 10:1035-1044. (**Front Cover**)
- Korth, K.L., Stermer, B.A.*, **Bhattacharyya, M.K.**, and Dixon, R.A. (1997) HMG-CoA reductase gene families that differentially accumulate transcripts in potato tubers are developmentally expressed in floral tissues. *Plant Mol. Biol.* 33:545-551.
- Shi, J., Gonzales, R.A., and **Bhattacharyya, M.K.*** (1996) Identification and characterization of an S-Adenosyl-L-methionine: D²⁴-Sterol-C-methyltransferase cDNA from soybean. *J. Biol. Chem.* 27:9384-9389.
- Gijzen, M.*, MacGregor, T., **Bhattacharyya, M.**, and Buzzell, R. (1996) Temperature induced susceptibility of soybean isolines carrying different *Rps* genes. *Physiol. Mol. Plant Pathol.* 48:209-215.

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- Shi, J., Dixon, R.A., Gonzales, R.A., Kjellbom, P., and **Bhattacharyya, M.K.*** (1995) Identification of cDNA clones encoding valosin-containing protein and other plant plasma membrane-associated proteins by a general immunoscreening strategy. *Proc. Natl. Acad. Sci. USA* 92:4457-4461.
- Shi, J., Gonzales, R.A., and **Bhattacharyya, M.K.*** (1995) Characterization of a plasma membrane associated phosphoinositide-specific phospholipase C from soybean. *Plant J.* 8:381-390. **(Front Cover Article)**
- Bhattacharyya, M.K.,** Paiva, N.L., Dixon, R.A., Korth, K.L., and Stermer, B.A.* (1995) Features of the *hmg1* subfamily of genes encoding HMG-CoA reductase in potato. *Plant Mol. Biol.* 28:1-15.
- Burton, R.A., Bewley, J. D., Smith, A.M., **Bhattacharyya, M.K.,** Tatge, H., Ring, S., Bull, V., Hamilton, W.D.O., and Martin, C.* (1995) Starch branching enzymes belonging to distinct enzyme families are differentially expressed during pea embryo development. *Plant J.* 7:3-15.
- Bhattacharyya, M.K.***, Stermer, B.A., and Dixon, R.A. (1994) Reduced variation in transgene expression from a binary vector with selectable markers at the right and left T-DNA borders. *Plant J.* 6:957-968.
- Dry, I., Smith, A.M., Edwards, A., **Bhattacharyya, M.,** Dunn, P., and Martin, C.* (1992) Characterization of cDNAs encoding two isoforms of granule-bound starch synthase which show differential expression in developing storage organs. *Plant J.* 2:193-202.
- Bhattacharyya, M.K.***, Smith, A.M., Noel Ellis, T.H., Hedley, C., and Martin, C. (1990) The wrinkled-seed character of pea described by Mendel is caused by a transposon-like insertion in a gene encoding starch-branching enzyme. *Cell* 6:115-122. **(Front Cover Article)**
- Ward, E.W.B.*, Cahill, D.M., and **Bhattacharyya, M.K.** (1989) Early cytological differences between compatible and incompatible interactions of soybeans with *Phytophthora megasperma* f. sp. *glycinea*. *Physiol. Mol. Plant Pathol.* 34:267-283.
- Ward, E.W.B.*, Cahill, D.M., and **Bhattacharyya, M.K.** (1989) Abscisic acid suppression of phenylalanine ammonia-lyase activity and mRNA and resistance of soybeans to *Phytophthora megasperma* f. sp. *glycinea*. *Plant Physiol.* 91:23-27.
- Bhattacharyya, M.K.,** and Ward, E.W.B.* (1988) Phenylalanine ammonia-lyase activity in soybean hypocotyls and leaves following infection with *Phytophthora megasperma* f. sp. *glycinea*. *Can. J. Bot.* 66:18-23.
- Bhattacharyya, M.K.,** and Ward, E.W.B.* (1987) Biosynthesis and metabolism of glyceollin I in soybean hypocotyls following wounding or inoculation with *Phytophthora megasperma* f. sp. *glycinea*. *Physiol. Mol. Plant Pathol.* 31:387-405.
- Bhattacharyya, M.K.,** and Ward, E.W.B.* (1987) Temperature-induced susceptibility of soybeans to *Phytophthora megasperma* f. sp. *glycinea*: phenylalanine ammonia-lyase and glyceollin in the host; growth and glyceollin I sensitivity of the pathogen. *Physiol. Mol. Plant Pathol.* 31:407-419.
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- Bhattacharyya, M.K.***, Surjan, S., and Nandpuri, K.S. (1981) Path-coefficient and discriminant function in tomato. *JASS 2 & 3*:7-10.
- Saikia, A.K., Phukan, P.N.*, and **Bhattacharyya, M.K.** (1980) Reaction of tomato cultivars to root knot nematode. *J. Res. Assam Agril. Univ.* 1:217-218.

Non-refereed Journal Articles, and Popular Publications:

- Gresshoff P.M., Stiller, J., Men, A., Radutoiu, S., Pillai, S., Landau-Ellis, D., Chian, R.-J. Ghassemi, F., Bhattacharyya, M., Hussain, A., Lohar, D., and Jiang, Q. (1999) Functional genomics of legumes: map-based cloning and gene trapping advances in soybean and *Lotus japonicus*. In "Highlights of Nitrogen Fixation Research." Eds. E. Martinez and G. Hernandez, Kluwer Academic Plenum publ. New York, pp 173-176.
- Bhattacharyya, M., Bonas, U., Gelvin, S., Harrison, M., Huguet, E., Kanyuka, K., Kijne, J., Mas, J., Opperman, C. and Walton, J. (1997). IS-MPMI meeting report: The Eighth International Congress of Molecular Plant-Microbe Interactions, Knoxville, TN, July 14-19. *Molecular Plant-Microbe Interaction* 10: 6-12.
- Bhattacharyya, M.K., Martin, C. and Smith, A. (1993). The importance of starch biosynthesis in the wrinkled seed shape character of peas studied by Mendel. *Plant Molecular Biology* 22: 525-531.
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- Hedley, C.L., Jones, D.A., Wang, T.L., Ambrose, M.J., Smith, A.M., Ellis, T.H.N., Turner, L., Matthews, P., Bhattacharyya, M.K., Harwood, W., Bedford, I.D. and Green, F.N. (1990). Evidence for a new rugosus locus. *Pea News Letter* 2: 26-28.
- Bhattacharyya, M.K., Nandpuri, K.S. and Singh, S. (1979). Genetic divergence in tomato. *Acta Horticulture* 93: 289-300.
- Bhattacharyya, M.K., Nandpuri, K.S. and Singh, S. (1979). Screening of tomato germplasms for quality and yield. *Acta Horticulture* 93: 301-303.

Chapters in Books:

- Bhattacharyya, M.K. (2010) Map based cloning. In "Encyclopedia Of Plant Genomics-Volume: Soybean Genomics" ed. M. Ratnaparkhe, K. Bilyeu, Series Editor: C. Kole.

- Lübberstedt, T. and Bhattacharyya, M.K. (2010) Applications of Genomics Researches in Plant Breeding. In Principles and Practices of Plant Genomics. Volume 3: Advanced Genomics. Editors: Chittaranjan Kole and Albert G. Abbott.
- Bhattacharyya, M. K., Sandhu, D., Gao, H., Narayanan, N. N., Ji, J. and Tasma, M. I. 2003. Recognition and Signal Transduction in Disease Resistance: Mechanisms and Application, December 3-5, 2003. In (ed.) UMS Biotechnology Symposium II, Signal Transduction: Mechanisms and Application. ELSEVIER. Universiti Malaysia Sabah, Kota Kinabalu.
- Bhattacharyya, M.K. (2001). Construction of cDNA libraries. In: "Essential Molecular Biology: A Practical Approach," ed. T. A. Brown. Oxford University Press, Oxford, 41-62 (Front Cover).
- Bhattacharyya, M.K., Espinosa, B.G., Kasuga, T., Liu, Y., Salimath, S.S., Gijzen, M., Poisa, V. and Buzzell, R.I. (2001). Towards understanding the recognition and signal transduction processes in the soybean-*Phytophthora sojae* interaction. Symposium on Plant Signal Transduction, ICGEB, New Delhi, October 4-6, 1999. In "Signal Transduction in Plants: Current Advances," eds. S. K. Sopory, R. Oelmuller and S.C. Maheshwari, Kluwer Academic/Plenum Publishers.
- Dixon, R.A., Paiva, N.L. and Bhattacharyya, M.K. (1995). Engineering disease resistance in plants: an overview. In "Molecular Methods in Plant Pathology," eds. R.P. Singh and U.S. Singh, CRC Press, Boca Raton, 249-270.

INVITED PRESENTATIONS

Invited International Presentations

- Bhattacharyya, M.K. (2015) Transgenic approaches in managing diseases in soybean. Agri-Biotechnology Summit, Hyderabad, India, February 16-18, 2015.
- Bhattacharyya, M.K. (2015) Transgenic approaches in managing diseases in soybean. 2nd International Conference on Frontiers in Biological Sciences (InCoFIBS-2015), 22-24 January, 2015, Rourkela, Odisha, India.
- Bhattacharyya, M.K. (2015) "Arabidopsis nonhost resistance for enhancing disease resistance in soybean." Plant Interactions with Pests and Pathogens Workshop. Plant & Animal Genome XXIII, Town & Country Convention Center, San Diego, CA, January 10-14, 2015.
- Bhattacharyya, M.K. (2014) Novel management approaches: managing diseases in soybean. SOYCON-2014 International Soybean Research Conference. Indore, India, 22-24 February, 2014.
- Bhattacharyya, M.K. (2014) Novel management approaches: managing diseases in soybean. IIT, Guwahati, February 17, 2014.
- Bhattacharyya, M.K. (2014) Molecular characterization of a mutant soybean population induced by an endogenous transposable element, *Tgm9*. The International Plant & Animal Genome XVII Conference, Town & Country Convention Center, San Diego, CA, January 11, 2014.
- Bhattacharyya, M.K. (2013) "Fvtoxl is a major virulence factor that causes foliar sudden death syndrome in soybean." BIT's 3rd Annual World Congress of Agriculture-2013. Hangzhou, China, September 23-25, 2013.

- Bhattacharyya, M.K. (2013) “Arabidopsis nonhost disease resistance for improving disease resistance in soybean.” Lilongwe University, Lilongwe, Malawi, Africa, July 1, 2013.
- Bhattacharyya, M.K. (2013) “The role of a proteinacious toxin in developing the sudden death syndrome disease in soybean.” Chitedze Research Station, Lilongwe, Malawi, Africa, June 28, 2013.
- Bhattacharyya, M.K. (2013) The Arabidopsis thaliana *PSSI* Gene Confers Nonhost Resistance Against two Soybean Pathogens, *Phytophthora sojae* and *Fusarium virguliforme*. The First International American Moroccan Agricultural Sciences Conference. Rabat, Morocco. March 18 – 19, 2013.
- Bhattacharyya, M.K. (2012) Genomics Analyses of the soybean SDS pathogen, *Fusarium virguliforme*. The 7th International Conference on Genomics (ICG-7) & Bio-IT APAC. The Kowloon Shangri-La Hotel, Hong Kong, November 28 - December 1, 2012.
- Bhattacharyya, M.K. (2012) One Possible Mechanism Involved in Foliar Sudden Death Syndrome Development in Soybean. October 1. Biometrics Division, IASRI, New Delhi, India.
- Bhattacharyya, M.K. (2012) One Possible Mechanism Involved in Foliar Sudden Death Syndrome Development in Soybean. September 21, 2012. Assam Agricultural University, India.
- Bhattacharyya, M.K. (2012) Expression of a Single Chain Variable Fragment Antibody against the *Fusarium virguliforme* Toxin Fvtox1 Resulted in Enhanced Foliar Sudden Death Syndrome Resistance in Soybean. 2nd Annual International Symposia of Mycology (ISM-2012), Guangzhou, China, July 30-August 1, 2012 (was invited; but declined).
- Bhattacharyya, M.K. (2012) Xylem Sap of *Fusarium virguliforme*-infected Soybean Plants Contains Candidate Toxins Involved in Sudden Death Syndrome Development. Proteomics Workshop, Plant & Animal Genome Conference. January 17, 2012, San Diego, CA.
- Bhattacharyya, M.K. (2011) “Nonhost Resistance for Improving Disease Resistance in Crop Plants.” BIT 1st Annual World Congress of Molecular & Cell Biology (CMCB-2011). Beijing, China, August 6-8, 2011.
- Bhattacharyya, M.K. (2011) “Expression of a single-chain variable fragment antibody against the *Fusarium virguliforme* toxin, FvTox1, resulted in reduced foliar sudden death syndrome symptom development in stable transgenic soybean plants.” Plant Transgene Genetics, Workshop. Plant & Animal Genome XVII Conference; Town & Country Convention Center, San Diego, CA, January 15-19, 2011.
- Bhattacharyya, M.K. (2011) “The proteinacious toxin, FvTox1 is a major pathogenicity factor involved in foliar sudden death syndrome development in soybean.” Plant Interactions with Pests and Pathogens Workshop. Plant & Animal Genome XVII Conference; Town & Country Convention Center, San Diego, CA, January 15-19, 2011.
- Bhattacharyya, M.K. (2011) “Sequencing and analyses of the *Fusarium virguliforme* genome.” Lucigen Workshop. Plant & Animal Genome XVII Conference; Town & Country Convention Center, San Diego, CA, January 15-19, 2011.
- Bhattacharyya M.K. (2010) “Expression of a single-chain variable fragment antibody against a fungal toxin reduced the incidence of a disease in stable transgenic soybean plants.” Shanghai Institute of Plant Physiology and Ecology. December 1, 2010.

- Bhattacharyya M.K. (2010) "Expression of a single-chain variable fragment antibody against a fungal toxin reduced the incidence of a disease in stable transgenic soybean plants." Sun Yat-sen University. December 3, 2010. Sun Yat-sen University.
- Bhattacharyya (2010) "Transposon *Tgm9* in soybean." December 5, 2010. Sun Yat-sen University.
- Bhattacharyya M.K. (2010) "Functional characterization of a phytotoxin that initiates foliar sudden death syndrome, an emerging serious disease in soybean." Functional Genomics Workshop, Plant & Animal Genome XVII Conference; Town & Country Convention Center, San Diego, CA, January 9-13, 2010.
- Bhattacharyya M.K. (2009) "Identification and characterization of the first active endogenous transposable element in soybean." Transposable Elements Workshop, Plant & Animal Genome XVII Conference; Town & Country Convention Center, San Diego, CA, January 10-14, 2009.
- Bhattacharyya M.K. (2009) "Functional Genomics Of The Soybean-*Phytophthora sojae* Interaction." Soybean Genomics Workshop, Plant & Animal Genome XVII Conference; Town & Country Convention Center, San Diego, CA, January 10-14, 2009.
- Bhattacharyya M.K. (2007) "Phytophthora resistance in soybean." Legumes Workshop, Plant & Animal Genome XV Conference; Town & Country Hotel, San Diego, CA, January 13-17, 2007.
- Bhattacharyya M.K. (2007) "Pyrosequencing in microfabricated high-density picolitre reactors for investigating the transcriptomes of the the soybean-*Phytophthora sojae* interaction." Functional Genomics: Methodologies Workshop, Plant & Animal Genome XV Conference; Town & Country Hotel, San Diego, CA, January 13-17, 2007.
- Bhattacharyya M.K. (2007) "Quantitative phosphoproteomics of the soybean-*Phytophthora sojae* interaction." Proteomics Workshop, Plant & Animal Genome XV Conference; Town & Country Hotel, San Diego, CA, January 13-17, 2007.
- Bhattacharyya M.K. (2006) "Toward understanding the molecular basis of the soybean-*Phytophthora sojae* interaction." Third International Conference on Legume Genomics & Genetics, Brisbane, Australia April 9-13, 2006.
- Bhattacharyya M.K. (2006) "Phosphoproteomic approaches: In studying the soybean-*Phytophthora sojae* interaction." Plant & Animal Genome XIV Conference; Town & Country Hotel, San Diego, CA, January 15-19, 2006.
- Bhattacharyya, M. K., Sandhu, D., Gao, H., Narayanan, N. N., Ji, J., and Tasma, M. I. (2003) "Recognition and signal transduction in disease resistance: mechanisms and application." UMS Biotechnology. Symposium II. Universiti Malaysia Sabah, Kota Kinabalu, Malaysia. December 3-5, 2003. **Keynote Speaker.**
- Bhattacharyya, M.K. (2003) "Towards understanding resistance and susceptibility in soybean." Southern Crop Protection and Food Research Centre, 1391 Sandford St., London, ON N5V 4T3, Canada. July 22, 2003.
- Bhattacharyya, M.K. (2003) "Application of a cloned *Phytophthora* resistance gene *Rps1-k* for discovering candidate genes for the expression of defense responses in soybean." Functional Genomics: Methodologies Workshop, Plant and Animal Genome XI Conference. Town & Country Hotel, San Diego, CA, January 11 - 15, 2003.
- Bhattacharyya, M.K. (1999) "Phosphoinositide-specific phospholipase C is induced by nutrients MS and down-regulated by infection in soybean cell suspensions." School of Life Sciences, JNU, India, 1999.

- Bhattacharyya, M.K., Espinosa, B.G., Kasuga, T., Liu, Y., Salimath, S.S., Gijzen, M., Poisa, V., and Buzzell, R.I. (1999) "Towards understanding the recognition and signal transduction processes in the soybean-*Phytophthora sojae* interaction." Symposium on Plant Signal Transduction, ICGEB, New Delhi, October 4-6, 1999.
- Bhattacharyya, M.K. (1997) "High resolution and high density genetic mapping of AFLP markers that co-segregates with the *Rps1-k*." Department of Plant Molecular Biology, Delhi University South Campus, New Delhi, 1997.
- Bhattacharyya, M.K. (1996) "Progress towards positional cloning of the *Phytophthora* resistance gene *Rps1-k*." Department of Plant Sciences, UWO, London, Ontario, 1996.
- Bhattacharyya, M.K. (1996) "High resolution genetic and physical mapping of the *Rps1-k* locus in soybean." Agriculture Canada, Harrow, Ontario, Canada, 1996.
- Bhattacharyya, M.K. (1996) "Toward cloning of the *Phytophthora* resistance gene *Rps1-k*." Department of Botany, Univ. of Toronto, 1996.
- Bhattacharyya, M.K. (1993) "Identification of markers linked to the *Rps1-k* gene." London Research Centre, Agriculture Canada, London, Ontario, 1993.
- Bhattacharyya, M.K., Paiva, N.L. Stermer, B.A., and Dixon, R.A. (1991) "HMG-CoA reductase of potato is encoded by a multigene family." Third International Congress of Plant Molecular Biology, Tucson, 1991.

Invited National Presentations

- Bhattacharyya, M.K. (2013) "Transgenic approaches in managing sudden death syndrome in soybean." USDA/NIFA Agriculture and Food Research Initiative Microbial Programs Awardee Meeting, Washington, DC, August 7-8, 2013.
- Bhattacharyya, M.K. (2013) "Transgenic approaches in fighting sudden death syndrome in soybean." Plant Genomics & Biotechnology Workshop for 7th - 12th grade teachers and high school students, Tuskegee University, Tuskegee, AL, July 29, 2013.
- Bhattacharyya, M.K. (2013) Nonhost resistance for engineering disease resistance. CPBR Symposium, March 5 -6, 2013. Washington, DC.
- Bhattacharyya, M.K. (2012) USDS SDS Project. North Central Soybean Research Program and the United Soybean Board SDS Fall Meeting, November 15-16, 2012, Kansas City, MO.
- Bhattacharyya, M.K. (2012) Genetic Analyses Suggest That The FvTox1 Toxin Produced by *Fusarium virguliforme* is Involved In Foliar SDS Development In Soybean. 14th Biennial Conference on the Molecular and Cellular Biology of the Soybean. August 12-15, 2012, Des Moines, IA.
- Abeysekara, N., Matthiesen, R., Cianzio, S., Bhattacharyya, M. and Robertson, A. (2012) Mapping Quantitative Trait Loci encoding partial resistance to *Phytophthora sojae* in Soybean. 14th Biennial Conference on the Molecular and Cellular Biology of the Soybean. August 12-15, 2012, Des Moines, IA.
- Bhattacharyya, M.K. (2011) "The SDS pathogen—what have we learned". The NCSRP SDS Fall Meeting, November 17-18 in St. Paul, MN.
- Bhattacharyya, M.K. (2011) Nonhost resistance for engineering disease resistance. Monsanto, Inc., St. Louis. July 11, 2011.
- Bhattacharyya, M.K. (2011) "Expression of an antibody against a *Fusarium virguliforme* toxin enhances SDS resistance in stable transgenic soybean plants." Department of Plant Pathology, Iowa State University, February 15.

- Bhattacharyya, M.K. (2010) "Sequencing the SDS pathogen." North Central Soybean Research Program and the United Soybean Board Sudden Death Syndrome Fall Meeting November 18-19, 2010 University of Arkansas - Cosmopolitan Hotel, Fayetteville, AR.
- Bhattacharyya, M.K. (2010) "What we now know about the way *Fusarium virguliforme* causes foliar symptoms of sudden death syndrome in soybean." Syngenta, Inc., Research Triangle Park, North Carolina. August 12.
- Bhattacharyya, M.K. (2010) "Towards understanding the mechanism of foliar sudden death syndrome development in soybean." The 13th Biennial Molecular & Cellular Biology of the Soybean Conference, Durham, North Carolina, August 8-11.
- Bhattacharyya, M.K. (2010) "What do we now know about the mechanism of foliar SDS development in soybean?" Workshop Organized by Syngenta, Inc., Minnetonka, July 15, 2010.
- Bhattacharyya, M.K. (2010) "What we now know how foliar SDS developed in soybean." Syngenta, Inc., Huxley, June 16, 2010.
- Bhattacharyya, M.K. (2010) "Towards Creating Durable and Broad-spectrum Disease Resistance in Soybean." Pioneer, Inc., Johnston, Iowa. March 23, 2010.
- Bhattacharyya, M.K. (2010) "Genome sequence of the SDS pathogen, *Fusarium virguliforme*." The Soybean Breeder's Meeting, St. Louis, February 22-24, 2010.
- Bhattacharyya, M.K. (2008) "Toxin Research." SDS meeting organized by NCSRP, November ISU, Ames, IA.
- Bhattacharyya M.K. (2006) "Characterization of Rps1-k-2-interactors." Soy2006, Cellular and Molecular Biology of the Soybean Conference, Lincoln, NE, August 8-11, 2006.
- Bhattacharyya, M.K. (2006) "Cloning and characterization of a type II metacaspase gene, *GmMcII*." Mendel Biotechnology, Inc., Hayward, CA. June 19, 2006.
- Bhattacharyya M.K. (2005) "Phytophthora resistance in soybean." Department of Plant Pathology, Kansas State University, May 12, 2005.
- Bhattacharyya, M.K. (2004) "Towards understanding the mechanism of Phytophthora resistance in soybean." Soy2004, Cellular and Molecular Biology of the Soybean Conference, Columbia, MO, August 8-11, 2004.
- Bhattacharyya, M.K. (2002) "Application of *Rps1-k* in developing possible broad-spectrum resistance in soybean." The *Phytophthora sojae* meeting. Wooster, OH. September 26-27, 2002.
- Bhattacharyya M.K., Narayanan N. N., Gao H., Santra D. Ellison L, Kasuga, T., Salimath S.S., Liu Y., Espinosa B., Marek L.F., Shoemaker R.C., Gijzen M., and Buzzell R.I. (2002) "The *Rps1-k* locus carries multiple functional *Phytophthora* disease resistance genes in soybean." Soy2002, 9th Biennial conference of the Cellular and Molecular Biology of the Soybean. Urbana-Champaign, Illinois, August 11-14, 2002.
- Bhattacharyya, M.K. (2002) "*Rps1-k* is comprised of multiple functional *Phytophthora* resistance genes." *Phytophthora* Molecular Genetics Workshop, Milwaukee, Wisconsin, Aug.1-2, 2002.
- Bhattacharyya, M.K. (2002) "Progress toward isolation of *Rps1-k*." Iowa Soybean Promotion Board. Des Moines, Iowa, March 2, 2002.
- Bhattacharyya, M.K. (1999) "Progress towards cloning the soybean disease resistance gene *Rps1-k*." Department of Botany, Oklahoma State University, Oklahoma, 1999.

- Shigaki T., Dammann, C., and Bhattacharyya, M.K. (1999) "Toward understanding the possible role of phosphoinositide-specific phospholipase C in plants." The 88th Annual Technical Meeting of OAS, Oklahoma City University, November 13, 1999.
- Dammann C., and Bhattacharyya, M.K. (1999) "A new gene from soybean with similarity to G-protein coupled receptors." 75th annual ASPP meeting, 1999. (Dr. Dammann from PI's lab offered the talk).
- Bhattacharyya, M.K. (1999) "Towards positional cloning of the *Phytophthora* resistance gene *Rps1-k* in soybean." The 1999 OARDC Annual Conference, OSU, Columbus, OH. **Keynote Speaker.**
- Bhattacharyya, M.K. (1999) "Possible role of phosphoinositide-specific phospholipase C in DNA replication in soybean." Department of Botany and Microbiology, University of Oklahoma, 1999.
- Bhattacharyya, M.K. (1998) "Towards cloning the soybean disease resistance gene *Rps1-k*." Noble Foundation Plant Biology 10 year Symposium, Noble Foundation, Ardmore, Oklahoma, October 7-10, 1998.
- Bhattacharyya, M.K., Salimath, S.S., Espinosa, B.G., Kasuga, T., Liu, Y., Marek, L., Shoemaker, R.C., Gijzen, M., and Buzzell, R. I. (1998) "Soybean-*Phytophthora sojae*, a model plant-fungal interaction: Progress towards map-based cloning of the disease resistance gene *Rps1-k*." 7th Biennial Conference on Molecular and Cellular Biology of the Soybean and 8th Gatlinburg Symposium. Knoxville, Tennessee, July 26-29, 1998.
- Bhattacharyya, M.K. (1997) "Towards cloning *Rps1-k*." Application of biotechnology for the control of soybean diseases, meeting held in September 13- 14, 1997, St. Louis, Missouri, 1997.
- Bhattacharyya, M.K. (1996) "Progress towards cloning *Rps1-k*." Application of biotechnology for the control of soybean diseases, meeting held in October 5-6, 1996, Iowa State University, Ames, IA, 1996.
- Bhattacharyya, M.K. (1996) "Progress towards map-based cloning the *Phytophthora* resistance gene *Rps1-k*." USDA-ARS, Beltsville, Maryland, 1996.
- Bhattacharyya, M.K. (1996) "Towards map-based cloning of *Rps1-k* that confers resistance to *Phytophthora sojae* in soybean." Hawaiian Sugar Plantation Association, Honolulu, Hawaii, 1996.
- Bhattacharyya, M.K. (1996) "Characterization of soybean PI-PLC1." Department of Plant Molecular Physiology, University of Hawaii, Honolulu, Hawaii, 1996.
- Bhattacharyya, M.K. (1996) "Cloning and characterization of soybean PI-PLC1." Department of Botany, Oklahoma State University, Oklahoma, 1995.
- Bhattacharyya, M.K. (1995) "Isolation of RAPD and AFLP markers that are linked to *Rps1-k*." 'Workshop on soybean pathology,' April 22, 1995, Iowa State University, Ames, IA.
- Bhattacharyya, M.K. (1994) "Reduced variation in transgene expression from a binary vector with selectable markers at the right and left T-DNA borders." Monsanto, St. Louis, Missouri, 1994.