

Academic Personnel Services Unit (APSU) Biography Form

TO BE FILLED OUT BY DEPARTMENT AP

Department: Botany & Plant Sciences	Position Title (include Rank and Step): Adjunct Professor
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TO BE FILLED OUT BY THE EMPLOYEE

Last Name, First Name and Middle Initial (exactly as it appears on your Passport or Social Security Card): Sandhu, Devinder			
Business/School E-mail: Devinder.sandhu@usda.gov		Personal E-mail: devindersandhu@gmail.com	
Current Address, City, State, and Zip Code: 450 W Big Springs Rd. Riverside, CA 92507		Permanent/Foreign Address, City/Province, State/Country, and Zip/Postal Code: 18725 Mariposa Ave, Riverside, CA 92508	
Business/School Phone Number: 951-369-4832		Preferred Phone Number: 715-409-6760	
US Citizen: <input checked="" type="checkbox"/> Yes or <input type="checkbox"/> No Birthdate: 08/03/1970		Visa Type:	Visa Expiration:
Do you have any family members employed by UCR? <input type="checkbox"/> Yes or <input checked="" type="checkbox"/> No		Name:	Relationship: Department:

Educational Background: Please list in chronological order, beginning with the most recent degree first.

Degree Ph.D.	Date Awarded (MM/DD/YYYY) 08/12/2000	Institution: University of Nebraska-Lincoln, Lincoln, NE Specialization: Molecular Genetics
Degree M.S.	Date Awarded (MM/DD/YYYY) 05/31/1995	Institution: Punjab Agricultural University, Ludhiana, India Specialization: Plant Breeding
Degree B.S.	Date Awarded (MM/DD/YYYY) 03/31/1993	Institution: Punjab Agricultural University, Ludhiana, India Specialization: Crop Science

Previous Applicable Employment: Please show a full account of your time from the date of your first academic employment up to the present with most recent position first. **Please include all previous UC experience.** If needed, please insert more rows, or attach an additional page.

Dates (MM/DD/YYYY)	Institution, Organization and Location	Rank, Title or Position
FROM: 08/16/2015 TO: present	US Salinity Laboratory, USDA-ARS, 450 W Big Springs Rd., Riverside, CA 92507	Research Geneticist (Plants)
FROM: 08/15/2014 TO: 08/15/2015	Department of Biology, University of Wisconsin-Stevens Point, Stevens Point, WI 54481	Professor
FROM: 08/23/2010 TO: 08/14/2014	Department of Biology, University of Wisconsin-Stevens Point, Stevens Point, WI 54481	Associate Professor
FROM: 08/09/2005 TO: 08/22/2010	Department of Biology, University of Wisconsin-Stevens Point, Stevens Point, WI 54481	Assistant Professor
FROM: 07/13/2001 TO: 08/08/2005	Department of Agronomy, Iowa State University, Ames, IA 50011	Assistant Scientist III

Academic Personnel Services Unit (APSU) Biography Form

FROM: 08/01/2000 TO: 07/12/2001	Department of Agronomy and Horticulture, University of Nebraska- Lincoln, Lincoln, NE 68583	Post Doc Research Associate
FROM: 01/13/1997 TO: 07/31/2000	Department of Agronomy and Horticulture, University of Nebraska- Lincoln, Lincoln, NE 68583	Graduate Research Assistant
FROM: 10/09/1995 TO: 12/12/1996	Punjab Agricultural University Regional Research Station, Ropar, Punjab, India	Assistant Professor
FROM: 06/06/1995 TO: 10/08/1995	Department of Plant Breeding and Genetics, Punjab Agricultural University, Ludhiana, Punjab, India	Research Fellow

Research Specialization: Plant Genetics	
Signature	Date 06/29/2023

DEVINDER SANDHU

Research Geneticist, USDA-ARS, US Salinity Lab,
450 W Big Springs Rd., Riverside, CA

Email: devinder.sandhu@usda.gov; Tel.- 951-369-4832

<https://www.ars.usda.gov/pacific-west-area/riverside-ca/agricultural-water-efficiency-and-salinity-research-unit/people/devinder-sandhu/>

EDUCATION:

- 01/1997 - 08/2000 Ph.D. Molecular Genetics, University of Nebraska- Lincoln, Lincoln, NE.
- 03/1993 - 05/1995 M.Sc. (Plant Breeding), Punjab Agricultural University, Ludhiana, India.
- 08/1988 - 03/1993 B.Sc. Agri. (Honors in Crop Science), Punjab Agricultural University, Ludhiana, India.

EXPERIENCE:

- 08/2015 – Present Research Geneticist, USDA-ARS, US Salinity Lab, Riverside, CA.
- 07/2017 – 02/2019 Acting Research Leader, WRR unit, USDA-ARS, US Salinity Lab, Riverside, CA.
- 08/2014 – 08/2015 Professor, Department of Biology, University of Wisconsin-Stevens Point, Wisconsin.
- 08/2010 – 08/2014 Associate Professor, Department of Biology, University of Wisconsin-Stevens Point, Wisconsin.
- 08/2005 – 08/2010 Assistant Professor, Department of Biology, University of Wisconsin-Stevens Point, Wisconsin.
- 07/2001 – 08/2005 Assistant Scientist III, Department of Agronomy, Iowa State University- Ames, Iowa.
- 08/2000 – 07/2001 Post-Doctoral Research Associate, Department of Agronomy and Horticulture, University of Nebraska- Lincoln.
- 01/1997 - 08/2000 Graduate Research Assistant, Department of Agronomy and Horticulture, University of Nebraska- Lincoln.
- 10/1995 - 12/1996 Assistant Professor, Punjab Agricultural University Regional Research Station, Ropar, India.
- 06/1995 - 10/1995 Research Fellow, Department of Plant Breeding and Genetics, Punjab Agricultural University, Ludhiana, India.

ACADEMIC AWARDS AND RECOGNITIONS:

- 2020** **Outstanding Agricultural Scientist Award.** Association of Agricultural Scientists of Indian Origin.
Innovation Fund Award. USDA-ARS.
- 2014** **Excellence in Teaching Award.** University of Wisconsin – Stevens Point.
Nominated for **UW System Regent Scholar.**
- 2013** Nominated for **Eugene Katz Distinguished Faculty Award.** University of Wisconsin – Stevens Point.
- 2012** **Pucci Teaching Award.** Department of Biology, University of Wisconsin – Stevens Point.
Excellence in Scholarship. Department of Biology, University of Wisconsin – Stevens Point.
- 2010** **University Scholar Award,** UWSP.
Excellence in Scholarship. Department of Biology, University of Wisconsin – Stevens Point.
Nomination for **Pucci Teaching Award.** Department of Biology, University of Wisconsin – Stevens Point.
- 2009** Nomination for University Scholar Award, UWSP.
Excellence in Scholarship. Department of Biology, University of Wisconsin – Stevens Point.
- 2008** **Faculty Diversity Research Award,** IRE UW System
- 2000** Recipient of **Widaman Trust Distinguished Graduate Student Award** in recognition of high merit and outstanding basic research potential in Agriculture, University of Nebraska-Lincoln
Recipient of **Milton E. Mohr Award** for academic excellence in Biotechnology for year 1999-2000, University of Nebraska- Lincoln
- 1999** Recipient of **Milton E. Mohr Award** for academic excellence in Biotechnology for year 1998-99, University of Nebraska- Lincoln
- 1995** **Overall Best Graduate Student** of the Faculty of Agriculture with an OGPA of 4.00 (4.00 basis), Punjab Agricultural University, Ludhiana, India.
- **Dr. I S Dhillon Gold Medal**
- Merit certificate
- 1993-1995** Merit Fellowship, Punjab Agricultural University
- 1993** **First in the University** in B.Sc. Agri. with an OGPA of 4.00 (4.00 basis), Punjab Agricultural University, Ludhiana, India.
- **Academic Roll of Honor**
- **University Gold Medal**
- **Dr Ram Dhan Singh Gold Medal**
- Merit certificate
- 1988-1993** Merit Scholarship, Punjab Agricultural University

TEACHING: 08/2005 – 08/2015

Principles of Genetics (Biol 210)
Introduction to Plant Biology (Biol 130)
Plant Genetics (Biol 310/510)
Plant Breeding (Biol 490)
Crop Improvement (Biol 498)
Independent Studies (Biol 399)

PROFESSIONAL AFFILIATIONS

Editorial Advisory Board Member, ACS Agricultural Science & Technology (2020-present)
Associate Editor, Crop Science, (2021-present)
Editorial Board Member, Plants, (2020-present)
Associate Editor, PLOS ONE, (2015-present)
Editorial Board Member, Agriculture Research Journal, (2019-present)
Editor, Functional and Integrative Genomics, (2016-2020)
Editorial Board Member, Dataset Papers in Science, (2012-2016)

Member, Crop Science Society of America, (2012-present)
Member, Genetics Society of America (2001-2005, 2008-2015)

PROFESSIONAL ACTIVITIES

PUBLICATIONS: (underlined names represent undergraduate students. * represents corresponding author)

Journals:

- 2023** Zhang Y, Ye X, Skaggs TH, Ferreira JFS, Chen X, **Sandhu D**. 2023. Plant phase extraction: A method for enhanced discovery of the RNA-binding proteome and its dynamics in plants, *Plant Cell*, koad124, DOI: 10.1093/plcell/koad124
- Sandhu D***, Pallete A, William M, Ferreira JFS, Kaundal A, & Grover KK. 2023. Salinity responses in 24 guar genotypes are linked to multigenic regulation explaining the complexity of tolerance mechanisms *in planta*. *Crop Sci.* 63:585-597. DOI: 10.1002/csc2.20872
- 2022** Ferreira JFS, Liu X, Suddarth SRP, Nguyen C, **Sandhu D***. 2022. NaCl Accumulation, Shoot Biomass, Antioxidant Capacity, and Gene Expression of *Passiflora edulis* f. *Flavicarpa* Deg. in Response to Irrigation Waters of Moderate to High Salinity. *Agriculture* 12(11):1856. DOI: 10.3390/agriculture12111856
- Chen L, Tian N, Hu M, **Sandhu D**, Jin Q, Gu M, Zhang X, Peng Y, Zhang J, Chen Z, Liu G, Huang M, Huang J, Liu Z and Liu S. 2022. Comparative transcriptome analysis reveals key pathways and genes involved in trichome development in tea plant (*Camellia sinensis*). *Front. Plant Sci.* 13:997778. DOI: 10.3389/fpls.2022.997778

- Jin K, Tian N, Ferreira JFS, **Sandhu D**, Xiao L, Gu M, Luo Y, Zhang X, Liu G, Liu Z, Huang J, and Liu S. 2022. Comparative transcriptome analysis of *Agrobacterium tumefaciens* reveals the molecular basis for the recalcitrant genetic transformation of *Camellia sinensis* L. *Biomolecules* 12: 688. DOI: 10.3390/biom12050688
- Kaundal A, **Sandhu D***, Singh V, Duenas M, Acharya BR, Nelson B, Ferreira JFS, Litt A. 2022. Transgenic expression of *Prunus persica* Salt Overly Sensitive 2 (*PpSOS2*) in the *atsos2* mutant. *ACS Agricultural Science & Technology* 2: 153-164. DOI: 10.1021/acsagscitech.1c00276
- Acharya BR, **Sandhu D***, Duenas C, Duenas M, Pudussery M, Kaundal A, Ferreira JFS, Suarez DL, Skaggs T. 2022. Morphological, physiological, biochemical, and transcriptome studies reveal the importance of transporters and stress signaling pathways during salinity stress in *Prunus*. *Scientific Reports* 12, Article number 1274. DOI: 10.1038/s41598-022-05202-1
- Acharya BR, **Sandhu D***, Duenas C, Ferreira JFS, Grover KK. 2022. Deciphering molecular mechanisms involved in salinity tolerance in guar (*Cyamopsis tetragonoloba* (L.) Taub.) using transcriptome analyses. *Plants* 11, Article number 291. DOI: 10.3390/plants1103029
- 2021** Suarez DL, Celis N, Ferreira JFS, Reynolds T, **Sandhu D***. 2021. Linking genetic determinants with salinity tolerance and ion relationships in eggplant, tomato and pepper. *Scientific Reports* 11, Article number 16298. DOI: 10.1038/s41598-021-95506-5
- Sandhu D***, Pallete A, Pudussery MV and Grover KK. 2021. Contrasting responses of guar genotypes shed light on multiple component traits of salinity tolerance mechanisms. *Agronomy* 11: 1068. DOI: 10.3390/agronomy11061068
- Kaundal R, Duhan N, Acharya BR, Pudussery MV, Ferreira JFS, Suarez DL and **Sandhu D***. 2021. Transcriptional profiling of two contrasting genotypes uncovers molecular mechanisms underlying salt tolerance in alfalfa. *Sci Rep* 11: 5210. DOI: 10.1038/s41598-021-84461-w
- Zhao C, **Sandhu D*** and Ferreira, JFS. 2021. Transcript analysis of two spinach cultivars reveals the complexity of salt tolerance mechanisms. *ACS Agri. Sci. Technol.* 1 (2): 64-75. DOI: 10.1021/acsagscitech.0c00063
- Tareq PS, Kotha RR, Ferreira JFS, **Sandhu D** and Luthria DL. 2021. Influence of moderate to high salinity on the phytochemical profiles of two salinity-tolerant spinach genotypes. *ACS Food Sci. Technol.* 1: 205-214. DOI: 10.1021/acsfoodscitech.0c00034
- Zhao C, William D, and **Sandhu D***. 2021. Isolation and characterization of salt overly sensitive family genes in spinach. *Physiol. Plant.* 171 (4): 520-532. DOI: 10.1111/ppl.13125.
- 2020** **Sandhu D***, Kaundal A, Acharya BR, Forest T, Pudussery MV, Liu X, Ferreira JF, Suarez DL. 2020. Linking diverse salinity responses of 14 almond rootstocks with physiological, biochemical, and genetic determinants. *Sci Rep* 10: 21087. DOI: 10.1038/s41598-020-78036-4

- Uçgun K, Ferreira JFS, Liu X, Filho JBdaS, Suarez DL, Lacerda CFde, and **Sandhu D**. 2020. Germination and growth of spinach under potassium deficiency and irrigation with high-salinity water. *Plants* 2020, 9(12): 1739; DOI: 10.3390/plants9121739
- Ferreira JFS, Filho JBdS, Liu X, and **Sandhu D**. 2020. Spinach plants favor the absorption of K⁺ over Na⁺ regardless of salinity, and may benefit from Na⁺ when K⁺ is deficient in the soil. *Plants* 9: 507. DOI: 10.3390/plants9040507.
- Sandhu D***, Pudussery MV, Kumar R, Pallete A, Markley P, Bridges WC and Sekhon RS. 2020. Characterization of natural genetic variation identifies multiple genes involved in salt tolerance in maize. *Funct. Integr. Genomic.* 20: 261-275. DOI: 10.1007/s10142-019-00707-x.
- 2019** Thu SW, Rai KM, **Sandhu D**, Rajangam A, Balasubramanian VK, Palmer RG and Mendu V. 2019. Mutation in a PHD-finger protein MS4 causes male sterility in soybean. *BMC Plant Biol.* 19: 378. DOI: 10.1186/s12870-019-1979-4.
- Suarez DL, Celis N, Anderson R, **Sandhu D**. 2019. Grape rootstock response to salinity, water and combined salinity and water stresses. *Agronomy* 9: 321. DOI: 10.3390/agronomy9060321
- Sandhu D***, Pudussery MV, Ferreira JFS, Liu X, Pallete A, Grover, KK and Hummer K. 2019. Variable salinity responses and comparative gene expression in woodland strawberry genotypes. *Sci. Hort.* 254: 61-69. DOI: 10.1016/j.scienta.2019.04.071
- Kaundal A, **Sandhu D***, Duenas M, Ferreira JFS. 2019. Expression of the *high-affinity K⁺ transporter 1 (PpHKT1)* gene from almond rootstock ‘Nemaguard’ improved salt tolerance of transgenic *Arabidopsis*. *PLOS ONE* 14 (3): e0214473. DOI: 10.1371/journal.pone.0214473
- 2018** Ferreira JFS, **Sandhu D**, Liu X and Halvorson JJ. 2018. Spinach (*Spinacea oleracea* L.) response to salinity: nutritional value, physiological parameters, antioxidant capacity, and gene expression. *Agriculture* 8: 163. DOI: 10.3390/agriculture8100163
- Sandhu D***, Pudussery MV, Kaundal R, Suarez DL, Kaundal A. and Sekhon, R.S. 2018. Molecular characterization and expression analysis of the Na⁺/H⁺ exchanger gene family in *Medicago truncatula*. *Funct. Integr. Genomics* 18:141-153. DOI: 10.1007/s10142-017-0581-9
- Sandhu D***, Coleman Z, Atkinson T, Rai KM and Mendu V. 2018. Genetics and physiology of the nuclearly inherited yellow foliar mutants in soybean. *Front. Plant Sci.* 9:471. DOI: 10.3389/fpls.2018.00471
- Grant NP, Mohan A, **Sandhu D**, Gill KS. 2018. Inheritance and genetic mapping of the reduced height (*Rht18*) gene in wheat. *Plants* 7: 58. DOI: 10.3390/plants7030058
- Ferreira JFS, Benedito VA, **Sandhu D**, Marchese JA, and Liu S. 2018. Seasonal and differential sesquiterpene accumulation in *Artemisia annua* suggest selection based on both artemisinin and

dihydroartemisinic acid may increase artemisinin in planta. *Front. Plant Sci.* 9: 1096. DOI: 10.3389/fpls.2018.01096

2017 Sandhu D*, Ghosh J, Johnson C, Baumbach J, Baumert E, Cina T, Grant D, Palmer RG, and Bhattacharyya MK. 2017. The endogenous transposable element *Tgm9* is suitable for generating knockout mutants for functional analyses of soybean genes and genetic improvement in soybean. *PLOS ONE* 12 (8): e0180732. DOI: 10.1371/journal.pone.0180732.

Coleman Z, Boelter J, Espinosa K, Palmer RG and **Sandhu D***. 2017. Isolation and characterization of *Aconitate hydratase 4 (Aco4)* from soybean. *Can. J. Plant Sci.* 97:834-842. DOI: 10.1139/CJPS-2016-0363.

Sandhu D*, Cornacchione MV, Ferreira JFS and Suarez DL. 2017. Variable salinity responses of 12 alfalfa genotypes and comparative expression analyses of salt-response genes. *Sci. Rep.* 7:42958. DOI: 10.1038/srep42958.

2016 Sandhu D*, Atkinson T, Noll A, Johnson C, Espinosa K, Boelter J, Abel S, Dhatt BK, Barta T, Singaas E, Sepsenwol S, Goggi AS, Palmer RG, 2016. Soybean proteins GmTic110 and GmPsbP are crucial for chloroplast development and function. *Plant Sci.* 252:76-87. DOI: 10.1016/j.plantsci.2016.07.006

Baumbach J, Pudake RN, Johnson CJ, Kleinhans K, Ollhoff A, Palmer RG, Bhattacharyya MK and **Sandhu D***. 2016. Transposon tagging of a male-sterility, female-sterility gene, *St8*, revealed that the meiotic MER3 DNA helicase activity is essential for fertility in soybean. *PLOS ONE* 11 (3): e0150482. DOI: 10.1371/journal.pone.0150482

2015 Speth B, Rogers JP, Boonyoo N, VanMeter AJ, Baumbach J, Ott A, Moore J, Cina T, Palmer R and **Sandhu D***. 2015. Molecular mapping of five soybean genes involved in male-sterility, female-sterility. *Genome* 58:143-149. DOI: 10.1139/gen-2015-0044

Navarro C, Moore J, Ott A, Baumert E, Mohan A, Gill KS and **Sandhu D***. 2015. Evolutionary, comparative and functional analyses of the Brassinosteroid Receptor gene, *BR11*, in wheat and its relation to other plant genomes. *PLoS ONE* 10 (5): e0127544. DOI: 10.1371/journal.pone.0127544

Espinosa K, Boelter J, Lolle S, Hopkins M, Goggi S, Palmer RG and **Sandhu D***. 2015. Evaluation of spontaneous generation of allelic variation in response to sexual hybridization and stress. *Can. J. Plant Sci.* 95: 405-415. DOI: 10.4141/cjps-2014-324

2014 Navarro C, Yang Y, Mohan A, Grant N, Gill KS and **Sandhu D***. 2014. Microsatellites based genetic linkage map of the *Rht3* locus in bread wheat. *Molecular Plant Breeding* 5: 43-46. DOI:10.5376/mpb.2014.05.0008

- Reed S, Atkinson T, Gorecki C, Espinosa K, Przybylski S, Goggi S, Palmer RG and Sandhu D*. 2014. Candidate gene identification for a lethal yellow mutant in soybean. *Agronomy* 4 (4): 462-469. DOI: 10.3390/agronomy4040462.
- Yang Y, Speth BD, Boonyoo N, Baumert E, Atkinson TR, Palmer RG and Sandhu D*. 2014. Molecular mapping of three male-sterile, female-fertile mutants and generation of a comprehensive map of all known male sterility genes in soybean. *Genome* 57: 155-160. DOI: 10.1139/gen-2014-0018.
- Speth B, Roger JP, Boonyoo N, Palmer RG and Sandhu D*. 2014. Candidate gene identification for a fertility locus in soybean. *Journal of Research* 51 (1): 8-13.
- 2013** Ott A, Yang Y, Bhattacharyya MK, Horner, HT, Palmer RG, and Sandhu D*. 2013. Molecular mapping of *D1*, *D2* and *ms5* revealed linkage between the cotyledon color locus *D2* and the male-sterility locus *ms5* in soybean. *Plants* 2: 441-454. DOI: 10.3390/plants2030441.
- Raval J, Baumbach J, Ollhoff A, Pudake RN, Palmer RG, Bhattacharyya MK, and Sandhu D*. 2013. A candidate male-sterile, female-sterile gene tagged by the soybean endogenous transposon, Tgm9. *Functional & Integrative Genomics* 13: 67-73. DOI: 10.1007/s10142-012-0304-1.
- 2012** Baumbach J, Rogers JP, Slattery RA, Narayanan NN, Xu M, Palmer RG, Bhattacharyya MK, and Sandhu D*. 2012. Segregation distortion in a region containing a male-sterility, female-sterility locus in soybean. *Plant Science* 195: 151-156. DOI: 10.1016/j.plantsci.2012.07.003.
- Sumit, R., Sahu, B.B., Xu, M., **Sandhu, D.** and Bhattacharyya, M.K. 2012. Arabidopsis nonhost resistance gene *Pss1* confers immunity against an oomycete and a fungal pathogen but not a bacterial pathogen that cause diseases in soybean. *BMC Plant Biology* 12: 87. DOI: 10.1186/1471-2229-12-87.
- 2011** Ott, A., Trautschold, B., and Sandhu, D*. 2011. Using microsatellites to understand the physical distribution of recombination on soybean chromosomes. *PLoS ONE* 6 (7): e22306. DOI: 10.1371/journal.pone.0022306.
- Frasch, R., Weigand, C., Perez, P.T., Palmer, R.G., and Sandhu, D*. 2011. Molecular mapping of 2 environmentally sensitive male-sterile mutants in soybean. *Journal of Heredity* 102: 11-16. DOI: 10.1093/jhered/esq100.
- Slattery, R., Pritzl, S., Reinwand, K., Trautschold, B., Palmer, R., and Sandhu, D*. 2011. Mapping eight male-sterile female sterile soybean mutants. *Crop Science* 51: 231-236. DOI: 10.2135/cropsci2010.06.0351.
- 2010** Schmutz J, Cannon SB, Schlueter J, Ma J, Mitros T, Nelson W, Hyten D, Song Q, Thelen J.J., Cheng J, Xu D, Hellsten U, May GD, Yu Y, Sakurai T, Umezawa T, Bhattacharyya MK, **Sandhu D**, Valliyodan B, Lindquist E, Peto M, Grant D, Shu S, Goodstein D, Berry K, Futrell-Griggs M,

- Abernathy B, Du J, Tian Z, Zhu L, Gill N, Joshi T, Libault M, Sethuraman A, Zhang X-C, Shinozaki K, Nguyen H, Wing RA, Cregan P, Specht J, Grimwood J, Rokhsar D, Stacey G, Shoemaker RC, Jackson SA. 2010. Genome sequence of the paleopolyploid soybean (*Glycine max* (L.) Merr.). *Nature* 463: 178-183. DOI: 10.1038/nature08670.
- Mutti, J.S., **Sandhu, D.**, Sidhu, D. and Gill, K.S. 2010. Dynamic nature of a wheat centromere with a functional gene. *Mol. Breeding* 26: 177-187. DOI: 10.1007/s11032-009-9389-1.
- Frasch, R., Tasma, I.M., Bhattacharyya, M.K. and **Sandhu, D***. 2010. Arabidopsis NPR1 function can be complemented by two soybean orthologues. *UWSP Online Journal VIII*.
- 2009 Sandhu, D.**, Tasma, I.M., Frasch, R., and Bhattacharyya, M.K. 2009. Systemic acquired resistance in soybean is regulated by two proteins, orthologous to Arabidopsis NPR1. *BMC Plant Biol.* 9: 105. DOI: 10.1186/1471-2229-9-105.
- Cervantes-Martinez, I., **Sandhu, D.**, Xu, M., Ortiz-Perez, E., Kato, K.K., Horner, H.T., and Palmer, R.G. 2009. The male sterility locus ms3 is present in a fertility controlling gene cluster in soybean. *J. Hered.* 100: 565-570. DOI: 10.1093/jhered/esp054.
- 2008 Palmer, R., Sandhu, D., Curran, K.,** Bhattacharyya, M.K. (2008). Molecular mapping of 36 soybean male-sterile, female-sterile mutants. *Theor. Appl. Genet.* 117: 711-719. DOI: 10.1007/s00122-008-0812-5.
- Curran, K., and **Sandhu, D***. 2008. Genetic linkage mapping of a new gene involved in chromosome pairing in soybean. *The UWSP Online Journal*. Vol. VI.
- 2007 Sandhu, D***, Alt, J.L., Scherder, C.W., Fehr, W.R., and Bhattacharyya, M.K. (2007). Enhanced oleic acid content in the soybean mutant M23 is associated with the deletion in the *Fad2-1a* gene encoding a fatty acid desaturase. *J. Amer. Oil Chem. Soc.* 84: 229-235. DOI: 10.1007/s11746-007-1037-5.
- 2005 Sandhu D,** Schallock KG, Rivera-Velez N, Lundeen P, Cianzio S, Bhattacharyya MK. 2005. Soybean Phytophthora resistance gene *Rps8* maps closely to the *Rps3* region. *J. Hered.* 96: 536-541. DOI: 10.1093/jhered/esi081.
- Alt, J.L., Fehr, W.R., Welke, G.A., and **Sandhu, D.** 2005. Phenotypic and molecular analysis of oleate content in the mutant soybean line M23. *Crop Sci.* 45: 1978-1982. DOI: 10.2135/cropsci2004.0664.
- 2004 Sandhu, D.**, Gao, H., Cianzio, S., and Bhattacharyya, M.K. 2004. Deletion of a disease resistance NBS-LRR-like sequence is associated with the loss of the Phytophthora resistance gene *Rps4* in soybean. *Genetics* 168: 2157-2167. DOI: 10.1534/genetics.104.032037.

Erayman¹, M., **Sandhu¹, D.**, Sidhu¹, D., Dilbirligi¹, M., Baenziger, P.S., and Gill, K.S. 2004. Demarcating the gene-rich regions of the wheat genome. *Nucleic Acids Res.* 32: 3546-3565. DOI: 10.1093/nar/gkh639.

1, Authors with equal contribution

Randhawa, H.S., Dilbirligi, M., Sidhu, D., Erayman, M., **Sandhu, D.**, et al. 2004. Deletion mapping of homoeologous group 6-specific wheat expressed sequence tags. *Genetics* 168: 677-686. DOI: 10.1534/genetics.104.034843.

Qi, L. L., B. Echalié, S. Chao, G. R. Lazo, G. E. Butler, O. D. Anderson, E. D. Akhunov, J. Dvorak, A. M. Linkiewicz, A. Ratnasiri, J. Dubcovsky, C. E. Bermudez-Kandianis, R. A. Greene, R. Kantety, C. M. La Rota, J. D. Munkvold, S. F. Sorrells, M. E. Sorrells, M. Dilbirligi, D. Sidhu, M. Erayman, H. S. Randhawa, **D. Sandhu**, et al. 2004. A chromosome bin map of 16,000 expressed sequence tag loci and distribution of genes among the three genomes of polyploid wheat. *Genetics* 168: 701-712. DOI: 10.1534/genetics.104.034868.

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Munkvold, J. D., R. A. Greene, C. E. Bermudez-Kandianis, C. M. La Rota, H. Edwards, S. F. Sorrells, T. Dake, D. Benscher, R. Kantety, A. M. Linkiewicz, J. Dubcovsky, E. D. Akhunov, J. Dvorak, Miftahudin, J. P. Gustafson, M. S. Pathan, H. T. Nguyen, D. E. Matthews, S. Chao, G. R. Lazo, D. D. Hummel, O. D. Anderson, J. A. Anderson, J. L. Gonzalez-Hernandez, J. H. Peng, N. Lapitan, L. L. Qi, B. Echalié, B. S. Gill, K. G. Hossain, V. Kalavacharla, S. F. Kianian, **D. Sandhu**, et al. 2004. Group 3 chromosome bin maps of wheat and their relationship to rice chromosome 1. *Genetics* 168: 639-650. DOI: 10.1534/genetics.104.034819.

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1995 Sandhu, D. 1995. Studies on the association of heterosis and combining ability with characters of parents in upland cotton (*G. hirsutum* L.) M.S. Thesis. Plant Breeding. Punjab Agricultural University, Ludhiana, India.

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Bhattacharyya, M.K., **Sandhu, D.**, Gao, H., Narayanan N.N., Ji, J., and Tasma, M. 2003.

Recognition and signal transduction in disease resistance: mechanisms and application.
Proceedings of UMS Biotechnology symposium II, 3-5 December 2003, Kota Kinabalu, Malaysia

Invited Talks

Sandhu, D 2022. New insights into the salt tolerance of alfalfa. North American Alfalfa Improvement Conference. Lansing, MI. June 7-9, 2022.

Sandhu, D 2021. Salt tolerant crops: A way to cope with an increasing soil and water salinity. invited presentation at The Wildwood Institute for STEM Research and Development, Wildwood School, Los Angeles, California. April 26, 2021.

Sandhu, D. 2020. Keynote speaker and panelist at the International Salinity Webinar: Resilient Agriculture in Saline Environments under Changing Climate organized by ICAR-Central Soil Salinity Research Institute, India and International Center for Biosaline Agriculture, Dubai. Nov. 3, 2020. Title of presentation: Genetic characterization of the salt tolerance mechanisms in forage and nut crops. Participants: 200. Researchers, Students, Extension workers.

Sandhu, D. 2020. Guest lecture on the mechanisms of salinity tolerance in plants in Sustainable Crop Production course at New Mexico State University. Oct. 29, 2020. Title of presentation: Understanding the landscape of salt tolerance mechanisms in crop plants. Participants: 35. Students.

Sandhu, D. 2019. Linking performance of almond rootstocks to underlying physiological and genetic determinants of salinity tolerance. *Almond Field Day, Davis, CA.* July 23-24.

Sandhu, D. 2018. Salt tolerant alfalfa: A way to cope with an increasing soil and water salinity. *Ministry of Natural Resources, China.* September 2-9.

Sandhu, D. 2018. Genetic analysis of salinity responses in Medicago genotypes. *Punjab Agri. Uni.* Jan. 15.

Sandhu, D. 2017. Understanding genetic and physiological bases of salt tolerance in almond rootstocks. *The Almond Conference, Sacramento, CA.* Dec. 5-7.

Sandhu, D. 2016. Reverse genetics for functional analysis of soybean genes. *Genomics Seminar Series, University of California - Riverside.* Jan. 20.

Sandhu, D. 2014. Tagging soybean genes with an endogenous transposable element for their functional analyses. *15th Biennial Molecular and Cellular Biology of the Soybean Conference.* Minneapolis, MN. Aug 3-6.

Sandhu, D. 2013. Characterizing soybean genes using transposons. Punjab Agri. Uni. India. Jan 10.

Sandhu, D. 2013. Comparative genomics in soybean. Lovely Professional University, India. Jan 11.

- Sandhu, D.** 2012. Let's play tag with 'jumping genes': Soybean research at UWSP". L&S Community Lecture Series, Portage County Library. Dec 13.
- Sandhu, D.** 2009. Preparing for the Future: Regulation of Systemic Acquired Resistance in Soybean. *UW System IRE symposium: Supporting and retaining diverse faculty*. Milwaukee, WI, April 16-17.
- Sandhu, D.** 2009. DNA: The fingerprint that's inside your body. Oakridge Assisted Living Home, Stevens Point. Feb 26, 2009
- Sandhu, D.** 2009. Regulation of systemic acquired resistance in soybeans. Punjab Agri. Uni. India. Jan 15.
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- Sandhu, D.** 2001. Taming the beast: the wheat genome. 22nd Hard Winter Wheat Workers Workshop, February 18-20, 2001, Kansas City, Missouri.

Presentations/ Abstracts:

- 2022 Sandhu D,** Ferreira JFS, Suarez DL, Gradziel T and Kluepfel DA. 2022. Evaluating new breeding material for salinity tolerance in almond rootstocks and exploring novel sources of salinity tolerance in *Prunus*. The Almond Conference, Sacramento, CA. Dec. 6-8.
- Sandhu D,** Suarez DL, Ferreira JFS, Cornacchione MV, Kaundal R. 2022. Tools and approaches for the genetic improvement of salinity tolerance in alfalfa. ASA-CSSA-SSSA International Annual Meeting, Baltimore, MD, November 6-9.
- Grover K, **Sandhu D,** Pallete A, Pudussery M. 2022. Salinity-tolerance and its mechanism in diverse genotypes of guar. ASA-CSSA-SSSA International Annual Meeting, Baltimore, MD, November 6-9.
- 2021 Sandhu D,** Ferreira JFS, Gradziel T, Aradhya MK, and Kluepfel DA. 2021. Evaluating new breeding material for salinity tolerance in almond rootstocks and exploring novel sources of salinity tolerance in *Prunus*. The Almond Conference, Sacramento, CA. Dec. 7-9.
- Singh V, **Sandhu D,** Kaundal A. 2021. Genomic prediction of salinity stress tolerance in Maize (*Zea mays* L.). ASA-CSSA-SSSA International Annual Meeting, Salt Lake City, UT, November 7-10.
- Kaundal A, **Sandhu D,** Singh V, Duenas M, Acharya BR, Nelson B, Ferreira JFS, Litt A. 2022. Transgenic expression of *Prunus persica* Salt Overly Sensitive 2 (PpSOS2) in *atsos2* mutant imparts salt tolerance in Arabidopsis. ASA-CSSA-SSSA International Annual Meeting, Salt Lake City, UT, November 7-10.

- Sandhu D**, Kaundal A, Forest T, Pudussery M, Ferreira JFS and Suarez DL. 2021. Insights into the genetic networks regulating salinity tolerance in spinach. ASA-CSSA-SSSA International Annual Meeting, Salt Lake City, UT, November 7-10.
- 2020 Sandhu D**, Kaundal A, Forest T, Pudussery M, Ferreira JFS and Suarez DL. 2020. Genetic dissection of the salt tolerance mechanisms in almond rootstocks. ASA-CSSA-SSSA International Annual Meeting, November 9-13, Virtual.
- 2019 Sandhu D**, Pudussery M, Kumar R, Pallete A, Markley P, Bridges WC and Sekhon RS. 2019. Elucidating genetic architecture of salt tolerance in maize by characterizing natural diversity. ASA-CSSA-SSSA Annual meeting. San Antonio, TX, Nov. 10-13.
- Duenas M, Boparai A, Kaundal A and **Sandhu D**. 2019. Functional complementation of the *high-affinity K⁺ transporter 1 (PpHKT1)* gene from almond rootstock resulted in enhanced salinity tolerance in Arabidopsis. UCR Undergraduate Research, Scholarship, & Creative Activity Symposium. Riverside, CA. May 14-15.
- Kaundal A, Duenas M, Ferreira JFS, and **Sandhu D**. 2019. The *high-affinity K⁺ transporter 1 (PpHKT1)* gene from almond rootstock ‘Nemaguard’ improved salt tolerance of transgenic Arabidopsis. Plant & Animal Genome XXVII Conference; San Diego, CA, January 11-15.
- 2018 Sandhu D**, Ferreira JFS, Cornacchione MV, Pudussery M, Kaundal A and Suarez DL. 2018. Understanding the landscape of salt tolerance mechanism in alfalfa. UC Plant Breeding Retreat. Monterey, CA, Dec. 17-18.
- Sandhu D**, Kaundal A, Ferreira JFS and Suarez DL. 2018. Understanding genetic and physiological bases of salt tolerance in almond rootstocks. Almond Conference. Sacramento, CA, Dec. 4-6.
- Sandhu D**, Kaundal A, Ferreira JFS and Suarez DL. 2018. Genetic and physiological analysis of salt tolerance in almond rootstocks. ASA-CSSA Annual meeting. Baltimore, MD, Nov. 4-7.
- Sandhu D**, Cornacchione MV, Pudussery M, Kaundal A, Ferreira JFS and Suarez DL. 2018. Salt tolerant alfalfa: A way to cope with an increasing soil and water salinity. Land Consolidation and Rehabilitation Center, Beijing, China. Sept 2-9.
- Sandhu D**, Cornacchione, MV, Pudussery M, Kaundal A, Ferreira JFS and Suarez DL. 2018. Genetic analysis of salinity responses in Medicago genotypes. Punjab Agri. Uni. India. Jan 15. (Invited presentation).
- 2017 Sandhu D**, Kaundal A, Ferreira JFS and Suarez DL. 2017. Understanding genetic and physiological bases of salt tolerance in almond rootstocks. Almond Conference. Sacramento, CA, Dec. 5-7.

- Sandhu D**, Pudussery M, Kaundal R and Suarez DL. 2017. Molecular analysis of the Na⁺/H⁺ exchanger gene family and its role in salt stress in *Medicago truncatula*. ASA-CSSA-SSSA Annual meeting. Tampa, FL, Oct. 21-25.
- Ferreira JFS, Liu X, Sandhu D and Suarez DL. 2017. Effect of salinity on nutritional value, antioxidant capacity, and oxalic acid of spinach (*Spinacea oleracea* L.). ASA-CSSA-SSSA Annual meeting. Tampa, FL, Oct. 21-25.
- Thu SW, **Sandhu D**, Rajangam A, Balasubramanian, VK, Rai KM, Palmer RG and Mendu V. 2017. Isolation and characterization of a male fertility gene (*Ms4*) in soybean. The Annual Plant Biology Meeting-Southern Section. Orlando, FL, April 9-10.
- 2016 Sandhu D**, Cornacchione M, Ferreira JFS and Suarez DL. 2016. Evaluation and expression analysis of alfalfa genotypes in response to prolonged salt stress. ASA-CSSA-SSSA Annual meeting. Phoenix, AZ, Nov. 6-9.
- Sandhu D**, Atkinson T, Noll A, Johnson CJ, Espinosa K, Boelter J, Abel S, Barta T, Singaas E, Sepsonwol S, Goggi S and Palmer RG. 2016. Isolation and Characterization of Two Chlorophyll-Deficient Genes in Soybean. Plant & Animal Genome XXIV Conference; San Diego, CA, January 9-13.
- Bhattacharyya MK, Baumbach J, O'Malley R and **Sandhu D**. 2016. The *Tgm9*-induced indexed insertional mutant collection to conduct community-based reverse genetics studies in soybean. Plant & Animal Genome XXIV Conference; San Diego, CA, January 9-13.
- 2014 Sandhu, D. 2014**. Tagging soybean genes with an endogenous transposable element for their functional analyses. 15th Biennial Molecular Biology of the Soybean Conference. Aug 3-6, 2014.
- Navarro C, Moore J, Ott A, Johnson C, Baumert E, Kleinhans K, Mohan A, Gill K, **Sandhu D**. 2014. Comparative analysis and characterization of the Brassinosteroid Receptor Protein gene, *Bri1*, in wheat. Plant & Animal Genome XXII Conference; San Diego, CA, January 11-15.
- Bhattacharyya MK, Ghosh J, **Sandhu D**, Ollhoff A, Johnson CJ, Palmer R. 2014. Molecular characterization of a mutant soybean population induced by an endogenous transposable element, *Tgm9*. Plant & Animal Genome XXII Conference; San Diego, CA, January 11-15.
- Johnson CJ, Boelter J, Atkinson T, Espinosa K, Nimz R, Abel A, Singaas E, Sepsonwol S, Goggi S, Palmer RG and Sandhu D. Genetic and Physiological Analyses of Two Chlorophyll-Deficient mutants in Soybean. 15th Biennial Molecular Biology of the Soybean Conference. Aug 3-6, 2014.
- 2013 Baumbach J**, Ollhoff A, Johnson C, Raval J, Pudake RN, Palmer RG, Bhattacharyya MK and **Sandhu D**. 2013. Identification of a candidate male-fertile female fertility gene tagged by an endogenous transposon in soybean. Plant & Animal Genome XXI Conference; San Diego, CA, January 12-16.

- Johnson C, Ollhoff A, Palmer R, Bhattacharyya MK and Sandhu D. 2013. Transposition of an endogenous transposable element in soybean. Plant & Animal Genome XXI Conference; San Diego, CA, January 12-16.
- Sandhu, D.** 2010. Let's play tag with jumping genes. Punjab Agri. Uni. India. Jan 10. (Invited lecture).
- 2012** Baumbach J, Ollhoff A, Raval J, Pudake R, Palmer R, Bhattacharyya MK and Sandhu D. 2012. Candidate gene identification for a transposon-tagged male-sterile female-sterile mutant in soybean. 14th Biennial Molecular Biology of the Soybean Conference. Aug 12-15, 2012.
- Palmer RG and **Sandhu D.** 2012. Sterility mutations in soybean. Forth joint UNS – PSU international conference on BioScience: Biotechnology and Biodiversity, Novi Sad, Serbia, Jun 18-20, 2012
- Ollhoff A, Speth B, Klesmith J, Singaas E and Sandhu D. 2012. Just wheat a minute! Hormonal analysis of tall and short wheat lines. Fifth annual Wisconsin Science & Technology Symposium. July 23-24, 2012.
- 2011** Sumit R., Sahu B., Xu M., **Sandhu D.**, and Bhattacharyya M.K. 2011. Arabidopsis nonhost resistance gene, *Pss1* confers immunity against oomycete and fungal but not bacterial pathogens of soybean. Plant & Animal Genome XIX Conference; Town & Country Hotel, San Diego, CA, January 15-19.
- 2010** Bhattacharyya, M.K., Sumit, R., **Sandhu, D.**, Xu, M., and Sahu, B. 2010. A single Arabidopsis nonhost resistance gene confers immunity against two soybean pathogens, *Phytophthora sojae* and *Fusarium virguliforme*. 13th Molecular & cellular biology of the soybean conference 2010, Aug 8 – 11, Durham, NC.
- Sandhu, D.** 2010. Regulation of systemic acquired resistance in soybeans. Punjab Agri. Uni. India. Jan 15. (Invited lecture).
- Sumit, R., **Sandhu, D.**, Xu, M., and Bhattacharyya, M.K. (2010) *Pss1* confers nonhost resistance of *Arabidopsis thaliana* against two soybean pathogens, *Phytophthora sojae* and *Fusarium virguliforme*. Plant & Animal Genome XVIII Conference; Town & Country Hotel, San Diego, CA, January 9-13.
- 2009 Sandhu, D.** Preparing for the Future: Regulation of Systemic Acquired Resistance in Soybeans. 2009. *UW System IRE symposium: Supporting and retaining diverse faculty.* Milwaukee, WI, April 16-17.
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- Cannon, S., **Sandhu, D.** and Bhattacharyya, M. K. 2009. Identification of candidate soybean genes for Phytophthora resistance through transcriptomic and proteomic studies. World Soybean Research Conference VIII, Beijing, China, August 10-15.
- Bhattacharyya, M.K., **Sandhu, D.**, Cannon, S., Ramusubramanian, S. 2009. Functional genomics of the soybean-*Phytophthora sojae* interaction. *XVIIth International Plant & Animal Genome Meeting*, San Diego, CA, Jan. 12-16.
- 2008** Sumit, R., **Sandhu, D.**, Xu, M., Gao, and Bhattacharyya, M.K. 2008. Towards Isolation of an Arabidopsis Non-host resistance gene that confers immunity against the Soybean pathogen *Phytophthora sojae*. Program and Proceedings for *The 10th Biennial Conference of the Cellular and Molecular Biology of the Soybean*, Indianapolis, Indiana, July 21-23.
- Cannon, S., **Sandhu, D.**, MacMil, S., Wiley, G., Beavis, W.D., Roe, B., Madan K. Bhattacharyya, M.K. 2008. Transcript Profiles of the Soybean-*Phytophthora sojae* Interaction using 454 Pyrosequencing. *XVIth International Plant & Animal Genome Meeting*, San Diego, CA, Jan. 12-16.
- 2007** Bhattacharyya, M.K., **Sandhu, D.**, Gao, H., MacMil, S., Wiley, G., Roe, B. Cannon, S. 2007. Application Of 454 Technology (Pyrosequencing) In Transcript Analyses Of The Soybean-*Phytophthora Sojae* Interaction. *XVth International Plant & Animal Genome Meeting*, San Diego, CA, Jan. 13-17.
- 2006** Xu, M., **Sandhu, D.**, and Bhattacharyya, M. 2006. Isolation of Arabidopsis putative mutants showing loss of nonhost resistance against the soybean pathogen, *Phytophthora sojae*. 8th annual Plant Science Institute Symposium on Plant Receptor Signaling. Iowa State University, Ames, IA. June 22-25.
- 2005** **Sandhu, D.**, Gao, H., Cianzio, S., and Bhattacharyya, M.K. 2005. Loss of the *Phytophthora* resistance gene *Rps4* is associated with the deletion of an NBS-LRR-like sequence in soybean. *XIIIth International Plant & Animal Genome Meeting*, San Diego, CA, Jan. 15-19.
- Narayana, N., Gao, H., Ramusubramanian, S., **Sandhu, D.**, and Bhattacharyya, M.K. 2005. NB And ARC motifs of *Rps1-k-2* are essential for initiating cell death pathway in soybean. *XIIIth International Plant & Animal Genome Meeting*, San Diego, CA, Jan. 15-19.
- 2004** **Sandhu, D.**, Gao, H., Cianzio, S., and Bhattacharyya, M.K. 2004. Rearrangements in an NBS-LRR sequence are associated with the loss of the *Phytophthora* resistance gene *Rps4* in soybean. Program and Proceedings for *The 10th Biennial Conference of the Cellular and Molecular Biology of the Soybean*, Columbia, Missouri, August 8-11.
- 2003** **Sandhu, D.**, Gao, H., Cianzio, S., and Bhattacharyya, M.K. 2003. High-resolution genetic and physical mapping of the *Rps4* region in soybean. Final Program and Abstract guide. *XIth International Plant & Animal Genome Meeting*, San Diego, CA, Jan. 11-15.

- Sidhu, D., Dilbirligi, M., Eryman, M., **Sandhu, D.**, and Gill, K.S. 2003. Gene rich regions of wheat. Final Program and Abstract guide. *XIth International Plant & Animal Genome Meeting*, San Diego, CA, Jan. 11-15.
- 2002 Sandhu, D.**, Gao, H., Cianzio, S., and Bhattacharyya, M.K. 2002. Instability in a resistance gene-like sequence caused by mitotic recombination in soybean. Program and Proceedings for *The 9th Biennial Conference of the Cellular and Molecular Biology of the Soybean*, Urbana-Champaign, Illinois, August 11-14.
- Rostoks, N., Park, Y.J., Ramakrishna, W., Ma, J., Shiloff, B.A., Brueggeman, R., **Sandhu, D.**, Gill, K.S., Bennetzen, J.L. and Kleinhofs, A. 2002. Genomic sequencing reveals gene content, genomic organization, and recombination relationships in barley. Final Program and Abstract guide. *Xth International Plant & Animal Genome Meeting*, San Diego, CA, Jan. 12-16.
- Gao, H., **Sandhu, D.**, Santra, D.K., Tasma, M.I., Cianzio, S. and Bhattacharyya, M.K. 2002. Identification of highly unstable disease resistance gene like sequences that co-segregating with the Phytophthora resistance gene, *Rps4*. Final Program and Abstract guide. *Xth International Plant & Animal Genome Meeting*, San Diego, CA, Jan. 12-16.
- Bondareva, S.N., **Sandhu, D.**, Champoux, J.A. and Gill, K.S. 2002. The effect of cytoplasm on the extent of recombination on the 1D and 5D chromosomes of *Triticum tauschii*. Final Program and Abstract guide. *Xth International Plant & Animal Genome Meeting*, San Diego, CA, Jan. 12-16.
- 2001 Sandhu, D.** 2001. Taming the beast: the wheat genome. 22nd Hard Winter Wheat Workers Workshop, February 18-20, 2001, Kansas City, Missouri
- Sandhu, D.**, Champoux, J. A., and Gill, K. S. 2001. Localization and high density mapping of gene containing regions of wheat homoeologous group 1 chromosomes. Final Program and Abstract guide. *IXth International Plant & Animal Genome Meeting*, San Diego, CA, Jan.13 -17.
- Sandhu, D.**, Shah, M. M.; Sidhu, D., Champoux, J. A., Gill, B. S., Gill, K. S. 2001. Structural organization of wheat genome. Final Program and Abstract guide. *IXth International Plant & Animal Genome Meeting*, San Diego, CA, Jan.13 -17.
- Champoux, J.A., **Sandhu, D.**, Bondareva, S.N. and Gill, K.S. 2001. Enrichment of Wheat group 1BS gene-rich regions using wheat-rye translocation lines. Final Program and Abstract guide. *IXth International Plant & Animal Genome Meeting*, San Diego, CA, Jan. 13-17.
- 2000 Sandhu, D.**, Champoux, J., Bondareva, S. and Gill., K.S. 2000. A major gene cluster in the centromeric region of wheat homeologous *group 1* chromosomes. Final Program and Abstract guide. *VIIIth International Plant & Animal Genome Meeting*, San Diego, CA, Jan. 9-13.

1999 Sandhu, D., Champoux, J.A., Gill, K.S. and Arumuganathan, K. 1999. Molecular characterization of chromosome arm (1DS) sorted by flow cytometry. Final Program and Abstract guide. *VIIth International Plant & Animal Genome Meeting*, San Diego, CA, Jan.17-21.

Bondareva, S.N., Champoux, J.A., **Sandhu, D.**, Gill, B.S. and Gill, K.S. 1999. Ordering of wheat gene cluster region probes using *Triticum tauschii* backcross population. Final Program and Abstract guide. *VIIth International Plant & Animal Genome Meeting*, San Diego, CA, Jan.17-21.

Champoux, J.A., **Sandhu, D.**, Bondareva, S.N. and Gill, K.S. 1999. Enrichment of gene cluster region by comparative mapping. Final Program and Abstract guide. *VIIth International Plant & Animal Genome Meeting*, San Diego, CA, Jan.17-21.

1998 Sandhu, D. and Gill, K.S. 1998. Identification of expressed sequence for a major gene cluster of wheat using RNA fingerprinting / differential display. Final Program and Abstract guide. *VIIth International Plant & Animal Genome Meeting*, San Diego, CA, Jan.18-22.

Gill, K.S., Arumuganathan, K., Champoux, J.A. and **Sandhu, D.** 1998. Construction of chromosome arm specific DNA libraries of wheat using flow cytometry. Final Program and Abstract guide. *VIIth International Plant & Animal Genome Meeting*, San Diego, CA, Jan.18-22.

Sandhu, D., Champoux, J.A., Gill, K.S. and Arumuganathan, K. 1998. Molecular characterization and utilization of sorted chromosomes of wheat and maize. Poster abstracts. *22nd Stadler Genetic Symposium*, Univ. of Missouri- Columbia, June 8-10.

Champoux, J.A., Bondareva, S.N., **Sandhu, D.**, and Gill, K.S. 1998. Marker Enrichment and fine mapping of a wheat gene cluster by comparative mapping. Poster abstracts. *22nd Stadler Genetic Symposium*, Univ. of Missouri- Columbia, June 8-10.

GRANTS AND APPLICATIONS:

A. Funded Grants:

2020 Almond Board of California. Evaluating new breeding material for salinity tolerance in almond rootstocks and exploring novel sources of salinity tolerance in Prunus. Sandhu D, Ferreira JFS, Suarez DL. \$218,230.

2018 Almond Board of California. Linking performance of almond rootstocks to underlying physiological and genetic determinants of salinity tolerance. Sandhu D, Suarez DL, Ferreira JFS. \$108,150

2017 Almond Board of California. Understanding genetic and physiological bases of salt tolerance in almond rootstocks. Sandhu D, Suarez DL, Ferreira JFS. \$112,500

2016 Almond Board of California. Understanding genetic and physiological bases of salt tolerance in almond rootstocks. Sandhu D, Suarez DL, Ferreira JFS. \$96,700

- 2014** United Soybean Board – Characterization of a Tgm9-induced mutant population for genetic improvement of quality traits in soybean. Bhattacharyya MK, **Sandhu D**, Palmer R, Cianzio S. (Total \$449,309; UWSP share \$150,000).
- 2012** United Soybean Board – Generating resources for functional analyses of soybean genes that control the seed protein and oil contents. Bhattacharyya MK, **Sandhu D**, Palmer, R. (Total \$148,850; UWSP share \$64,866).
- 2010.** NSF - Basic Research to Enable Agricultural Development. Gill, KS, **Sandhu D**, Dhugga, K, Johal, G. An alternate dwarfing system to improve seedling emergence, abiotic stress tolerance, root characteristics and nutrient uptake in wheat and other cereals. (Total \$1,502,710; UWSP share \$291,512).
- 2009.** Faculty Diversity Research Grant, UWsys. **Sandhu, D.** Molecular characterization of two temperature sensitive male sterile mutant genes in soybean. (\$12,500).
- 2008.** USDA. Bamberg, J.B., Harvey, M.J., Jansky, S., **Sandhu, D.**, Barta, T. Genetic improvement of potato for tuber calcium uptake. (Total \$400,000; UWSP share \$91,524).
- 2007.** American Science and Technology Corp. Singaas, E., Sharkey, T. **Sandhu, D.** Industrial production of the bio-rubber precursor isoprene. (\$25,139).

Undergraduate Research Students 2005-present

118.	03/2023 – present	Emile Tannous
117.	03/2023 – present	Kathryn Song
116.	03/2023 – present	Serena Collins
115.	02/2023 – present	Douglas Dinh-Tran
114.	02/2023 – present	Sydney Trieu
113.	01/2023 – present	Kyle Cheng
112.	01/2023 – present	Karar Alhakim
111.	11/2021 - present	Lorenzo Reyes
110.	12/2019 – present	Maria William
109.	09/2018 – present	David William
108.	11/2021 – 12/2022	Gustavo Espitia
107.	06/2021 – 09/2022	Gabriela Hernandez
106.	10/2021 – 05/2022	Chirag Kulkarni
105.	01/2020 – 06/2021	Fangsheng Chao
104.	01/2020 – 06/2021	Payal Vaghashia
103.	01/2020 – 06/2021	Riya Bhagat
102.	09/2019 – 06/2021	Minahil Khan
101.	06/2019 – 08/2021	Christian Duenas
100.	06/2019 – 08/2021	Trevor Reynolds

99.	06/2019 – 06/2021	Brian Vo
98.	06/2019 – 06/2021	Zhenting Lei
97.	06/2018 – 08/2020	Thomas Forest
96.	05/2018 – 11/2020	Christina Nguyen
95.	03/2018 – 06/2021	Marco Duenas
94.	12/2017 – 08/2021	Andrew Pallete
93.	11/2017 – 06/2019	Paul Markley
92.	08/2018 – 02/2020	Ajareshwar Boparai
91.	09/2018 – 12/2018	Katy Lam
90.	06/2018 – 12/2018	Vanessa Perez
89.	05/2018 – 09/2018	Brianna Song
88.	06/2017 – 08/2018	Michael Picarazzi
87.	01/2015 – 08/2015	Lindsey Price
86.	01/2015 – 08/2015	James Ferrell
85.	01/2015 – 08/2015	Brian Lenz
84.	01/2015 – 08/2015	Jisela Hagedorn
83.	01/2015 – 08/2015	Dylan Wodsedalek
82.	01/2015 – 08/2015	Jinzhi Li
81.	01/2015 – 12/2015	Kyle Stoltz
80.	09/2014 – 08/2015	Isabela Caulkins
79.	09/2014 – 08/2015	Brittany Erickson
78.	09/2014 – 08/2015	Stephanie Lindsell
77.	09/2014 – 08/2015	Haley Nowakowski
76.	09/2014 – 08/2015	Andrea Ball
75.	05/2014 – 12/2015	Andrea Noll
74.	05/2014 – 08/2015	Amanda Leisgang
73.	05/2014 – 05/2015	Matthew Phillips
72.	05/2014 – 05/2015	Echko Holman
71.	03/2014 – 05/2016	Zach Christensen
70.	11/2013 – 12/2015	Alicia Meis
69.	11/2013 – 05/2015	Sarah Przybylski
68.	11/2013 – 05/2015	Tyler Cina
67.	11/2013 – 08/2015	Sandi Thu
66.	09/2013 - 05/2015	Eric Hodkiewicz
65.	06/2013 - 12/2015	Zach Coleman
64.	01/2013 – 05/2015	Taylor Atkinson
63.	11/2012 – 08/2015	A.J. VanMeter
62.	09/2012 – 05/2015	Kai Chang
61.	09/2012 – 05/2015	Eric Baumert
60.	09/2012 – 05/2015	Moye Xu
59.	11/2011 – 05/2015	Jason Hanneman
58.	11/2011 – 12/2014	Christopher Navarro
57.	01/2014 – 12/2014	Sam Reed
56.	01/2014 – 12/2014	Ashley Walton
55.	11/2011 – 08/2014	Callie Johnson

54.	09/2012 – 05/2014	Austin Henderson
53.	09/2012 – 05/2014	Carly Gorecki
52.	09/2012 – 05/2014	Jessica Boelter
51.	09/2012 – 05/2014	Kaylin Kleinhans
50.	09/2013 – 05/2014	Alex Wouters
49.	01/2013 – 05/2014	David Barfknecht
48.	09/2013 – 05/2014	Rayne Nimz
47.	01/2014 – 05/2014	Taylor Elmhurst
46.	09/2012 – 01/2014	Napatsakorn Boonyoo
45.	06/2013 – 12/2013	Richard Gaffney
44.	09/2012 – 12/2013	Nigel Golden
43.	11/2012 – 12/2013	Katelyn Nett
42.	09/2012 – 12/2013	Daniel Vaz
41.	09/2011 – 08/2013	Ben Speth
40.	05/2012 – 08/2013	Yang Yang
39.	01/2011 – 06/2013	Alexandrea Ollhoff
38.	01/2013 – 05/2013	Christopher Paquette
37.	01/2013 – 05/2013	Jake Eisenschink
36.	01/2003 – 05/2013	Garrett Seichter
35.	09/2012 – 05/2013	Xiaojie Ma
34.	09/2012 – 05/2013	Daniel Ng
33.	09/2012 – 05/2013	Olivia Schiefelbein
32.	08/2012 – 12/2012	Xiaoran Sun
31.	09/2012 – 12/2012	Craig Schmid
30.	09/2012 – 12/2012	Steven Knight
29.	09/2012 – 12/2012	Silvia Bautista
28.	11/2011 – 12/2012	Mathew Weiss
27.	09/2010 – 07/2012	Stephanie Abel
26.	01/2012 – 05/2012	Jessica Greene
25.	01/2012 – 05/2012	Kelsey Kowenstrot
24.	11/2011 – 05/2012	David Schreiner
23.	09/2011 – 05/2012	Eddy Lovely
22.	05/2011 – 05/2012	Shane Dillman
21.	01/2011 – 05/2012	Jerott Moore
20.	01/2010 – 05/2012	Joshua Rogers
19.	09/2009 – 05/2012	Jaydeep Raval
18.	01/2010 – 05/2012	Eric Wermedal
17.	09/2010 – 05/2011	Emiline Buhler
16.	09/2010 – 05/2011	Warren Kistenbroker
15.	01/2010 – 05/2011	Jordan Baumbach
14.	01/2009 – 05/2011	Alina Ott
13.	01/2010 – 01/2011	Jon-Paul Ciszewski
12.	05/2009 - 12/2009	Brian Trautschold
11.	01/2008 – 12/2009	Ryan Frasch
10.	01/2008 – 12/2009	Courtney Weigand

9.	01/2009 – 08/2009	Mollie Schmidt
8.	09/2007 – 05/2009	Rebecca Slattery
7.	09/2007 – 05/2009	Sarah Pritzl
6.	09/2007 – 05/2009	Carol Kropidowski
5.	12/2007 -01/2008	Amanda Bronk
4.	09/2007 – 12/2007	Benjamin Korrer
3.	09/2006 – 05/2007	Kyle Curran
2.	09/2006 – 12/2006	Lauren Muhr
1.	09/2005 – 12/2005	Dan Robison

PROFESSIONAL SERVICE:

Manuscript Reviewed:

Review articles of professional scientific journals such as ACS Agricultural Science & Technology, Agronomy, Agriculture, BMC Genomics, BMC Plant Biology, Chromosoma, Computational and Structural Biotechnology Journal, Crop Journal, Crop Science, Euphytica, Frontiers in Plant Science, Functional & Integrative Genomics, Genome, Genomics, Horticulture Technology, Journal of Experimental Botany, Journal of Heredity, Journal of Plant Biochemistry and Biotechnology, Molecular Biology & Biotechnology, Molecular Biotechnology, Molecular Breeding, Molecular Genetics and Genomics, Pakistan Journal of Botany, Phytopathology, Plant Breeding, Plant Molecular Biotechnology, Plant Science, Planta, Plants, PLOS ONE, Proceedings of National Academy of Sciences USA, Scientific Reports, Theoretical and Applied Genetics and The Plant Genome.

Committee Membership:

01/2017 – Present	Member , University of California Riverside Institutional Biosafety Committee (IBC)
11/2020 – Present	Treasurer , Association of Agricultural Scientists for Indian Origin (AASIO)
09/2014 – 08/2015	Chair, Executive Committee , Department of Biology, University of Wisconsin – Stevens Point.
09/2014 – 08/2015	Executive Committee Member , Academy of Letters and Science. UWSP.
05/2013 – 08/2015	UWSP Undergraduate Research and Scholarly Activity committee.
05/2012 – 08/2015	University Personnel Development Committee , University of Wisconsin – Stevens Point.
10/2011 – 08/2015	Faculty Advisor, Scholar Society of UWSP , University of Wisconsin – Stevens Point.

- 09/2012 – 09/2014** **Budget and Facilities Committee:** Department of Biology, University of Wisconsin – Stevens Point.
- 09/2008 – 05/2012** **Academic Affairs Committee,** University of Wisconsin – Stevens Point.
- 09/2009 – 09/2012** **Student Centered Committee:** Department of Biology, University of Wisconsin – Stevens Point.
- 09/2005 – 05/2012** **Faculty Advisor, South Asia Society,** University of Wisconsin – Stevens Point.
- 2011** **Human Physiologist, Search and Screen Committee Member.** Department of Biology, University of Wisconsin – Stevens Point.
- 09/2007 – 09/2009** **Executive Committee,** Department of Biology, University of Wisconsin – Stevens Point.
- 09/2008 – 05/2009** **Grade Review Subcommittee,** University of Wisconsin – Stevens Point.
- 2009** **Biology Post Doc. Search and Screen Committee Member.** Department of Biology, University of Wisconsin – Stevens Point.
- 2007-08** **Grants Director Search and Screen Committee Member.** University of Wisconsin – Stevens Point.
- Ichthyologist Search and Screen Committee Member.** Department of Biology, University of Wisconsin – Stevens Point.
- 2006-07** **Developmental Biologist Search and Screen Committee Member.** Department of Biology, University of Wisconsin – Stevens Point.
- 2005-06** **Developmental Geneticist Search and Screen Committee Member.** Department of Biology, University of Wisconsin – Stevens Point.
- Advising:**
- 08/2005 – 08/2015** **Undergraduate Advisor,** University of Wisconsin – Stevens Point.
- 09/2011 – 08/2015** **Faculty Advisor, Scholar Society of UWSP,** University of Wisconsin – Stevens Point.
- 08/2005 – 08/2015** **Undergraduate Student Research Supervisor,** University of Wisconsin – Stevens Point.
- 08/2006 – 09/2012** **Faculty Advisor, South Asia Society,** University of Wisconsin – Stevens Point.

2009

Undergraduate Internship Advisor (Biol 499). University of Wisconsin – Stevens Point.

Courses taught at University of Wisconsin – Stevens Point (UWSP)

Biol 130 : Introduction to Plant Biology – required course of all Biology majors

Biol 210: (Principles of Genetics) – required course of all Biology majors

Biol 310/510 (Plant Genetics) – elective course of undergraduate and postgraduate students

Fall 2011

Frequency Tabulation

Total Respondents: 10 bi310-1 Sandhu Subgroup Respondents: 10

Response Set:	1 = Strongly Agree	Response Weight:	1 = 01
	2 =		2 = 02
	3 =		3 = 03
	4 =		4 = 04
	5 = Strongly Disagree		5 = 05

X 1.09

	1	2	3	4	5	Miss.	N	Mean	SD	MDN
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- 1) Were the lectures presented in an understandable manner?
 Total f: 7 1 1 1 9 1.33 0.71 1.0
 Total %: 77.8 11.1 11.1
- 2) Did instructor speak clearly & w/enough volume to be heard?
 Total f: 8 1 9 1.22 0.67 1.0
 Total %: 88.9 11.1
- 3) Did instructor make effective use of visual aid he/she chose
 Total f: 8 1 9 1.11 0.33 1.0
 Total %: 88.9 11.1
- 4) Did exams cover info presented in lectures/labs/handouts/etc
 Total f: 8 1 9 1.11 0.33 1.0
 Total %: 88.9 11.1
- 5) Did instructor allow questions in class & attempt to answer
 Total f: 8 1 9 1.11 0.33 1.0
 Total %: 88.9 11.1
- 6) Did instructor try to assist you with difficulties
 Total f: 9 9 1.00 0.00 1.0
 Total %: 100
- 7) Did instructor stimulate intellectual curiosity
 Total f: 9 9 1.00 0.00 1.0
 Total %: 100
- 8) Did instructor seem informed on current developments in area
 Total f: 9 9 1.00 0.00 1.0
 Total %: 100

Response Set:	1 = Strongly Agree	Response Weight:	1 = 01
	2 =		2 = 02
	3 =		3 = 03
	4 =		4 = 04
	5 = Strongly Disagree		5 = 05

1	2	3	4	5	Miss.	N	Mean	SD	MDN
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9) Does instructor show active interest in subject matter

Total f:	9				1	9	1.00	0.00	1.0
Total %:	100								

Frequency Tabulation

Total Respondents: 19

bi130-3 Sandhu

Subgroup Respondents: 19

Response Set:	1 = Strongly Agree	Response Weight:	1 = 01
	2 =		2 = 02
	3 =		3 = 03
	4 =		4 = 04
	5 = Strongly Disagree		5 = 05

 $\bar{x} = 1.32$

	1	2	3	4	5	Miss.	N	Mean	SD	MDN
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1) Were the lectures presented in an understandable manner?

Total f:	11	5	3				19	1.58	0.77	1.0
Total %:	57.9	26.3	15.8							

2) Did instructor speak clearly & w/enough volume to be heard?

Total f:	6	7	6				19	2.00	0.82	2.0
Total %:	31.6	36.8	31.6							

3) Did instructor make effective use of visual aid he/she chose

Total f:	14	4			1		18	1.22	0.43	1.0
Total %:	77.8	22.2								

4) Did exams cover info presented in lectures/labs/handouts/etc

Total f:	13	6					19	1.32	0.48	1.0
Total %:	68.4	31.6								

5) Did instructor allow questions in class & attempt to answer

Total f:	17	2					19	1.11	0.32	1.0
Total %:	89.5	10.5								

6) Did instructor try to assist you with difficulties

Total f:	16	3					19	1.16	0.37	1.0
Total %:	84.2	15.8								

7) Did instructor stimulate intellectual curiosity

Total f:	12	7					19	1.37	0.50	1.0
Total %:	63.2	36.8								

8) Did instructor seem informed on current developments in area

Total f:	16	3					19	1.16	0.37	1.0
Total %:	84.2	15.8								

Frequency Tabulation

Total Respondents: 23

bi130-4 Sandhu

Subgroup Respondents: 23

Response Set:	1 = Strongly Agree	Response Weight:	1 = 01
	2 =		2 = 02
	3 =		3 = 03
	4 =		4 = 04
	5 = Strongly Disagree		5 = 05

$\bar{x} = 1.41$

	1	2	3	4	5	Miss.	N	Mean	SD	MDN
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1) Were the lectures presented in an understandable manner?

Total f:	14	6	2	1			23	1.57	0.84	1.0
Total %:	60.9	26.1	8.7	4.3						

2) Did instructor speak clearly & w/enough volume to be heard?

Total f:	13	4	6				23	1.70	0.88	1.0
Total %:	56.5	17.4	26.1							

3) Did instructor make effective use of visual aid he/she chose

Total f:	16	4	1		1	1	22	1.45	0.96	1.0
Total %:	72.7	18.2	4.5		4.5					

4) Did exams cover info presented in lectures/labs/handouts/etc

Total f:	17	5	1				23	1.30	0.56	1.0
Total %:	73.9	21.7	4.3							

5) Did instructor allow questions in class & attempt to answer

Total f:	19	3			1		23	1.30	0.88	1.0
Total %:	82.6	13.0			4.3					

6) Did instructor try to assist you with difficulties

Total f:	18	4			1		23	1.35	0.88	1.0
Total %:	78.3	17.4			4.3					

7) Did instructor stimulate intellectual curiosity

Total f:	16	6			1		23	1.43	0.90	1.0
Total %:	69.6	26.1			4.3					

8) Did instructor seem informed on current developments in area

Total f:	19	2	1	1			23	1.30	0.76	1.0
Total %:	82.6	8.7	4.3	4.3						

Response Set:	1 = Strongly Agree	Response Weight:	1 = 01
	2 =		2 = 02
	3 =		3 = 03
	4 =		4 = 04
	5 = Strongly Disagree		5 = 05

	1	2	3	4	5	Miss.	N	Mean	SD	MDN	
-----+-----+-----+-----+-----+-----+-----+-----+-----+-----+-----											
9) Does insturctor show active interest in subject matter											
Total f:	18	3			1		1	22	1.32	0.89	1.0
Total %:	81.8	13.6			4.5						

Spring 2014

Frequency Tabulation

Total Respondents: 75 bi210-2 Sanhu Subgroup Respondents: 75

Response Set:	1 = Strongly Agree	Response Weight:	1 = 01
	2 =		2 = 02
	3 =		3 = 03
	4 =		4 = 04
	5 = Strongly Disagree		5 = 05

$\bar{x} = 1.44$

	1	2	3	4	5	Miss.	N	Mean	SD	MDN
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1) Were the lectures presented in an understandable manner?

Total f:	38	21	11	3	2		75	1.80	1.01	1.0
Total %:	50.7	28.0	14.7	4.0	2.7					

2) Did instructor speak clearly & w/enough volume to be heard?

Total f:	34	28	8	2	2	1	74	1.78	0.94	2.0
Total %:	45.9	37.8	10.8	2.7	2.7					

3) Did instructor make effective use of visual aid he/she chose

Total f:	50	14	9		2		75	1.53	0.91	1.0
Total %:	66.7	18.7	12.0		2.7					

4) Did exams cover info presented in lectures/labs/handouts/etc

Total f:	52	14	7	1	1		75	1.47	0.83	1.0
Total %:	69.3	18.7	9.3	1.3	1.3					

5) Did instructor allow questions in class & attempt to answer

Total f:	60	9	5	1			75	1.29	0.65	1.0
Total %:	80.0	12.0	6.7	1.3						

6) Did instructor try to assist you with difficulties

Total f:	54	14	6	1			75	1.39	0.70	1.0
Total %:	72.0	18.7	8.0	1.3						

7) Did instructor stimulate intellectual curiosity

Total f:	51	17	4	2		1	74	1.42	0.72	1.0
Total %:	68.9	23.0	5.4	2.7						

8) Did instructor seem informed on current developments in area

Total f:	65	6	1	2		1	74	1.19	0.59	1.0
Total %:	87.8	8.1	1.4	2.7						

