**Name:** Hussein A. Abdel-Haleem

**Current Address:**

**US Arid-Land Agricultural Research Center (ALARC)**

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**Research Interests**

* Using different breeding methodologies, population structures, and genomic techniques coupled with diverse germplasm to enhance the effectiveness of selection for desired traits
* Optimizing and developing efficient breeding methodologies and phenotyping techniques to enhance germplasm and produce superior cultivars
* Developing and utilizing genetic and genomics tools to improve breeding efficiency, develop breeder-friendly and high throughput DNA markers, discover new positive alleles for important economic traits, leverage high throughput SNP technologies for QTL analyses, association mapping and genome wide selection approaches
* Using conventional breeding and marker-assisted selection techniques combined with transgenic technologies

**Education**

**Ph.D** 2001 - 2004

*Plant Science/Plant Genetics*, Montana State University-Bozeman, USA

Title: *Genetics and mapping of quantitative trait loci of feed quality-related traits in barley (Hordeum vulgare L.)*

**M.Ag** 1997 - 1999

*Applied Biological Sciences*, Saga University, Japan

Title: *Biotechnological studies toward improvement of drought tolerance in rice*

**B. Sc** 1989 - 1993

*Agricultural Science/Crop Sciences* (Graduated with honor), Alexandria University, Egypt

**Professional Experience**

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| Research Geneticist (G13 level)  US Arid-Land Agricultural Research Center  Agricultural Research Services, Maricopa, AZ | 1/2015-present |

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| Assistant Research Scientist  Institute of Plant Breeding, Genetics & Genomics  University of Georgia, Athens, GA | 1/2010– 1/2015 |

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| Post-doctorate Research Associate  Institute of Plant Breeding, Genetics & Genomics  University of Georgia, Athens, GA | 9/2007–12/2009 |

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| Post-doctorate Research Associate  Center for Applied Genetics Technologies  University of Georgia, Athens, GA | 1/2005-8/2007 |

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| Graduate Research Assistant  Department of Plant Sciences & Plant Pathology  Montana State University, Bozeman, MT | 5/2001 – 12/2004 |

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| Assistant Lecturer  Department of Crop Science  Alexandria University, Alexandria, Egypt | 10/1999 – 4/2001 |

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| Graduate Research Assistant  Genetic Engineering Laboratory  Saga University, Saga, Japan | 10/1997 – 9/1999 |

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| Teaching Assistant/Manger of rice grain quality lab  Department of Crop Science  Alexandria University, Alexandria, Egypt | 10/1993 – 9/1997 |

**Fellowships and Awards**

* Research assistantship-PSPP, Montana State University, 2001-2004
* Japanese Government Scholarships(MONBUSHO), 1997-1999
* Top graduate student in Crop Science Department, Alexandria Univ., Egypt 1993
* Outstanding student award, Faculty of Agriculture, Alexandria Univ., Alexandria, Egypt, 1990-1993

**Professional Service**

* + Ad hoc reviewer: Theoretical and Applied Genetics (TAG), Genome, Euphytica, Field Crops Research, Plant and Soil, and Molecular Breeding journals
  + Member of Crop Science Society of America (CSSA)
  + Member of the Association for the Advancement of Industrial Crops (AAIC)
  + Member of National Association of Plant Breeders (NAPB)
  + Judge at NAPB 2014 Graduate Research Poster Competition.

**Teaching Experience**

* Assistant lecturer, Crop Science Department, Alexandria University, 1999-2001
* Teaching Assistant, Crop Science Department, Alexandria University, 1993-1997
* Frequent Guest Lecturer, Quantitative Aspects of Plant Breeding “CRSS 8880” Institute for Plant Breeding, Genetics and Genomics, Fall 2012

**Variety Registration and Germplasm Release**

* Soybean germplasm lines, G07-6012 and G07-6029. 2013. Plant Cultivar and Germplasm Release Committees (PCGRC)-UGA
* Soybean germplasm lines, G08PR-394 and G09PR-80. 2012. Plant Cultivar and Germplasm Release Committees (PCGRC)-UGA

**Technical Abstracts and Conferences**

1. Anh-Tung Pham, D. Harris, J. Buck, J. Serrano, **H. Abdel-Haleem**, P. Cregan, Q. Song, H.R Boerma, and Z. Li “Fine Mapping of Candidate Gene(s) That Controls the Resistance of Frogeye Leaf Spot Disease in Soybean”. Plant & Animal Genomes XII Conference. January 10-14, 2015, Town & Country Convention Center, San Diego, CA.
2. **Abdel-Haleem, H.**, T. Carter, H.R. Boerma and Z. Li “Improving drought tolerance in soybean” The 4th Annual Meeting of the National Association of Plant Breeders “Breeding for Tolerance to Water Stress”. August 5‐8, 2014, Minneapolis, MN.
3. Li, Z., J-H. Shin, **H. Abdel-Haleem**, M. Riar, T. Carter Jr., T. Sinclair, S. Jackson and H-R Boerma “Utilizing genomic tools to improve drought tolerance in soybean” 15th Biennial Molecular & Cellular Biology of the Soybean Conference, August 3-6, 2014. Minneapolis, Minnesota.
4. **Abdel-Haleem A.**, Q. Song, R. Nelson, P. Cregan, R. Boerma and Z. Li ”Genome-Wide Association Study Confirmed a Major QTL for Salt Tolerance in Soybean” 15th Biennial Molecular & Cellular Biology of the Soybean Conference, August 3-6, 2014. Minneapolis, Minnesota.
5. Pham A., J. Serrano, J. Buck, **H. Abdel-Haleem**, Q. Song, P. Cregan, H. Boerma, and Z. Li “Fine Mapping and Characterization of Candidate Gene(s) that Control the Resistance to Frogeye Leaf Spot Disease in Soybean” 15th Biennial Molecular & Cellular Biology of the Soybean Conference, August 3-6, 2014. Minneapolis, Minnesota.
6. **Abdel-Haleem, H.**, P. Ji, H.R. Boerma and Z. Li “R Software Program for Conducting Parent-Offspring Test Using SNP Markers”.  The ASA, CSSA, and SSSA International Annual Meetings, "Water, Food, Energy & Innovation for a Sustainable World," November 3-6, 2013, Tampa, FL.
7. **Abdel-Haleem, H.,** W.T. Schapaugh Jr., K. Rainey, V.R. Pantalone, G. Shannon, J. Klein, T.E. Carter Jr., A.J. Cardinal, E.R. Shipe, A. M. Gillen, P. Chen, D. B. Weaver, H.R. Boerma and Z. Li “Genetic Gain for Seed Yield in Southern Soybean Cultivars”.  The ASA, CSSA, and SSSA International Annual Meetings, "Water, Food, Energy & Innovation for a Sustainable World," November 3-6, 2013, Tampa, FL.
8. *Pham A.*, **H. Abdel-Haleem**, H. R. Boerma and Z. Li “Fine mapping and identification of candidate genes in linkage group O controlling the resistance to Southern root-knot nematode in PI96354” 14th Biennial Molecular & Cellular Biology of the Soybean Conference, August 12-15, 2012. Des Moines, AI.
9. **Abdel-Haleem H**., H. R. Boerma, T. E. Carter, T. Rufty and Z. Li “QTL controlling aluminum tolerance in soybean: SNP marker discovery and validation” 14th Biennial Molecular & Cellular Biology of the Soybean Conference, August 12-15, 2012. Des Moines, AI.
10. **Abdel-Haleem H.**, G-J Lee, T. Carter, and H.R. Boerma” Fibrous root as an avoidance mechanism for drought resistance in soybean: Identification of fibrous rooting QTLs”. 13th Biennial Molecular & Cellular Biology of the Soybean Conference, August 8-11, 2010. Durham, NC.
11. **Abdel-Haleem H.**, H.R. Boerma, and T.E. Carter Jr “Dissecting of drought tolerance in soybean” Southern Soybean Breeder Tour. September 4, 2008. Plains, Georgia.
12. Hawley, R., M.B. Slabaugh, **H. Abdel-Haleem,** G. Cole, E. Hoeft, and S. J. Knapp “Single nucleotide polymorphism genotyping assays for an acetohydroxyacid synthase mutation conferring resistance to sulfonylurea herbicides”. 7th European conference on Sunflower Biotechnology. September 3-6, 2006, Gengenbach, Germany.
13. **Abdel-Haleem**, **H.**, M. Giroux, H. Talbert, J. Bowman , V. Kanazin, and T. Blake “Identification of QTLs controlled the feed quality of barley”. Plant & Animal Genomes XII Conference. January 10-14, 2004, Town & Country Convention Center, San Diego, CA.
14. **Abdel-Haleem**, **H.**, V. Kanazin, H. Talbert, M. Giroux, J. Bowman, and T. Blake “Improvement of barley feed quality using a genetic approach”.  Annual Meeting of American Society of Agronomy.  November 2-6, 2003, Denver, CO.

**Manuscripts Submitted or in Preparation**

1. Hwang S, C. A. King, J. D. Ray, P.B. Cregan, P. Chen, T.E. Carter, Jr., Z. Li, **H. Abdel-Haleem**, K.W. Matson, W. Schapaugh, Jr., and L. C. Purcell (2015) Confirmation of delayed canopy wilting QTLs from multiple soybean mapping populations. Theoretical and Applied Genetics (under Review)
2. *Donna K. Harris*, D.R. Walker, E.J. Sikora, **H. Abdel-Haleem**, D.B. Weaver, J.D. Mueller, R.C. Kemerait, J.W. Buck, D.V. Phillips, Z Li, and H.R Boerma (2015) The Effect of the ‘Hyuuga’ Soybean Lesion Type and Canopy Severity on Yield Loss in the Presence of Soybean Rust. Plant diseases (In-review)
3. **Abdel-Haleem, H.,** W.T. Schapaugh Jr., K. Rainey, V.R. Pantalone, G. Shannon, J. Klein, T.E. Carter Jr., A.J. Cardinal, E.R. Shipe, A. M. Gillen, P. Chen, D. B. Weaver, H.R. Boerma and Z. Li (2015) Genetic improvement in yield of soybean cultivars in maturity groups V, VI, and VII. Crop Science (In-review).
4. *Harris, D.K.*, **H. Abdel-Haleem**, D.V. Phillips, Z. Li, and H.R. Boerma (2015) Identification of soybean QTLs conditioning variation in Asian soybean rust-induced canopy damage. Crop Science (In-review).

**Publications**

**Peer-Reviewed Journal Articles**

1. **Abdel-Haleem, H.**, and S. Tanimoto (2008) ABA-induced polypeptide accumulation in drought tolerant rice. Bull. Fac. Agr. Saga Univ. 93:109-115.
2. Wills, D, **H. Abdel-Haleem,** S. Knapp, and J. Burke (2010) Genetic architecture of post-domestication traits in sunflower. J. Heredity 101: 727-736.
3. **Abdel-Haleem, H.**, J. Bowman, M. Giroux, V. Kanazin, H. Talbert, L. Surber, and T. Blake (2010) Quantitative trait loci of acid detergent fiber and grain chemical composition in hulled x hull-less barley population. Euphytica 172: 405-418.
4. **Abdel-Haleem, H.**, J.G.P. Bowman, V. Kanazin, L. Surber, H. Talbert, P.M. Hayes, and T. Blake (2010) Quantitative trait loci for dry matter digestibility and particle size traits in two-rowed x six-rowed barley population. Euphytica 172: 419-433(corresponding author).
5. *Surber L.,* **H.** **Abdel-Haleem**, J. Martin, P. Hensleigh, D. Cash, J. Bowman, and T Blake (2011) Mapping quantitative trait loci controlling variation in forage quality traits in barley. Molecular Breeding 28:189-200.
6. **Abdel-Haleem, H.**, G-J Lee, and H.R. Boerma (2011) Identification of fibrous root QTLs in soybean. Theoretical and Applied Genetics 122: 935-946.
7. Prothro, J., *K. Sandlin*, **H. Abdel-Haleem**, E. Bachlava, W. White, S. Knapp and C. McGregor (2012) Main and epistatic quantitative trait loci associated with seed size in watermelon. Journal of the American Society of Horticultural Science.137:452-457.
8. **Abdel-Haleem, H.**, T. Carter Jr, L. Purcell, A.C. King, L. Ries, P. Chen, W. Schapaugh Jr, T.R. Sinclair, and H.R. Boerma (2012) Mapping of quantitative trait loci for canopy wilting trait in soybean (*Glycine max L. Merr*). Theoretical and Applied Genetics. 125:837-846.
9. Carpentieri-Pipolo V, A.E. Pipolo, **H. Abdel-Haleem**, H.R. Boerma, and T.R. Sinclair (2012) Identification of QTLs associated with limited leaf hydraulic conductance in soybean. Euphytica86:679-686.
10. **Abdel-Haleem, H.**, J.G.P. Bowman, L. Surber, and T. Blake (2012) Variation in feed quality of beef cattle in Steptoe x Morex barley population. Molecular Breeding 29: 503-514.
11. **Abdel-Haleem, H**, P. Ji, H. Roger Boerma and Zenglu Li (2013). An R Package for SNP Marker-based Parent-Offspring Test. Plant Methods. 9:44.
12. **Abdel-Haleem, H.**, E. Wood E, H.R. Boerma, and Z. Li (2013) Registration of G08PR-394 and G09PR-80 soybean germplasm lines with diverse pedigrees. J. Plant Reg. 7:347–352.
13. *Pham A-T*, K. McNally, **H.** **Abdel-Haleem**, H. R. Boerma, Z. Li (2013) Fine mapping and identification of candidate genes controlling the resistance to southern root-knot nematode in PI 96354. Theoretical and Applied Genetics: 126:1825-38.
14. Prothro J, **H. Abdel-Haleem**, E. Bachlava, V. White, S. Knapp and C.E. McGregor (2013) Quantitative trait loci associated with sex expression in an inter-subspecific watermelon population. J Amer Soc Hort Sci. 138:125-130.
15. *Warrington C.V*, **H. Abdel-Haleem**, J.H. Orf, A.S. Killam, N. Bajjalieh, Z. Li and H.R. Boerma (2013) Resource allocation for seed protein and several amino acids in soybean. Crop Science. 54:963-970 (doi: 10.2135/cropsci2013.12.0799).
16. *Warrington C.V*, **H. Abdel-Haleem,** D.H. Hyten, P.B. Cregan, J.H. Orf, A.S. Killam, N. Bajjalieh, Z. Li and H.R. Boerma (2014) Mapping QTL for seed protein and amino acids in the Benning × Danbaekkong soybean population. Theor Appl Genet. DOI 10.1007/s00122-015-2474-4
17. McGregor, C.E, V. Walters, T. Vashisth and **H. Abdel-Haleem** and C.E. (2014) Flowering time in watermelon is associated with a major quantitative trait locus on chromosome 3. J Amer Soc Hort Sci. 139: 8-53.
18. **Abdel-Haleem, H.**, T. Carter, T. Rufty, H.R. Boerma and Z. Li (2014) Quantitative trait loci controlling aluminum tolerance in soybean: candidate gene and single nucleotide polymorphism marker discovery. Mol Breeding. 33: 851-862. doi:10.1007/s11032-013-9999-5.
19. Shin J-H, J. Vaughn. **H. Abdel-Haleem**, C. Chavarro, B. Abernathy, K.D Kim, H-R Boerma, S. Jackson, and Z. Li, (2014) Effects of drought stress on gene expression in soybean revealed by RNA-seq analysis. BMC Plant Biology. 15:26 doi:10.1186/s12870-015-0422-8.
20. **Abdel-Haleem, H.,** T. Carter, E. Wood E, H.R. Boerma, and Z. Li (2014) Registration of G07-6012 and G07-6029 Soybean Germplasm Lines with Glycine Soja Pedigrees. J. Plant Reg. doi:10.3198/jpr2014.09.0059crg
21. Anh-Tung Pham, D. Harris, J. Buck, J. Serrano, **H. Abdel-Haleem**, P. Cregan, Q. Song, H.R Boerma, and Z. Li (2015) Fine Mapping and Characterization of Candidate Gene(s) that Control the Resistance to Frogeye Leaf Spot Disease in Soybean. PLoS One (in Press)

**Patents**

1. Bachlava, E., **H. Abdel-Haleem**, S. Knapp, C. McGregor, J. Prothro, K. *Sandlin, G.R*. Tolla and V. White (2014) Methods and compositions for producing watermelon plants with selected seed sizes. US Patent Application, US20140041078 A1. Filed on August 6, 2012; published on February 6, 2014.
2. **Abdel-Haleem, H.,** S. Knapp, C. McGregor, J. Prothro (2014) Methods and compositions for watermelon sex expression. US Patent Application, US 2014/0157450 A1. Filed on December 4, 2012; published on June 5, 2014.

**Additional Publications**

1. **Abdel-Haleem, H.** Biotechnological studies toward improvement of drought tolerance in rice. Saga University, Japan. 242 pp. 1999 (Masters Thesis)
2. **Abdel-Haleem, H.** Genetics and mapping of quantitative trait loci of feed quality-related traits in barley (*Hordeum vulgare* L.). Montana State University. 187 pp. 2005 (PhD Thesis).
3. **Abdel-Haleem, Hussein** (2007). *Review of* Ram J. Singh “Genetic resources, chromosome engineering, and crop improvement: Volume 4: Oilseed Crops.” Crop Science. 48:823-824. (Book Review)
4. **Abdel-Haleem, Hussein** (2007). *Review of* Michael Lynch "The origins of genome architecture."  Journal of Heredity 98(6):633-634. (Book Review)
5. Blake T.K, V.C Blake, J.C.P. Bowman, and **H. Abdel-Haleem** (2010). Barley feed uses and quality improvement. pp 522-531. In S.E. Ullrich (ed.). Barley production, improvement, and uses. Wiley-Blackwell, Ames, IA, USA. (Book Chapter)