ASHEESH K. SINGH
Professor
Bayer Chair in Soybean Breeding
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EDUCATION

2003-2007 Ph.D. University of Guelph, Plant Genetics and Breeding, Maize Breeding.
1998-2001 M.Sc. University of Saskatchewan, Plant Science, Barley Breeding.
1994-1998 B.Sc. Agriculture and Animal Husbandry, G.B Pant University.

APPOINTMENTS

2020- Professor, Department of Agronomy, Iowa State University (ISU). *Nine months appointment: 80% Research, 20% Teaching.*
Faculty member: Genetics and Genomics Program, R F Baker Center for Plant Breeding, Plant Sciences Institute.
2021- Associate Chair of Discovery and Engagement, Department of Agronomy, ISU.
2018- Director of Graduate Education (Plant Breeding).
2017- 2020 Associate Professor, Department of Agronomy, Iowa State University. *Nine months appointment: 80% Research, 20% Teaching.*
Faculty member: Genetics and Genomics Program, R F Baker Center for Plant Breeding, Plant Sciences Institute.
2013-2017 Assistant Professor, Department of Agronomy, Iowa State University. *Nine months appointment: 80% Research, 20% Teaching.*
2007-2013 Research Scientist, Durum wheat breeder (Permanent position), Agriculture and Agri-Food Canada. *12 months appointment: 100% research.*
2001-2002 Research Assistant, Crop Development Center, University of Saskatchewan (Barley and Oat breeding).

HONORS AND AWARDS

2020 ISU Award for Mid-Career Achievement in Research.
2020 CALS Mid-Career Achievement in Research Award, ISU.
2020 Raymond and Mary Baker Agronomic Excellence Award, ISU.
2018 CALS team award (Plant Breeding Education in Africa), ISU.
2017 Faculty Fellow, Plant Sciences Institute, ISU.
2013 Faculty Fellow, R F Baker Center for Plant Breeding, ISU.
2013 Sustainable Futures Award, Agricultural Institute of Canada.
2013 Monsanto Chair in Soybean Breeding, ISU.
2000 T.C. Vanterpool Memorial Prize for Outstanding Student in Plant Pathology and Mycology, Runner-up, Canadian Society of Phytopathology.
1998 Vice-Chancellor's Gold Medal, College of Agriculture, G B Pant University.

SUMMARY OF PEER REVIEWED PUBLICATIONS

- **128 peer reviewed papers** in journals and conference proceedings.
  - 104 peer reviewed journal articles
  - 24 peer reviewed conference full papers (including accepted)

SUMMARY OF PLANT BREEDING OUTPUTS

- Soybean (USA): Three varieties commercialized. Several varieties undergoing breeder seed increase. 18 Invention disclosures made at ISU.
- Wheat (Canada): 39 cultivars received registration support, and 13 germplasm lines developed.

FIVE MOST NOTABLE PUBLICATIONS (last five year)

- **Singh AK**, B Ganapathysubramanian, S Sarkar, A Singh. (2018). Deep learning for plant stress phenotyping: trends and future perspectives. Trends in Plant Science. 23(10): 883-898.
- Ghoshal S, D Blystone, **AK Singh**, B Ganapathysubramanian, A Singh, S Sarkar. (2018). Bringing consistency to plant stress phenotyping through an explainable deep machine vision framework. Proceedings of the National Academy of Sciences. 115(18): 4613–4618.
- Zhang J, HS Naik, T Assefa, S Sarkar, RV Chowda-Reddy, A Singh, B Ganapathysubramanian, **AK Singh** (2017) Computer vision and machine learning for robust phenotyping in genome-wide studies. Scientific Reports, Scientific Reports 7, Article number: 44048.
- Singh A, B Ganapathysubramanian, **AK Singh**, S Sarkar (2016). Machine learning for highthroughput stress phenotyping in plants. Trends in Plant Science. 21(2): 110-124.
- Zhang J, A Singh, D Mueller, **AK Singh** (2015). Genome-wide association and epistasis studies unravel the genetic architecture of sudden death syndrome resistance in soybean. The Plant Journal. 84(6):1124-36.

INVITED PRESENTATIONS (National and International): 65, and >100 media engagements with magazines, radio stations, extension talks, national and international tours.

RESEARCH MENTORING AND SUPERVISION (since 2014): Undergraduates: >50; MS students: 6; PhD students: 10; Post-Doctoral Fellows: 5; Professional and Scientific staff: 8.

COURSE LEAD (at ISU): Principles of Cultivar Development (AGRON 521), Field Methods in Plant Breeding (AGRON 522)

NOTABLE SYNERGISTIC ACTIVITIES

- Associate Editor: Science Plant Phenomics (2018- current)
- Examples of service to the scientific community: Co-organizer of the 1st and 2nd international workshop on machine learning for cyber-agricultural systems; International advisory committee for the 2020 World Soybean Research Conference; 2018 Asia-Pacific Federation for Information Technology in Agriculture (AFITA) and World Conference on Computers in Agriculture (WCCA) on Research Frontiers in Precision Agriculture; Invited session chair at the 2018 International Plant Phenotyping Symposium, and 2014 Soybean Breeders Workshop.
- Served on several committees at ISU.
- Expert reviewer (grant proposals): 11 organizations (national and international).
- Expert ad-hoc (manuscript peer-review): 16 journals.
- Contributions to farm and national economy through product development: Commercially varieties developed by Singh (as main or co-developer) are grown in ~ 10 million acres each year (Source: Canadian Grains Commission).