

## **2022 OUTSTANDING SERVICE AWARD**

*Dr. Jitendra Paliwal, P.Eng., FEC*



Dr. Jitendra Paliwal graduated with a bachelor's degree in Agricultural Engineering from G.B. Pant University in India in 1994 and completed his M.Sc. and Ph.D. in Biosystems Engineering from the University of Manitoba. He is now a Professor of Biosystems Engineering at the Price Faculty of Engineering and holds two Associate Dean portfolios (Graduate Programs and Academic) in the Faculty of Agricultural & Food Sciences. In addition, he is the faculty's Equity, Diversity, and Inclusion (EDI) Lead and currently serves on the university's EDI Task Force.

Jitendra initiated the development of an Imaging and Spectroscopy Laboratory in the Department of Biosystems Engineering in 2002. The laboratory uses non-destructive optical techniques to assess grain quality post-harvest. His first major project was in collaboration with Perten Instruments AB-Sweden (now Perkin Elmer), integrating visible and near-infrared (NIR) imaging modalities for the next generation of grain analyzers. Since then, Jitendra's research group has developed hardware and software solutions which are widely used by the designers of grain quality monitoring and assessment systems. His research team develops techniques to modernize and automate post-harvest handling and storage of grains, oilseeds, and pulses. These include low-cost NIR analyzers, integrated Raman-NIR instruments, grain bin monitoring systems, and techniques to detect precursors to spoilage by non-invasive electromagnetic imaging. One of his ideas to adapt a cancer imaging modality into a non-invasive grain monitoring system has been a major commercial success for Manitoba's engineering community. His engineering achievements have been documented in more than 106 peer-reviewed technical papers published in many international scientific journals. In addition, he has contributed a chapter each in six different books and presented his research results at conferences worldwide.

His research work has been funded through federal and provincial grants along with private corporations' research contracts exceeding ten million dollars. An important aspect of Jitendra's work has been to train the next generation of highly qualified engineers.; he has contributed to the successful completion of 96 student theses and has also supervised the work of 17 post-doctoral fellows and 3 research associates.

Jitendra is a researcher of international fame and holds an Honorary Visiting Professor appointment at the South China University of Technology, Guangzhou, since the year 2016. In addition, he has developed collaborative research exchange programs with Universities in the USA, Egypt, Nigeria, Ireland, Iran, China, and India. In collaboration with the University of California and the University of Tokyo, Jitendra is a lead member of the International Society for Biological Shape Analysis, an international consortium consisting of scientists, physicians, dentists, and engineers.

Jitendra became a professional engineer in 2002 and has served on several Engineers Geoscientists Manitoba committees, including eleven years with the Experience Review Committee. A co-founder and previous Vice-President of the Association's India Members Chapter, he also served on Council for Engineers Geoscientists Manitoba and was its 100th President during the 2020 centennial year. He is also a member of the Canadian Society for Bioengineering (CSBE), the American Society of Agricultural and Biological Engineers, and the Canadian Agricultural Safety Association, and was an Associate Editor of CSBE's journal Canadian Biosystems Engineering. In addition, he served as an expert advisor to review Bill 48 and Bill 49 of the Manitoba Government in 2020. He is also a member of an expert panel of food scientists of

Indian origin named VAIBHAV, to advise the Government of India on long-term strategies for food sustainability. He was inducted as a Fellow of Engineers Canada in 2017.

Jitendra has been a recipient of many prestigious honours and awards starting with best Ph.D. thesis awards from the CSBE and the Sigma-Xi Scientific Research Society in 2002. He has been the recipient of CSBE's 2012 Young Engineer Award and 2017 John Clark Award. He has also received the University of Manitoba's Merit Award in 2015 in the combined category of teaching, research, and service, and Engineers Geoscientists Manitoba's Early Achievement Award in 2008 and Technical Excellence Award in 2017.

In recognition of his significant commitment to the Association, the profession, and the public, Engineers Geoscientists Manitoba is pleased to present the 2022 Outstanding Service Award to Dr. Jitendra Paliwal, P.Eng., FEC.