

# 2018 ASABE Fellow



**Chenghai Yang**, research agricultural engineer, United States Department of Agriculture, Agricultural Research Service, Southern Plains Agricultural Research Center, College Station, Texas, is being honored for outstanding contributions in development and integration of remote sensing and engineering technologies for precision agriculture and pest management.

Yang has focused his research on developing and using airborne multispectral and hyperspectral imaging technologies for monitoring crop growth and pest conditions for precision agriculture and for mapping invasive weeds on rangelands and waterways for effective management. He developed remote sensing–based methods for mapping crop yield variability and crop diseases to create prescription maps for variable rate chemical applications. He also developed practical image processing techniques for mapping many important invasive weeds on rangelands and waterways. Many of his accomplishments have resulted in significant and quantifiable technological and economic impacts and some have been adopted by government agencies, landowners, and growers.

Yang was the first to quantify the infestations of invasive giant reed along the Texas-Mexico border that threatens ecosystems and border security. The US Department of Homeland Security Customs and Border Protection has used the images and maps from his work to brief Congress on patrol activities and to identify sensitive areas to enhance border security. He thoroughly documented cotton root rot distributions in south and central Texas and developed practical guidelines for site-specific management of this destructive disease using aerial and satellite imagery and variable rate technology to significantly reduce fungicide use. Recently, he developed easy-to-use imaging systems to allow aerial applicators to install the systems on their aircraft for both aerial application and remote sensing to improve application efficiency and generate extra revenues.

A 24-year member of ASABE, Yang has chaired five ASABE committees and has served as associate editor for *Transactions of the ASABE* and *Applied Engineering in Agriculture*. He has also held various positions in four other professional societies and served as editor/associate editor for three other journals. He is adjunct professor at Texas A&M University and guest professor at four other universities.

Yang has authored or coauthored over 320 technical publications, including more than 140 peer-reviewed journal articles and 15 books/book chapters. He received three paper awards, including one from ASABE. He was the 2015 recipient of the Distinguished Career award from the Association of Overseas Chinese Agricultural, Biological and Food Engineers.