

# Trio Honored With 2008 Cotton Genetics Research Award

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Contact: [T. Cotton Nelson](#) or [Marjory Walker](#)  
(901) 274-9030

SAN ANTONIO, TX – The team of Drs. Al Bell, Forest Robinson and Dave Stelly received the 2008 Cotton Genetics Award by accomplishing a major breakthrough in transferring resistance to reniform nematode from a wild cotton species to upland cotton.

The announcement was made here today during the Cotton Improvement Conference of the National Cotton Council-coordinated 2009 Beltwide Cotton Conferences. In recognition, each team member will receive \$400.

“This is a major accomplishment in the area of cotton genetics and one that can have significant impacts on yield and profitability,” said nominator Dr. Wayne Smith, professor and associate head in Texas A&M University’s College of Agriculture and Life Sciences.

Smith wrote in his nomination letter that losses to reniform nematode can range as high as 50 percent in severely infested fields. Some authorities estimate the losses to reniform nematode to be in the order of \$130 million annually, or about 500,000 bales. The reniform nematode currently causes more losses than the root-knot nematode, which traditionally has been considered the most damaging nematode in U.S. cotton.

Dr. Bell, a USDA Agriculture Research Service (ARS) research plant pathologist in College Station, initiated a program of crossing and backcrossing aimed at transferring resistance from the wild diploid species, *G. longicalyx*, into upland cotton so that breeders and seed companies could then breed resistance into modern, adapted cultivars. Dr. Robinson, a USDA-ARS research zoologist in College Station, provided the nematology expertise and this team worked many years on the genetics and progeny evaluation for resistance. Dr. Stelly, a Texas A&M professor of Molecular & Environmental Plant Sciences, joined the team to provide cytological evaluation to confirm resistance in a true tetraploid, or upland cotton, with 52 chromosomes in its somatic cells. Dr. Stelly’s lab identified closely linked markers which will facilitate the identification of resistant progeny by plant breeders.

“Without these markers,” Smith noted, “the only way to identify resistant plants would be to dig each plant from the soil and go through a time consuming process of removing and counting eggs and vermiform nematodes, followed by selection for plants supporting reduced numbers.”

Another nominator, Dr. Richard Percy, research leader at the USDA-ARS Crop Germplasm Research Unit in College Station, said the germplasm developed by this team and provided to public and private breeders “offers the greatest potential for combating the recalcitrant and difficult to control reniform nematode.”

Dr. Bell, who has been with USDA since 1965, earned his B.S., M.S. and Ph.D. from the University of Nebraska before teaching botany at the University of Maryland for four years. He was elected a Fellow of the American Phytopathological Society in 1988 and awarded a USDA Certificate of Merit in 1997 and in 2001-2003.

Dr. Robinson earned his B.S. at Sul Ross State University and his M.S. and Ph.D. at Texas Tech University. He has worked for USDA-ARS since 1975. He received the Distinguished Service Award from the Organization of Nematologists of Tropical America in 1994 and the Bayer CropScience Award in 2005 for outstanding contributions to nematology in Latin America.

Dr. Stelly earned his B.S. and Ph.D. at the University of Wisconsin and his M.S. from Iowa State University. He began teaching at Texas A&M in 1983 and moved into his current position in 2000. Recipient of the 1995 Cotton Genetics Award, he served as chair of the International Cotton Genome Workgroup from 2002-05 and has been chair of the Comparative & Evolutionary Workgroup since 2005.

U.S. commercial cotton breeders have presented the Cotton Genetics Research Award for more than 40 years to a scientist for outstanding basic research in cotton genetics. The Joint Cotton Breeding Committee, comprised of representatives from state experiment stations, USDA, private breeders and the National Cotton Council, establishes award criteria.

Source: National Cotton Council