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Faculty of the corn breeding group at the University of Illinois

- Martin Bohn
- John Dudley
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Our objectives

- Improve grain yield and value-added traits of corn.
- Improve agronomic characteristics of corn including resistance to disease and pests.
- Provide educational opportunities for students that prepare them for careers in plant breeding, genetics, and plant pathology.
- Provide continuing educational opportunities for commercial corn breeders.

Program Highlights

- The Illinois Maize Breeding and Genetics Laboratory (IMGL) organized the 40th Illinois Corn Breeders' School held in Urbana, Illinois, March 1-2, 2004. This conference was dedicated to the memory of Denton Eugene Alexander, one of the founders of the school, who passed away on Monday, February 9, 2004. The table of contents and attendance lists of Corn Breeders' Schools are available at the IMBGL internet homepage at http://imbgl.cropsci.uiuc.edu.
- Prof. J.W. Dudley retired after 49 years dedicated research in applied breeding and quantitative genetics.
- One location of the 700-800 hybrid trial was grown by the University of Illinois in Urbana.
- The College of ACES celebrated the 100th year of agricultural research conducted at the "South Farm".

Publications

Dreissigacker, S., P. Zhang, M.L. Warburton, M. van Ginkel, D.A. Hoisington, M. Bohn, A.E. Melchinger. 2004. SSR and Pedigree Analyses of Genetic Diversity Among

CIMMYT Wheat lines Targeted to Different Mega-Environments" Crop Sci. 44:381-388.

Dudley, JW and R.J. Lambert. 2004. 100 generations of selection for oil and protein in corn. Plant Breeding Reviews 24:(part 1)79-110.

Dudley, J.W., A. Dijkhuizen, C. Paul, S.T. Coates, and T.R. Rocheford. 2004. Effects of random mating on marker-QTL associations in the cross of the Illinois High Protein X Illinois Low Protein maize strains. Crop Sci. 44:1419-1428.

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Hake S.,T.R. Rocheford. 2004. Exploiting Quantitative Trait Loci in Gene Discovery. Genes Dev. 18:597-601.

Laurei, C.C., S.D. Chasalow, J.R. Ledeaux, R.McCarroll, D. Bush, B. Haige, C. Lai, D. Clark, T.R. Rocheford, and J.W. Dudley. 2004. The genetic architecture of response to long-term artificial selection for oil concentration in the maize kernel. Genetics 168:2141-2155.

Mikkilineni V. and T.R Rocheford. 2004. Restriction Fragment Length Polymorphism Variant Frequency Differences Among Illinois Long-Term Selection Protein Strains. Plant Breeding Reviews. 24:111-131.

Moose, S.P., J.W. Dudley, T.R. Rocheford. 2004. Maize selection passes the century mark: a unique resource for 21st century genomics. Trends in Plant Science. 9: 358-364.

Papst C., M. Bohn, H.F. Utz, A.E. Melchinger, D. Klein, J. Eder. 2004. QTL mapping for European corn borer resistance (*Ostrinia nubilalis* Hb.), agronomic and forage quality traits of testcross progenies in early-maturing European maize (*Zea mays* L.) germplasm. Theor. Appl. Genet. 108: 1545-1554.

Reif, J. C., X. C. Xia, A. E. Melchinger, M. L. Warburton, D. A. Hoisington, D. Beck, M. Bohn, and M. Frisch. 2004. Genetic diversity determined within and among CIMMYT Maize populations of tropical, subtropical, and temperate germplasm by SSR markers. Crop Sci. 44:326-334.

Wilson, L.M., S. Whitt, A. Ibanez, T. R. Rocheford, M. M. Goodman and E. S. Buckler. 2004. Dissection of Maize Kernel Composition and Starch Production by Candidate Gene Association. Plant Cell. 16: 2719-2733.

Wong J.C., R.J. Lambert, E. T. Wurtzel, and T.R. Rocheford. 2004. QTL and Candidate Genes Phytoene Synthase and zeta-Carotene Desaturase Associated with Accumulation of Carotenoids in Maize. Theor. Appl. Genet. 108:349-359.

Xiu-Fang Song, Tong-Ming Song, Jing-Rui Dai, Torbert Rocheford, and Jian-Sheng Li. 2004. QTL Mapping of Kernel Oil Concentration with High-oil Maize by SSR Markers. Maydica. 49: 41-48.