

**Curriculum Vitae**  
**Herbert W. Ohm**

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**EDUCATION**

B.S. Agricultural Education, June 1967, University of Minnesota  
M.S. Plant Breeding, June 1969, North Dakota State University  
Ph.D. Plant Genetics and Breeding, December 1971, Purdue University

**PROFESSIONAL POSITIONS**

Purdue University  
Assistant Professor, 1/72 - 6/77  
Associate Professor, 7/77 - 6/83  
Professor of Agronomy, 7/83 - 11/04  
Distinguished Professor, 11/2004-present

**ADDITIONAL EXPERIENCE**

Pioneer Hi-Bred International  
Research Station Manager, Hard Winter Wheat, Hutchinson, KS, 1/80 - 8/80  
Team Leader, Purdue University/USAID Farming Systems  
Research Project, West Africa, 8/1983 - 8/1985  
Completed an intensive course in "Plant Molecular Biology" at the Cold Spring Harbor Laboratory, Cold Spring Harbor, NY, 7/1-21,1991  
Sabbatical leave at Plant Gene Expression Center, USDA-ARS, University of California-Berkeley; lab experience with a project to localize the N gene in tobacco conditioning resistance to tobacco mosaic virus; 11/1991-4/1992  
Sabbatical leave at CSIRO, Canberra, Australia; characterization of resistance to yellow dwarf viruses (YDV) in wheat derived from wheatgrass (*Agropyron intermedium*); lab experience using existing RFLP and E genome-specific repetitive sequences, development of low copy RAPD markers associated with YDV resistance, and cloning of DNA fragments; Nov 1992-April 1993  
Research leave at Western Australia Department of Agriculture and Murdoch University, Perth, WA. Develop collaboration with wheat research group on mapping of glume blotch resistance genes in wheat and develop capability to utilize wheat and rice gene databases to identify and fine-map genes of interest in wheat. 10/27 - 11/27, 2003.

**ADMINISTRATIVE/LEADERSHIP EXPERIENCE:**

Team Leader, Interdisciplinary Wheat and Oat Genetics and Breeding Program, 1981-present

-Coordinated collaborative research activities among scientists in Departments of Agronomy, Botany and Plant Pathology, Entomology, and USDA-ARS

-Develop research program with broad range of fundamental to applied research

Team Leader, Purdue/USAID Development Project, Burkina Faso, 1983-1985

- Supervised 31 field and office staff
- Developed collaborations with other int'l res. projects and National Extension Service
- Organized an international workshop on 'Appropriate Technologies for Farming Systems in West Africa'
- Edited proceedings of international workshop published in French and English
- Provided primary leadership to transfer 17 host-country project staff into the Burkina Faso national research structure prior to project completion

Member, Board of Directors, Indiana Crop Improvement Association, 1975-1983  
Superintendent, Intercollegiate Crops Contest, Chicago Board of Trade, 1977-1983  
Presided over program sessions, organized symposia sessions and presented research papers on wheat and oat genetics and breeding at CSSA annual meetings  
Chair, American Oat Workers Conference; Editor of the annual Oat Newsletter, 1990-94

#### **AWARDS AND HONORS:**

Nat'l Council of Commercial Plant Breeders; Genetics and Plant Breeding Award, 2010  
Outstanding Graduate Educator Award, Purdue Dept. of Agronomy, 2004, 05, 06, 07, 08  
Certificate of Distinction, Purdue Agricultural Alumni Association, 2005  
Fellow, American Association for the Advancement of Science (AAAS), 2001  
School of Agriculture Team Award, Purdue University, May 2000  
Agronomic Achievement Award-Crops, American Society of Agronomy, 1994  
Fellow, American Society of Agronomy, 1991  
Fellow, Crop Science Society of America, 1990  
Meritorious Service Award; Scientific, Technical and Research Commission of the Organization of African Unity for contributions to Semi-Arid Food Grains Research and Development, West Africa, 1989  
Crops and Soils Merit Award, Indiana Crop Improvement Association, 1988  
Strathmore's Who's Who, 2003-2004 Registry; American Men and Women of Science; Dictionary of International Biography, Cambridge, England;  
Who's Who in Science and Engineering; Who's Who in the Midwest  
Who's Who in Technology Today; Marquis Who's Who in America

#### **PROFESSIONAL ASSOCIATIONS:**

American Association for the Advancement of Science (AAAS)  
American Society of Agronomy (ASA); Crop Science Society of America (CSSA)  
Council of Agriculture, Science and Technology (CAST)  
American Registry of Certified Professionals in Agronomy, Crops and Soils (ARCPACS)  
Alpha Tau Alpha; Gamma Sigma Delta; Sigma Xi; National Oat Improvement Council;  
American Oat Assoc; Natl Wheat Quality Council; National Wheat Improvement Council

#### **ACADEMIC ADVISOR/MENTOR:**

Undergraduate students in plant genetics and plant breeding-100<sup>+</sup>. Graduate students 56 [MS degree-32 (30 completed, 2 current); PhD degree-34 (25 completed, 9 current)].

#### **INSTRUCTION:**

Advanced undergraduate course: Plant Genetics. Two Plant Breeding graduate courses.

**PUBLICATIONS:** (160<sup>+</sup> refereed journal articles; wheat and oat genetics and breeding).

### **Commercial varieties developed/released:**

Soft (pastry) red winter wheat; 37 cultivars since 1986 - grown in Indiana (approximately 30% of wheat acreage), surrounding states and in Midsouth and Eastern regions of the USA. Cultivar INW0316, released in 2003, is the first commercialized wheat variety with the highly effective gene *Bdv3* for resistance to Yellow Dwarf, a globally significant virus disease of wheat. Cultivar INW1131, released in 2011, has highly effective resistance to fusarium head blight, a devastating fungal disease of wheat that also produces the vomitoxin, deoxynivalenol.

Spring oats; 10 cultivars since 1976 – grown in upper Midwest region of USA and southern Canada. Cultivar Excel, released in 2008, is the dominant oat cultivar in Indiana and Ontario, Canada. Cultivar Woodburn is an important cultivar in Iowa, due to its early maturity and high yield.

### **Patents:**

65409.00 US – Yellow Dwarf Virus and Fusarium Head Blight Resistance Introgressed and Combined in Wheat.

Preliminary patent application disclosure: *Lr19Sr25Bdv3Qfhs.pur-7EL*. The combination of four very effective genes combined in coupling for resistance to four globally important wheat diseases – leaf rust, stem rust, yellow dwarf virus, fusarium head blight.

### **Selected recent refereed papers published**

Souza EJ, C Sneller, MJ Guttieri, A Sturbaum, C Griffey, M Sorrells, H Ohm, and D Van Sanford. 2012. Basis for selecting soft wheat for end-use quality. *Crop Sci.* 52:21-31.

Zhang, X, X Shen, Y Hao, J Cai, H Ohm, and L Kong. 2011. A genetic map of *Lophopyrum ponticum* chromosome 7E harboring resistance genes to Fusarium head blight and leaf rust. *Theor Appl Genet* 122:263-270.

Francki MG, E Walker, AC Crawford, S Broughton, H Ohm, I Barclay, RE Wilson, and R McLean. 2009. Comparison of genetic and cytogenetic maps of hexaploid wheat (*Triticum aestivum* L.) using SSR and DArT markers. *MGG* 281:181-191.

Kong L, JM Anderson, and HW Ohm. 2009. Segregation distortion in common wheat of a segment of *Thinopyrum intermedium* chromosome 7E carrying *Bdv3* and development of a *Bdv3* marker. *PBR* 128:591-597.

Saltzmann KD, MP Giovanini, HW Ohm, and CE Williams. 2009. Transcript profiles of two wheat lipid transfer protein-encoding genes are altered during attack by Hessian fly larvae. *Plant Physiology and Biochemistry* 48: 54-61.

Giovanini MP, Saltzmann KD, Puthoff DP, Gonzalo M, Ohm HW, and Williams CE. 2007. A novel wheat gene encoding a putative chitin-binding lectin is associated with resistance against Hessian fly. *Mol Plant Pathology* 8:69-82.

Kong L, Cambron SE, and Ohm HW. 2008. Hessian fly resistance genes *H16* and *H17* are mapped to a resistance gene cluster in the distal region of chromosome 1AS in wheat. *Molecular Breeding* 21:183-194.

Kong L, Ohm HW, and Anderson JM. 2007. Expression analysis of defense-related genes in wheat in response to infection by *Fusarium graminearum*. *Genome* 50:1038-1048.

Kong L, Dong Y, and Ohm H. 2007. Characterization of resistance to deoxynivalenol (DON) accumulation in different wheat lines. P83. Proceedings of the 2007 National Fusarium Head Blight Forum, 2 – 4 Dec, KC, MO.

- Bonafede M, L Kong, G Tranquilli, H Ohm, and J Dubcovsky. 2007. Reduction of a *Triticum monococcum* chromosome segment carrying the softness genes *Pina* and *Pinb* translocated to bread wheat. *Crop Sci* 47:821-828.
- Giovanini MP, KD Saltzmann, DP Puthoff, M Gonzalo, HW Ohm and CE Williams. 2007. A novel wheat gene encoding a putative chitin-binding lectin is associated with resistance against Hessian fly. *Mol Plant Pathology* 8:69-82.
- Ohm H. 2007. Plant Breeding and Genetics Research and Education at Purdue University. Plant Breeding Workshop. 8-9 Feb, Raleigh, NC.
- Perugini L Sneller C, Kolb F, VanSanford D, Griffey C, Ohm H, and Brown-Guedira G. 2007. Haplotype structure and genetic diversity at Fusarium head blight resistance QTLs in soft winter wheat germplasm. P96. Proceedings of the 2007 National Fusarium Head Blight Forum, 2 – 4 Dec, KC, MO.
- Shen X and H Ohm. 2007. Molecular mapping of *Thinopyrum*-derived Fusarium head blight resistance in common wheat. *Mol Breeding* 20:131-140.
- Shen X and Ohm H. 2007. Molecular mapping of a QTL for resistance to Fusarium head blight introgressed from *Thinopyrum ponticum* into wheat. PAG XV Abstracts, P307, p. 178.
- Saltzmann KD, Giovanini MP, Ohm HW, and Williams CE. 2007. Expression of a wheat gene encoding a type-1 lipid transfer protein is suppressed by virulent Hessian fly larval feeding. PAG XV Abstracts, P300, p. 176.
- Soria M, Anderson J, Baenziger P, Berzonsky B, Brown-Guedira G, Campbell K, Carver B, Chao S, Dubcovsky J, Fritz A, Griffey C, Bai G, Haley S, Johnson J, Kianian S, Kidwell K, Mergoum M, Ohm H, Peterson J, Riera Lizarazu O, Rudd J, Talbert L, Sherman J, Sorrells M, Souza E, Zemetra R. 2007. Wheat Coordinated Agricultural Project: Applying Genomic Technologies to Wheat Improvement. Purdue University Genomics Conf, 10-12 Sept.
- Uphaus J, E Walker, M Shankar, H Golzar, R Loughman, M Francki and H Ohm. 2007. QTL identified for resistance to Stagonospora glume blotch in wheat in the USA and Australia. *Crop Sci* 47:1813-1822.
- Zila C and Recker JR. 2007. Haplotyping wheat lines for Fusarium head blight resistance. *In*: p. 2. Purdue University 2007 Undergraduate Research and Poster Symposium Abstracts. Poster Symposium, 4 April.
- Zila C, Recker J, Shen X, Kong L, and Ohm H. 2007. Novel Fusarium head blight resistance in *Triticum aestivum* revealed by haplotyping with DNA markers associated with known resistance QTL. ASA-CSSA-SSSA Annual Meeting, 4-8 Nov, New Orleans, LA.
- Giovanini MP, DP Putoff, JA Nemacheck, O Mittapalli, KD Saltzmann, HW Ohm, RH Shukle, and CE Williams. 2006. Gene-for-gene defense of wheat against the Hessian fly lacks a classical oxidative burst. *MPMI* 19:1023-1033.
- Kong L, JM Anderson, and HW Ohm. 2006. Segregation distortion in bread wheat of *Thinopyrum intermedium* 7E segment carrying *Bdv3*. *Plant Breeding* (submitted).
- Kong L, HW Ohm, and JM Anderson. 2006. Expression analysis of defense-related genes in wheat in response to infection by *Fusarium graminearum*. *Genome* (submitted).
- Shen X, MG Francki, and HW Ohm, 2006. A resistance-like gene identified by EST mapping and its association with a QTL controlling Fusarium head blight infection on wheat chromosome 3BS. *Genome* 49:631-635.

- Shen X and H Ohm. 2006. Fusarium head blight resistance derived from *Lophopyrum elongatum* chromosome 7E and its augmentation with *Fhb1* in wheat. *Plant Breed.* 125:424-429.
- Shen X and H Ohm. 2006. Linkage mapping of *Thinopyrum*-derived Fusarium head blight resistance in common wheat. *Molecular Breeding* (submitted).
- Kong L, JM Anderson, and HW Ohm. 2005. Induction of wheat defense and stress-related genes in response to *Fusarium graminearum*. *Genome* 48:29-40.
- Kong L, H Ohm, S Cambron, and C Williams. 2005. Molecular mapping determines that Hessian fly resistance gene *H9* is located on chromosome 1AS of wheat. *Plant Breed.* 124: 525-531.
- Ohm, HW, JM Anderson, HC Sharma, L Ayala, N Thompson, and JJ Uphaus. 2005. Registration of yellow dwarf viruses resistant wheat germplasm line P961341. *Crop Sci.* 45:805-806.
- Gilsinger, J, L Kong, X Shen, and H Ohm. 2005. DNA markers associated with low Fusarium head blight incidence and narrow flower opening in wheat. *Theor. Appl. Genet.* 110:1218-1225.
- Kong, L, H Ohm, S Cambron, and CE Williams. 2005. Molecular mapping determines that Hessian fly resistance gene *H9* is located on chromosome 1A of wheat. *Plant Breeding*: 124:525-531.
- Ohm, HW, JM Anderson, HC Sharma, L Ayala, N Thompson, and JJ Uphaus. 2005. Registration of yellow dwarf viruses resistant wheat germplasm line P961341. *Crop Sci.* 45:805-806.
- Ohm, HW, FL Patterson, RH Ratcliffe, SE Cambron, and CE Williams. 2004. Registration of Hessian fly resistant wheat germplasm line P921696. *Crop Sci.* 44:2272-2273.
- Boukar, O, L Kong, BB Singh, L Murdock, and HW Ohm. 2004. AFLP and AFLP-derived SCAR markers associated with *Striga gesnerioides* resistance in cowpea. *Crop Sci.* 44: 1259-1264.
- Shen, X, L Kong, and H Ohm. 2004. Fusarium head blight resistance in hexaploid wheat (*Triticum aestivum*)-*Lophopyrum* genetic lines and tagging of the alien chromatin by PCR markers. *Theor. Appl. Genet.* 108:808-813.
- Bourdoncle W and HW Ohm. 2003. Quantitative trait loci for resistance to Fusarium head blight in recombinant inbred wheat lines from the cross Huapei 57-2 / Patterson. *Euphytica* 131:131-136.
- Shen, X, M Ittu and HW Ohm. 2003. Quantitative Trait Loci Conditioning Resistance to Fusarium Head Blight in Wheat Line F201R. *Crop Sci.* 43:850-857.
- Shen, X, M Zhou, W Lu and H Ohm. 2003. Detection of Fusarium head blight resistance QTL in a wheat population using bulk segregant analysis. *Theor. Appl. Genet.* 106:1041-1047.