John P. Fellers, Ph.D.

4008 Throckmorton Hall
Department of Plant Pathology
Manhattan, KS 66506
785.532.2367
john.fellers@ars.usda.gov

EDUCATION

University of Kentucky, Doctor of Philosophy; Crop Science Major, Plant Physiology Minor; September,1996.

Oklahoma State University, Master of Science; Agronomy Major; May, 1992.

Oklahoma State University, Bachelor of Science; Agronomy Major; Science Option; December, 1989.

EXPERIENCE

1/99 - present	**Research Molecular Biologist,** USDA-ARS Hard Winter Wheat Genetics Unit, Manhattan, KS. Rust and Wheat Genomics. Co-PI of the Genome sequencing project of *Puccinia triticina*. Responsible for identification of pathogen avirulence factors associated with their respective wheat resistance genes. Responsible for mapping and cloning genes in wheat for disease resistance to leaf rust. Transgenic approaches for resistance to viruses.
9/09 – present	**Adjunct Associate Professor,** Department of Plant Pathology, Kansas State University. Manhattan, KS
10/99 – 8/09	**Adjunct Assistant Professor,** Department of Plant Pathology, Kansas State University. Manhattan, KS
9/01-present	**Graduate Faculty of Genetics,** Genetics program, Kansas State University, Manhattan, KS.
10/96-12/98	**NSF/USDA/DOE Postdoctoral Research Fellow**, Department of Botany, North Carolina State University. Research on avirulence factor in *Potato virus Y* to resistance gene *Rk* in tobacco.
8/92-9/96	**Graduate Research Assistant,** Plant Cell Biology Program, Department of Agronomy, University of Kentucky. Dissertation title: "Potyvirus NIa-proteinase derived resistance: Evaluation of resistance and NIa interaction with the Potyvirus polymerase" Drs. Glenn B. Collins and Arthur G. Hunt, Co-Major Advisors.
1/90 - 5/92	**Graduate Research Assistant**, Wheat Cell Biology Program, Department of Agronomy, Oklahoma State University. Thesis title: "Establishment and maintenance of embryogenic suspension cultures of wheat (*Triticum aestivum* L.)." Dr. Arron C. Guenzi , Major Advisor.
1/91 - 5/91	**Graduate Teaching Assistant,** Department of Agronomy, Oklahoma State University. Dr. Kevin J. Donnelly, Supervisor.
1/87 - 5/87	**Undergraduate Research Assistant,** Wheat Cell Biology 5/88 - 12/89 Program, Department of Agronomy, Oklahoma State University. Dr. Arron C. Guenzi, Supervisor.

PROFESSIONAL AWARDS

USDA-ARS Certificate of Merit. November, 1999. March, 2003, February, 2005. February, 2007, 2008, 2009

Graduate Research Excellence Award, Oklahoma State University, May, 1992.

Doyle Peaslee Outstanding Graduate Student Award. University of Kentucky, February, 1996.

PUBLISHED MANUSCRIPTS (* Supervised graduate students/post-docs)

Fellers, JP, HN Trick, L Cruz, and J Rupp. Method for producing plant germplasm resistant to RNA viruses via RNAi. Patent Application Filed September 28, 2013

Rezac Harrison, N, AK Fritz, JI Glasscock, S Ahmed, DN Messina, and **JP Fellers**. 2015. Using RNA-seq and *in silico* subtraction to identify resistance gene analog markers for *Lr16* in wheat. The Plant Genome. 8(2):1-9.

Bruce M, Neugebauer KA, Joly DL, Migeon P, Cuomo CA, Wang S, Akhunov E, Bakkeren G, Kolmer JA and **Fellers JP** (2014) Using transcription of six Puccinia triticina races to identify the effective secretome during infection of wheat. Front. Plant Sci. **4**:520. doi: 10.3389/fpls.2013.00520

Shoup Rupp, JL*, ZG Simon*, B Gillett-Walker*, and **JP Fellers**. 2014. Resistance to *Wheat streak mosaic virus* identified in synthetic wheat lines. Euphytica 198:223-229.

Cruz, L*, JL Shoup Rupp*, H Trick, and **JP Fellers**. 2013. Stable resistance to Wheat streak mosaic virus in wheat mediated by RNAi. In Vitro Cell Dev Biol.-Plant . DOI 10.1007/s11627-014-9634-0

Fellers, JP, BM Soltani, M Bruce*, R Linning, CA Cuomo, LJ Szabo, and G Bakkeren. 2013. Conserved loci of leaf and stem rust fungi of wheat share synteny interrupted by lineage-specific influx of repeat elements. BMC Genomics. 14:60-72.

Bakkeren, G, X Song, V Panwar, R Linning, X Wang, C Rampitcsh, B McCallum, **J Fellers**, and B Saville. 2012. Functional genomic approaches in cereal rusts. Can J Plant Pathol, 34:3-12

Alexander, LM, F. Kirigwi, F, AK Fritz and **JP Fellers**. 2011. Mapping and QTL analysis of drought tolerance in a spring wheat population using AFLP and DArT markers. Crop Sci. 52:253-261.

Fuentes-Bueno, I., Price, J., Rush, C.M., Siefers, D.L., and **Fellers, J.P**. 2011. *Triticum mosaic virus* isolates in the Southern Great Plains. Plant Dis.95:1516-1519.

Xu, J., Linning, R., **Fellers, J.**, Dickinson, M., Zhu, W., Antonov, I., Borodovsky, M., Eilam, T., Anikster, Y., McCallum, B., Banks, T., Munro, S., Mayo, M., Wynhoven, B., Ali, J., Moore, R., Joly, D.L., Donaldson, M.E., Saville, B. and Bakkeren, G. 2011. Gene discovery in EST sequences from the wheat leaf rust fungus *Puccinia triticina* sexual spores, asexual spores and haustoria, compared to other rust and corn smut fungi. BMC Genomics 12:161 doi:10.1186/1471-2164-12-161.

Seifers, D.L., Martin, T.J., and **Fellers, J.P.** 2011. Occurrence and yield effects of wheat

infected with *Triticum mosaic virus* in Kansas. Plant Dis. 94: 95:183-188

Seifers, DL, TJ Martin, and **JP Fellers**. 2010. An experimental host range for *Triticum mosaic virus*. Plant Dis. 94:1125-1131

Faris, JD, Z Zhang, H Lu, S Lu, L Reddy, S Cloutier, **JP Fellers**, SW Meinhardt, JB Rasmussen, SS. Xu, RP Oliver, KJ Simons, and TL. Friesen. 2010. A unique wheat disease resistance-like gene governs effector-triggered susceptibility to necrotrophic pathogens. PNAS 107:13544-13549.

Price, JA, J Smith, A Simmons, **J Fellers**, and CM Rush. 2010. Multiplex real-time RT-PCR for detection of *Wheat streak mosaic virus* and *Triticum mosaic virus*. J of Virol Meth. 165:198-201

Fellers, JP, DL Seifers, M Ryba-White, TJ Martin. 2009. The complete sequence of *Triticum* mosaic virus, a new wheat-infecting virus of the High Plains. Arch of Virology. 154:1511-1515.

Aggarwal, R., TR Benatti, N Gill, C Zhao, MS Chen, **JP Fellers**, BJ Schemerhorn, and JJ Stewart. 2009. A BAC-based physical map of the Hessian fly genome. BMC Genomics 10:293-309

*Huang, L, *S Brooks, W Li, **J Fellers**, JC Nelson, and B Gill. 2009 Evolution of new disease specificity at a simple resistance locus in a crop-weed complex: Reconstitution of the *Lr21* gene in wheat. Genetics. 182:595-602.

Faris, JD, HJ Lu, Z Zhang, L Reddy, ZH Liu, SS Xu, CG Chu, N Abeysekara, **JP Fellers,** S Cloutier, B Keller, SR Scofield, and TL Friesen. 2009. Genetics of host-pathogen interactions in the wheat- *Stagonospora nodorum* pathosystem. Proceedings of XV International Wheat Genetics Symposium. Australia.

Seifers, DL, TJ Martin, TL Harvey, **JP Fellers,** and JP Michaud. 2009. Identification of the wheat curl mite as the vector of *Triticum* mosaic virus. Plant Dis. 93:25-29

Fellers, JP. 2008. Genome filtering using methylation-sensitive restriction enzymes with six base pair recognition sites. Plant Genome 1:146-152.

Faris, JD, Z Zengcui, **JP Fellers**, and BS Gill. 2008. Micro-colinearity between rice, *Brachypodium*, and *Triticum monococcum* at the wheat domestication locus *Q*. Functional Integrative Genomics. 8:149-164.

Seifers, DL, Martin, TJ, Harvey, TL, **Fellers, J**, Stack, J, Ryba-White, M, Haber, S, Krokhin, O, Spicer, V, Lovat, N, Yamchuk, A, and Standing, KG. 2008. *Triticum* mosaic virus: A new virus isolated from wheat in Kansas. Plant Dis. 92:808-817.

*Barrett-Bremencamp, B, JD Faris, and **JP Fellers**. 2008. Molecular mapping of the leaf rust resistance gene Lr17a in wheat. Crop Science. 48:1124–1128

Hulbert, SH, J Bai, **JP Fellers**, MG Pacheco, and RL Bowden. 2007. Gene expression patterns in near isogenic lines for wheat rust resistance gene *Lr34/Yr18*. Phytopathology. 97:1083-1093.

*Hill-Ambroz, K, *CA Webb, AR Matthews,' W Li, BS Gill and **JP Fellers**. 2006. Expression analysis and physical mapping of a cDNA library of Fusarium head blight infected wheat spikes. The Plant Genome, Suppl. to Crop Sci 46:S15-S26

*Webb, CA and **JP Fellers**. 2006. Cereal rust fungi genomics and the pursuit of virulence and avirulence factors. FEMS Microbiol Lett 264:1–7.

*Webb, CA, LJ Szabo, G Bakkeren, R Staples, C Garry, M Eversmeyer and **JP Fellers**. 2006. Using Biolistics with *Puccinia triticina* as a method of Transient Expression and Insertional Mutagenesis. Functional and Integrative Genomics. 6:250-260

*Brooks, SA, L Huang, *MN Herbel, JD Faris, BS Gill, G Brown-Guedira and **JP Fellers**. 2006. Structural variation and evolution of a defense-gene cluster in natural populations of *Aegilops tauschii*. Theoretical Applied Genetics. 112:618-626.

Lu, H, **JP Fellers**, T Friesen, SW Meinhardt, and JD Faris. 2006. Genomic analysis and marker development for the *Tsn1* locus in wheat using bin-mapped ESTs and flanking BAC contigs. Theoretical Applied Genetics. 112:1132-1142.

Maddur, AA, X Liu, YC Zhu, **JP Fellers**, B Oppert, Y Park, J Bai, GE Wilde, and MS Chen. 2006. Cloning and characterization of protease inhibitor-like cDNAs from the Hessian Fly *Mayetiola destructor* (Say). Insect Molecular Biology. 15:485-496.

Chen, M, **JP Fellers**, YC Zhu, JJ Stuart, S Hulbert, M. El-Boussini, and X Liu. 2006. A super-family of genes coding for secreted salivary gland proteins from the Hessian fly *Mayetiola destructor* (Say). Journal of Insect Science. 6:1-13.

Liu, X, **JP Fellers**, YC Zhu, NS Mutti, M El-Bouhssini, MS Chen. 2006 Cloning and characterization of cDNAs encoding carboxypeptidase-like proteins from the gut of Hessian fly larvae [*Mayetiola destructor* (Say)]. Insect Biochemistry and Molecular Biology. 36:665-673.

Simons KJ, **Fellers JP**, Trick HN, Zhang Z, Tai YS, Gill BS, Faris JD. 2006. Molecular characterization of the major wheat domestication gene *Q*. Genetics. 172:547-555.

Lamoureux, D, DG Peterson, W Li, **JP Fellers**, and BS Gill. 2005. The efficacy of Cot-based gene enrichment in wheat (*Triticum aestivum* L.) Genome. 48:1120-1126.

Li, W, P Zhang, **JP Fellers**, B Friebe and BS Gill. 2004. Sequence composition, organization, and evolution of the core Triticeae genome. Plant Journal. 40:500-511.

Zhang, P, Li, W, **JP Fellers**, B Friebe and BS Gill. 2004. BAC-FISH in wheat identifies chromosome landmarks consisting of different types of transposable elements. Chromosoma. 112:288-299.

Liu, XM, **Fellers, JP**, Wilde, GE, Stuart, JJ and Chen, MS. 2004. Characterization of two genes expressed in the salivary glands of the Hessian fly [*Mayetiola destructor* (Say)]. Insect Biochemistry and Molecular Biology. 34(3):229-237.

Chen, MS, **Fellers, JP**, Stuart, JJ, Reese, JC, Liu, XM. 2004. A group of related cDNAs encoding secreted proteins from Hessian fly [*Mayetioloa destructor* (Say)] salivary glands. Insect Molecular Biology. 13(1):101-108.

Guenzi, AC, KM Scheets, and **JP Fellers.** 2004. A non-morphogenetic wheat cell line for cellular and molecular biology research. Plant Cell Tissue and Organ Culture. 78:23-28.

Huang, L, *SA Brooks, W Li, **JP Fellers**, HN Trick, and BS Gill. 2003. Map-based cloning of leaf rust resistance gene *Lr21* from the large and polyploid genome of bread wheat. Genetics. 164:655-664.

Faris, JD, **JP Fellers**, SA Brooks, and BS Gill. 2003. A bacterial artificial chromosome contig spanning the major domestication locus *Q* in wheat and identification of a candidate gene. Genetics. 164:311-321.

*Maleki, L, JD Faris, RL Bowden, BS Gill, and **JP Fellers**. 2003. Physical and genetic mapping of wheat kinase analogs and NBS-LRR resistance gene analogs. Crop Science. 43:660-670

Venkatappa, KT, **JP Fellers**, and J. Zhou. 2003. Isolation and characterization of *in planta* induced genes of *Puccinia triticina*. Molecular Plant Pathology. 4(1):51-56

*Hill-Ambroz, KL, GL Brown-Guedira, and **JP Fellers**. 2002. Modified rapid DNA extraction protocol for high throughput microsatellite analysis in wheat. Crop Science. 42:2088-2091.

*Brooks, SA, L Huang, BS Gill, and **JP Fellers**. 2002. Analysis of 106 kb of contiguous DNA sequence from the D genome of wheat reveals high gene density and a complex arrangement of genes related to disease resistance. Genome. 45:963-972

Fellers, JP, D Tremblay, M. Handest, and SA Lommel. 2002. The Potato virus Y $M^{S}N^{R}$ NIb-replicase is the elicitor of a veinal necrosis-hypersensitive response in root knot nematode resistant tobacco. Molecular Plant Pathology. 3(3):145-152.

Brown, S, **J Fellers**, T Shippy, E Richardson, M Maxwell, J Stuart, and R Denell. 2002. Sequence analysis of the *Tribolium* HOMC: the region corresponding to the *Drosophila* ANTC. Genetics. 160:1067-1074.

Boyko, E, R Kalendar, V Korzun, **J Fellers**, A Korol, AH Schulman, and BS Gill. 2002. A high-density cytogentic map of the *Aegilops tauschii* genome incorporating retrotransposons and defense related genes: Insights into cereal chromosome structure and function. Plant Molecular Biology. 48(5/6): 767-790.

Brown, S, **J Fellers**, T Shippy, R Denell, M Stauber, and U Schmidt-Ott. 2001. A strategy for mapping *bicoid* on the phylogenetic tree. Current Biology. 11(20):R43-44.

Gill, BS, WL Li, A Anand, **J Fellers**, H Trick, S Muthukrishnan, DJ Liu and PD Chen. 2000. Analysis of genes induced in wheat spikes upon infection with *Fusarium graminearum* and their manipulation to improve wheat plant resistance to *Fusarium* head scab disease. Proceedings of the International Symposium on Wheat Improvement for Scab Resistance. p 139-139.

Fellers, JP, GB Collins, and AG Hunt. 1998. The NIa-proteinase of different plant potyviruses provide specific resistance to viral infection. Crop Science. 38:1309-1319.

Fellers, JP, J Wang, Y Hong, GB Collins, and AG Hunt. 1998. In vitro interactions between a potyvirus-encoded, genome-linked protein and RNA-dependent RNA polymerase. Journal of General Virology. 79:2043-2049.

Fellers, JP, AC Guenzi, and DR Porter. 1997. Proteins associated with somatic embryogenesis of wheat. Journal of Plant Physiology. 151:201-208

Torisky, R, **JP Fellers**, and G Collins. 1996. A focusing method for bombardment with the DuPont/BioRad PDS1000 microprojectile system. Plant Molecular Biology Reports. 14:124-133

Fellers, JP, AC Guenzi, and CM Talliaferro. 1995. Factors affecting the establishment and maintenance of embryogenic callus and suspension cultures of wheat (*Triticum aestivum* L.). Plant Cell Reports. 15 (3-4):232-237.

OTHER PROFESSIONAL MEETINGS AND TRAINING

- High-throughput BAC Fingerprinting, UC Davis, Davis, CA, July 2004.
- Keynote Speaker, Oklahoma Governor's Conference on Agriculture and Economic Growth, April 2004.
- The role of the potyviral NIa-proteinase in viral replication. Gordon Research Conference. Viruses and Cells. Tilton, NH. June 11-16, 1995.
- Fourth Gatlinburg Symposium, Plant Genome Analysis. Knoxville, TN. June 9-12, 1993.

PROFESSIONAL SOCIETIES

- American Phytopathological Society
- International Society for Molecular Plant-Microbe Interactions
- American Association for the Advancement of Science
- American Society of Agronomy (ASA)
- Crop Science Society of America

PROFESSIONAL ACTIVITIES

- National Wheat Improvement Committee, National Wheat Genomic Sub-Committee, USDA Rep. 2011-2013
- Crop Science Society C-7 subdivision Chair-elect, 2011, Chair 2012, Past Chair 2013.
- DOE-USDA Biomass Research and Development Initiative grant panel member. July 2011, 2012, Phase 1 and 2.
- DOE-USDA Biomass Research and Development Initiative grant panel member. July 2009.
- Candidate for National Crop Science Society C-7 subdivision Board representative 2009.
- USDA-CREES Small Business Innovative Research Phase II Grant Panel for Plant Production and Protection, June 2009.
- National Wheat Genomics Conference Organizing Committee, Organized Genomics and Quality session. December 4-6. 2009
- Panel Manager, USDA-CREES SBIR Grant Panel for Plant Production and Protection. 2006, 2007

- American Orchid Society Research Committee (2007-2011)
- USDA-ARS Research Position Evaluation Committee 2005, 2006, 2007(2), 2008, 2009, 2010, 2011
- USDA-CREES Small Business Innovative Research Grant Panel for Plant Production and Protection. January 2003, 2004, and 2005.
- International Triticae Mapping Initiative (ITMI) Workshop Planning Committee. 2000.
- UDSA-CGAHR Computer Committee (2002-present)
- USDA-GMPRC Disaster Planning Committee (2000)
- UDSA-GMPRC Seminar Committee (1999)
- Univ of Kentucky Crop Science Seminar Committee (1993-95)
- ASA-Student Activities Subdivision (SAS) National Vice-President
- ASA-SAS Handbook Committee Chair
- OSU Graduate Student Agronomy Club
- Graduate Student Advisor for the Agronomy Club
- OSU Agronomy Club
- Ag Ambassadors

SCHOLARSHIPS AND OTHER AWARDS

- Lew Wentz Service Scholarship
- Alpha Lambda Delta Honor Society
- Long's John Deere Scholarship
- Oklahoma Feed and Grain Scholarship
- Buck and Irene Clemens Memorial Scholarship
- H.F. "Pat" Murphy Memorial Scholarship
- College of Agriculture Freshman Scholarship
- Dean's Honor Roll (Fall 85,86, and 88. Spring 1989)
- Outstanding Young Men of America, (1988)
- American Farmer Degree (FFA) 1987

OTHER ACTIVITIES

- Private Pilot, AOPA Member
- Member, Harley Owners Group, Junction City, KS Chapter
- Outreach Committee and Soundboard operator, UFMC, Manhattan, KS
  Sound engineer for Red State Blues Band