

Joseph M. Anderson

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EDUCATION

B.S.	Biology	St. Bonaventure University	1980
M.S.	Microbiology	Iowa State University	1983
Ph.D.	Genetics	Iowa State University	1987

RESEARCH FIELDS

My research has spanned several areas of plant research including transposable elements in maize, starch biosynthesis in rice and potato, and genetic engineering of virus resistance. Currently my research uses genetic, genomic, molecular, cellular and biochemical approaches to elucidate the basis of pathogen resistance in wheat and oat for developing disease resistant cultivars. Specific research areas are: 1) integrating virus resistance genes from related species into wheat and oat, 2) determining the mechanism of resistance to virus and fungal pathogens, 3) develop genome-wide molecular markers for integrating disease resistance traits into elite germplasm and varieties and 4) investigate the epidemiology of viral diseases in small grain production areas in the United States.

PROFESSIONAL POSITIONS

Postdoctoral Research Associate, Institute of Biological Chemistry, Washington State University. 1987-1990

Postdoctoral Research Associate, Department of Plant Pathology, Cornell University. 1990-1992

Research Geneticist, USDA-ARS, Cereal Crop Improvement and Adjunct Assistant Professor, Department of Plant & Soil Science, Montana State University, Bozeman MT. 1992-1993

Adjunct Assistant Professor in Departments of Agronomy and Botany Plant Pathology, Purdue University. 1994-2003

Adjunct Associate Professor in Departments of Agronomy and Botany Plant Pathology, Purdue University. 2003-2009

Adjunct Professor in Departments of Agronomy and Botany Plant Pathology, Purdue University. 2009-2010

Research Molecular Biologist, USDA-ARS, Crop Production & Pest Control Research Unit, W. Lafayette, IN. 1994-2000

Lead Scientist and Research Molecular Biologist, USDA-ARS, Crop Production & Pest Control

Research Unit, W. Lafayette, IN. 2000-2010
Department Head and Professor, Department of Agronomy, Purdue University, 2010-present

PROFESSIONAL ACTIVITIES

- Committee on Institutional Cooperation: Department Executive Officers Seminar , Chicago, IL. 2011
- USDA Leadership Development Program: 2-week course “Transitioning from Manager to Leader”. Aurora, CO. 2008
- North American *Avena* SNP Group: Developing a high density 3,192 SNP marker platform for association mapping and marker-assisted selection in oat. 2008-present
- International Oat DArT consortium: Developed a high-density DNA-marker platform (DArT) for genome-wide mapping and marker-assisted-selection in oat. 2006-2008
- GrainGenes Liaison Committee. Member 2003-2005, Chair, 2006-present
- National Wheat Improvement Committee. 2002-present
- International Barley Yellow Dwarf Virus Symposium Organizing Cmte. 2002-present
- USDA-ARS Plant Diseases 303 National Program Strategic Plan Workshop panel member and presenter from which 5-year actions plans were prepared. 2005
- Wheat Genomics Consortium: International collaboration that developed and produced the 20,000 gene wheat microarray and the 60,000 gene Affymetrix microarray as the primary gene expression tools for wheat genomics. 2005
- Manuscript review: Averaging 20 requests per year for at least 11 journals including: *BMC Genomics*, *Crop Science*, *Genome*, *Phytopathology*, *Plant Disease*, *Plant Molecular Biology*, *Plant Health Network*, *Plant Breeding*, *Plant Physiology*, *The Plant Journal*, *Theoretical & Applied Gen.*, *J. Virol. Methods*, and *Trends in Microbiology*.
- USDA-CREES NRI Plant Genome and SBIR Programs reviewer. 2000-2006
- Application of Plant Gene Discovery-Host-Pathogen Interaction Forum participant invited by USDA Undersecretary for REE and Co-chair of the NSF Plant Genome Initiative to help identify and provide direction on important areas of research for the USDA-NRI plant-microbe interaction programs. August 2003
- NSF Plant Genome Program reviewer. 2004-2005 and 2009
- Genomics of Pest Resistance in Small Grain Cereals. Proposed, developed and led the effort to develop a national program at West Lafayette resulting in the addition of permanent ARS funds (\$600,000/yr) and two scientists. 1998-2002
- Plant & Animal Genome IX. Co-coordinator of Plant Interactions with Pest and Pathogens Workshop, San Diego, CA. 2001
- USDA-ARS Plant Diseases 303 National Program Strategic Plan Workshop panel member. 1999
- USA-Israel BARD Field and Garden Crops Program reviewer. 1999
- USDA-NRICGP Biologically Based Pest Management Grant Program reviewer. 1998
- USDA-ARS Grain Crop Review: Transgenic Plant Strategies in the Control of Virus Disease panel member. April 1996

- Interdisciplinary Purdue Plant Biology Program Executive Committee. 1995-2002
- USDA-ARS Barley Yellow Dwarf Virus Workshop. Determined current and future research needs, priorities and directions. May 1995
 - Western Regional Spring Barley Nursery and Western Dryland Spring Barley Nursery Coordinator. 1992-1993

PROFESSIONAL SOCIETIES

Membership

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| • American Society of Plant Biologists | 1988-present |
| • American Phytopathological Society | 1995-present |
| • American Society for the Advancement of Science | 1995-present |
| • Sigma Xi | 1997-present |
| • Eastern Wheat Workers Association | 1994-present |
| • American Oat Workers | 1994-present |

Offices and Committee Assignments

- American Phytopathological Society Virology Committee. 2000-2003
- Eastern Wheat Workers Association, Vice-Chair 1999-2001, Chair 2002-2005
- Eastern Wheat Workers Association, Meeting Co-organizer, St. Louis, MO. May 2002
- American Phytopathological Society Annual Meeting. Organized and chaired “Virus Genetics: Leading to New Insights in Resistance and Susceptibility” Symposium. July 2005

AWARDS AND HONORS

Elected to New York Academy of Sciences. 1989

USDA-ARS Certificate of Merit: Contributions as part of a team working to successfully discover and develop low phytic acid mutants in barley and corn. 1995

Gamma Sigma Delta, Agriculture Honor Society. 1997

Team Award, Purdue University, School of Agriculture. Small Grains Team: For excellence in interdisciplinary research and education. 2000

USDA-ARS Certificate of Merit: For superb performance of duties as Research Molecular Biologist and leadership in forging the direction of research in viral disease of small grains. 2002

USDA-ARS Certificate of Merit: For superior leadership of the wheat genomics group and for research contributions that advanced the understanding of virus resistance in wheat. 2004

USDA-ARS Certificate of Merit: For outstanding leadership of the ARS wheat genomics team and contributions that advanced the knowledge of virus disease resistance. 2005

USDA-ARS Certificate of Merit: For superior leadership in planning and execution of research

on diseases of small grains. 2006

USDA-ARS Certificate of Merit: Recognition of outstanding leadership advancing virus disease resistance in small grains. 2007

USDA-ARS Certificate of Merit: Recognition of superior leadership in small grain virus research. 2009

INVITED PRESENTATIONS

I have received 34 invitations to present my research at regional, national and international conferences in the United States, South Korea, Mexico, Morocco, Canada, China, and Finland addressing starch metabolism, bioengineered virus resistance, YDV resistance, utilization of wheatgrass as a trait donor, and virus epidemiology. The following are representative of this cross disciplinary recognition.

National invitations

- “Epidemiological studies on the presence of viruses in winter wheat in Arkansas, Georgia, Indiana, North Carolina and Wisconsin”, Joint Eastern and Southern Wheat Workers Conference. Baltimore, MD. 2009
- “Multi-plex PCR detection of wheat viruses: detection and epidemiology”, Great Plains Diagnostic Network. 2008
- “New insights into wheat virus detection: epidemiology and resistance”, Department of Crop Science, University of Illinois. Urbana, IL. 2008
- “Multiplexed PCR for detection of common wheat viruses”, Joint NCERA-184-Management of Small Grain Diseases Research Committee and Western Wheat Workers meeting. Davis, CA. 2008
- “Overview of oat microsatellite development”, Plant and Animal Genome XVI conference. San Diego, CA. 2008
- “Resistance to the Polerovirus *Cereal Yellow Dwarf Virus* in wheat: a two-component system”, Plant and Animal Genome XVI conference. San Diego, CA. 2008
- “Development of a rapid multi-plex PCR method for simultaneously detecting 8 different wheat viruses”, Joint Eastern and Southern Wheat Workers Conference. Tipton, GA. 2007
- “*Barley yellow dwarf virus* in oats: a field and laboratory view”, American Oat Workers Conference. Fargo, ND. 2006
- “*Bdv3* resistance to *Cereal yellow dwarf virus* is a two component system: restriction of virus movement and aphid feeding”, American Phytopathological Society Annual Meeting. San Antonio, TX. 2005
- “Global *Barley and Cereal yellow dwarf virus* genome sequencing project: A multi-institution, state and federal partnership”, USDA-ARS Plant Diseases 303 National Program Strategic Plan Workshop. Orlando, FL. 2005
- “Analysis of the wheat defense-response transcriptome using an unbiased, open-architecture gene-identification system combined with microarrays”, International Triticeae Mapping Initiative Workshop. Minneapolis, MN. 2004

- “*Barley and cereal yellow dwarf virus: detection and resistance*”, Inaugural U.S. National Wheat Workers Workshop. Kansas City, MO. 2004
- “Transcriptional profiling of wheat after treatment with *Septoria tritici* leaf blotch, head scab, barley and cereal yellow dwarf virus, and Hessian fly”, Plant and Animal Genome XI conference. San Diego, CA. 2003

International invitations

- “Epidemiological analysis of wheat viruses in the Eastern US”, World Congress of Virus and Infections-2010, Busan, South Korea. July 2010
- “Simultaneous diagnosis of eight viruses by a single tube multiplex PCR-based detection method”, BIT 1st Annual World Summit of Antivirals: Combating Severe Viral Infections Conference. Kunming, China. 2008 (Declined due to prior commitments)
- “Virus detection and field management” 8th International Oat Conference: Healthy Foods & Healthy Lives. Minneapolis, MN. 2008
- “Development of a real time PCR technique for virus detection”, New Techniques for Diagnostic Testing for Harmful Organisms in Plants Symposium. Kenitra, Morocco. 2006
- “Analysis of resistance and susceptibility to barley and cereal yellow dwarf virus”, 7th International Oat Conference. Helsinki, Finland. 2004
- “Quantitative analysis of wheat defense-gene expression in response to insect, fungal, and viral pests”, Proceedings of the Tenth International Wheat Genetics Symposium, Paestum, Italy. 2003 (Declined due to prior commitments, presented by Dr. Goodwin)
- “Real-time RT-PCR quantification of yellow dwarf virus accumulation and defense gene expression”, International Symposium, Barley Yellow Dwarf Disease: Recent Advances and Future Strategies. CIMMYT, El Batan, Mexico. 2002
- “Combining liquid chromatography with mass spectrometry to detect differential expression of proteins in plant-pathogen interactions”, International Tritici Mapping Initiative Workshop. Winnipeg, Canada. 2002
- “Elucidation of the mechanism of *Thinopyrum intermedium*-derived resistance to BYDV and breeding for BYDV resistance”, Plenary lecture, International Wheat Genetics and Breeding Symposium. Beijing, China. 2001

FUNDING AND GRANT ACTIVITY

- 2009-2012 AFRI Program 91810, Plant Breeding and Education
 PI: Herb Ohm, CoPIs (13): J. M. Anderson, R. Doerge, G. Ejeta, et al.
 Project Title: Partnership for Research and Education in Plant Breeding and Genetics at Purdue University.
- 2009-2012 AFRI Program 91610, Plant Genome, Genetics, and Breeding.
 PIs: Eric Jackson, Don Obert, CoPIs (16): N. Tinker, J. M. Anderson et al
 Project Title: Oat SNP Development and Identification of Loci Affecting Key Traits in North American Oat Germplasm Using Association Genetics.

- 2007-2012 USDA-ARS
Annual Internal Base-Funding Range
Lead Scientist: Joseph M Anderson, CoPI: Steve Scofield
Project Title: Genetic and biochemical mechanisms of resistance to barley and cereal yellow dwarf viruses and fungi.
- 2007-2012 USDA-ARS & U. Illinois, Specific Cooperative Agreement.
CoPIs: Joseph M. Anderson and Fred Kolb
Project Title: Enhancement of oat germplasm for resistance/tolerance to barley and cereal yellow dwarf virus utilizing marker-assisted selection breeding.
- 2007-2012 USDA-ARS & Purdue Univ., Specific Cooperative Agreement
CoPIs: Joseph M. Anderson, and Herb Ohm
Project Title: Utilization of genetics, breeding, and DNA technologies to develop wheat that is resistant to multiple diseases and pests.
- 2008-2009 US Wheat and Barley Scab Initiative
CoPIs: Steve Scofield, Joseph M. Anderson
Project Title: Functional dissection of the pathways contributing to FHB resistance by virus-induced gene silencing.
- 2007-2008 US Wheat and Barley Scab Initiative
CoPIs: Steve Scofield, Joseph M. Anderson, L. Kong, D Garvin
Project Title: Rapid functional identification of genes contributing to FHB resistance.
- 2006-2007 US Wheat and Barley Scab Initiative
CoPIs: Steve Scofield, Joseph M. Anderson
Project Title: Development of a virus-induced gene silencing system for the identification of genes.
- 2004-2006 USDA-NRI - Microbial Genome Sequencing
PI: Allen Miller, CoPIs: Joseph M. Anderson, Stewart Gray
Project Title: Global BYDV/CYDV Sequencing
- 2002-2007 USDA-ARS, Annual Internal Base-Funding Range
Lead Scientist: Joseph M Anderson, CoPI: Steve Scofield
Project Title: Genetic and biochemical mechanisms of resistance to barley and cereal yellow dwarf viruses and fungi.
- 2000-2001 Purdue University Showalter Trust
PI: Joseph M. Anderson, CoPIs: Fred Regnier, Herb Ohm, Christie Williams, Steve Goodwin
Project Title: New Analytical Tools for Studying Protein Biodynamics in Plants.
- 2001-2003 USDA-ARS Administrator Postdoctoral Program.
PI: Joseph M. Anderson
Project Title: A novel approach to achieving virus resistance in plants by repressing virus gene expression.
- 1997-2002 USDA-ARS, Annual Internal Base-Funding Range
Lead Scientist: Joseph M Anderson,

Project Title: Genetic and biochemical mechanisms of resistance to barley and cereal yellow dwarf viruses.

- 1997-1998 Purdue, Agriculture Research. Program Research Assistantship
PI: Joseph M. Anderson
Project Title: Isolation and Characterization of *Thinopyrum intermedium*-Specific Repetitive Elements as Molecular Tools for Mapping Barley Yellow Dwarf Virus Resistance in Wheat.
- 1992-1993 Montana Biotechnology Center of Excellence
Principal Investigator: Joseph M. Anderson
Project Title: Replicase-mediated Resistance to Barley Yellow Dwarf Virus in Transgenic Barley Plants.
- 1994-1999 NSF-Epscore.
PI Gary Strobel, CoPI: JM Anderson - Chair of Biochemistry and Molecular Biology of Plant Metabolic and Developmental Pathways section and one of 10 Co-PIs.
Project Title: Systemic Improvement of an Integrated Center in Excellence in Plant Biosciences and Biotechnology at Montana State University. This grant started just before I transferred to USDA-ARS at Purdue University.

CURRENT RESEARCH INTERESTS AND RESEARCH ACCOMPLISHMENTS

As a research molecular biologist and Lead Scientist in the Crop Production and Pest Control Research Unit for the USDA-ARS, my research is conducted within a Current Research Information System (CRIS) structure entitled “Genetic and Biochemical Mechanisms of Resistance to Barley and Cereal Yellow Dwarf Viruses and Fungi.” Barley and Cereal Yellow Dwarf Viruses (YDV) are called the “the yellow plague of cereals”, causing significant yield losses world-wide. Charged with designing and implementing a comprehensive research program, I am responsible for developing novel strategies to achieve virus and fungal resistance in small grain crops. Research conducted in my laboratory has provided answers to long-standing questions about the effectiveness of wheatgrass-derived resistance to an array of YDV species. We have developed a model of the resistance mechanism and identified novel strategies that removed the principal obstacles to utilizing alien-derived traits, leading to the development of YDV-resistant wheat cultivars in collaboration with Dr. Ohm. In addition, my research group has addressed the epidemiology questions of these viruses by developing a new technology using multiplex PCR-based assays to detect and identify 10 viruses simultaneously. Being a principal member of an international consortium of scientists developing sets of oat molecular markers, I have made significant contributions to the development of a Diversified Array Technology (DArT) oat array with 2,600 molecular markers. My laboratory is also leading a project that will increase the number of oat simple sequence repeat (SSR) markers by 10 fold and is part of an international team developing oat single nucleotide polymorphism (SNP) markers.

My first initial experience with plant virus resistance involved development of transgenic virus resistance through the insertion of a cucumber mosaic virus (CMV) sequence into tobacco plants, rendering them essentially immune to CMV. These studies of replicase-mediated resistance were the first to show that this type of genetically engineered resistance was not

limited to tobacco mosaic virus but was extremely effective against an unrelated virus. This technology was patented and was the basis for transgenic virus resistance research into the mechanism of replicase/virus-derived resistance to CMV and other viruses which eventually led to the discovery of virus-induced gene silencing, a central component of many current research initiatives.

Other achievements and research contributions I have made include the first complete molecular genetic and biochemical characterization of ADPglucose pyrophosphorylase (AGPP) from monocot and dicot plants, a key to characterizing plant AGPPs. This led to a significant amount of additional research by other scientists in AGPP catalysis and regulation. Additionally, I successfully generated mutant barley populations from which low-phytic acid mutants were isolated and characterized in collaboration with Dr. Victor Raboy. My research interest also includes resistance to fungal infection in small grains. In collaboration with Dr. Goodwin, we identified and mapped a new gene for resistance to the septoria tritici blotch (STB) fungal pathogen *M. graminicola*. This research is having a direct impact on the integration of these traits in cereal breeding programs in the U.S. and worldwide. In collaborative research with Drs. Kong, Ohm and Scofield, our laboratory groups examined and characterized the resistance response of wheat to infection with *Fusarium graminearum*, which causes Fusarium head blight disease (FHB), demonstrating that susceptible wheat and wheat with Type II FHB resistance exhibit an array of induced physiological and resistance-specific responses.

TEACHING, EXTENSION AND SERVICE ACTIVITY

As an adjunct faculty member, I have taken an active role in education at Purdue University. This has occurred in a number of venues ranging from mentoring high school and undergraduate students in my laboratory, sponsoring a high school science teacher to update his molecular genetics knowledge, mentoring post-doctoral fellows, serving as a member of 24 graduate student committees across five departments, as a major professor for six students (MS and Ph.D.), presenting guest lectures in Plant Breeding and Plant Genetics courses, being a member and chair of Agronomy Graduate Committee for four years, and a member of Purdue Plant Biology Executive Committee since the program's inception until the transition into the PULSe program.

Lectures

- Agronomy 696 Graduate Seminar. Team taught course with Dr. Kladvko. Spring 2005
- Agronomy 605 Advanced Plant Breeding. "State of wheat and other cereal crop transformation technology and applications to crop physiology and breeding" Fall 1994, 1996, 1998, 2000; "Application of genomics to plant breeding" Fall 2002, 2006
- Agronomy 530 Plant Genetics. "Cereal crop transformation" Fall, 1994; "Proteomics" Fall 2002, 2004
- Biology 295 Undergraduate special topics. Instructor for a one-semester research project in on regulation of barley yellow dwarf virus gene expression. Spring 1995

Special Activities Contributing to Teaching

- Research mentor for Emily Overton, undergraduate in the Botany & Plant Pathology Department Honors Research Program. "A five state epidemiological study on the presence of viruses in winter wheat." 2008-2009

- Research mentor for Amanda Platteter, undergraduate in the Biology Department Honors Research Program. “EST-derived SSR markers from defined regions of the wheat genome to identify *Lophopyrum elongatum* specific loci.” 2003-2004
- Employed Phil Pusey, West Lafayette Jr/Sr High School Science teacher, as a laboratory assistant to gain hands-on experience in molecular biology. Summer 1999
- Employed 10 undergraduate students as laboratory assistants during which they received research experience in molecular biology and genetics of virus resistance with each being assigned direct responsibilities on a project.
- Research mentor for Dane Whitaker, West Lafayette High School student. Project to determine if single-feature polymorphisms on a 7E *Thinopyrum* chromosome could be converted for use in marker-assisted-breeding. Summer of 2007
- Research mentor for Gregor Siegmund, West Lafayette High School student. 7E *Thinopyrum* chromosome polymorphism project and also on a virus epidemiology project in collaboration with Emily Overton. Summers of 2007 and 2008.
- Research mentor for Juliana Kim, West Lafayette High School student. Honors research project “Using Randomly Amplified DNA Fingerprinting to Determine the Genetic Diversity Among *Wheatgrass* Species”, Lafayette Regional Science and Engineering Fair. 2006
- Research mentor for Robert Arbuckle, Jefferson High School student. “Development of a Rapid Fluorescent PCR Method for Use in Breeding BYDV Resistant Wheat”, Lafayette Regional Science and Engineering Fair. 1998

Selected Extension Activities

- Developed and provided a training course for Moroccan Plant Pathologists to learn quantitative real-time PCR (Q-PCR) for the detection of pathogens and diagnosis of plant diseases, in collaboration with Drs. Goodwin and Loesch-Fries. This was part of the Norman Borlaug International and Agricultural Science Fellows Program, under the direction of Dr. Ron Coolbaugh, Professor in Botany and Plant Pathology with assistance of the Purdue College of Agriculture International Programs. This also included trips to Morocco to oversee implementation and meet with the Moroccan Minister of Agriculture and U.S. Agricultural Attaché.
- Hosted Dr. Ahmed Abo Doma, Ain Shams University, Cairo, Egypt, as a visiting scientist working on a BYDV resistance project in collaboration with Dr. Ohm. 2000
- Coordinated the Western Regional Spring Barley Nursery and Western Dryland Spring Barley Nursery, Bozeman, MT. Provided leadership in evaluating elite barley germplasm for feed and malting use. 1992-1993

Service

2008-2009	CSREES Review Advisory Steering Committee & Crops Group co-chair.
2008-present	PULSe Admissions Committee
2008-present	Chair, Plant and Soils Space Management Committee
2007-present	Chair, Intermediate Seed Handling Facility Renovation Committee
2007-2008	Small Grains Variety Release Committee

2007- present	Greenhouse Committee
2006-2007	Patterson Endowed Chair Search Committee, (Drs. Rocheford and Tuinstra)
2006-present	Shared equipment laboratories, Coordinator
2006-present	Member of the Plant Biology and Virology PULSe Training groups
2005	LEAN team reviewing USDA-ARS Extramural Agreements Process
2002	Chair, USDA-ARS Research Geneticist Search Committee (Dr. Scofield)
2002	USDA-ARS Bioinformatician Search Committee (Dr. Crane)
2001	Maize Geneticist Faculty Search Committee, (Dr. Weil)
2001-2006	Genomic Sequencing Facility Advisory Committee
2000-present	Agricultural Research Programs Hatch Project Reviewer
1998-2000	Chair - Purdue Genetics Qualifying Examination Committee
1999	Botany/Plant Pathology Weeds Biology Faculty Search Committee (Dr. Pruitt)
1999-2006	Patterson Distinguished Lecture Committee
1999-2001	Admissions, Recruitment & Financial Aid Committee, Plant Biology Program
1995-2002	Executive Committee, Purdue University Plant Biology Program
1996-1999	Member and Chair, Agronomy Graduate Committee
1995	Agricultural Research Programs Assistantship Review Committee

PUBLICATIONS

Refereed Articles

1. Cowger C, R Weisz, **JM Anderson**, and JR Horton. 2010. Maize Debris Increases Barley Yellow Dwarf Virus Severity in North Carolina Winter Wheat. *Agronomy Journal*. 102:688-696.
2. **Anderson JM**, SB Goodwin, D Bucholtz, N Sardesai, G Gyulai, J Santini, and CE Williams. 2010. Evaluation of *Triticum aestivum* x *Lophopyrum elongata* disomic substitution lines for resistance to *Mycosphaerella graminicola*, *Blumeria graminis*, Barley and Cereal Yellow Dwarf Virus and Hessian fly. *Euphytica*. 172:251-262.
3. Liu X, **JM Anderson** and PM Pijut. 2010. Cloning and characterization of *Prunus serotina* *AGAMOUS*, a putative flower homeotic gene. *Plant Molecular Biology Reporter*. 28:193–203.
4. Kong L, **JM Anderson**, and HW Ohm. 2009. Segregation distortion in bread wheat of a segment of *Thinopyrum intermedium* chromosome 7E carrying *Bdv3*. *Plant Breeding* 128, 591-597.
5. Tinker NA, A Kilian, CP Wight, K Uszynska-Heller, P Wenzl, HW Rines, A Bjørnstad, Å., CJ Howarth, J-L Jannink, **JM Anderson**, BG Rosnagel, and 15 additional authors. 2009. New DArT markers for oat provide enhanced map coverage and global germplasm characterization. *BMC Genomics*. 10:39.
6. Deb M and **JM Anderson**. 2008. Development of a multiplexed PCR detection method for *Barley* and *Cereal yellow dwarf viruses*, *Wheat spindle streak virus*, *Wheat Streak Mosaic Virus* and *Soil-borne wheat mosaic virus*. *J. Virol. Methods*. 148:17–24.
7. Kong L, HW Ohm, and **JM Anderson**. 2007. Expression analysis of defense-related genes in wheat in response to infection by *Fusarium graminearum*. *Genome*. 50:1038-1048.
8. Ohm HW, **JM Anderson**, HC Sharma, L Ayala, N Thompson, and JJ Uphaus. 2005. Registration of yellow dwarf virus resistant wheat germplasm line P961341. *Crop Science*. 45:805-806.
9. Mullan DJ, A Platteter, NL Teakle, R Appels, TD Colmer, **JM Anderson**, MG Francki. 2005.

- EST-derived SSR markers from defined regions of the wheat genome to identify *Lophopyrum elongatum* specific loci. *Genome*. 48:811-822.
10. 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.
 11. Balaji B, K O'Connor, JR Lucas, **JM Anderson**, and LN Csonka. 2005. Timing of induction of osmotically controlled genes in *Salmonella enterica serovar typhimurium*, determined with quantitative real-time reverse transcription-PCR. *Appl. & Environ. Microbiol.* 71:8273-8283.
 12. Carvalho CHS, UB Zehr, N Gunaratna, **JM Anderson**, HH Kononowicz, TK Hodges, and JD Axtell. 2004. *Agrobacterium*-mediated transformation of sorghum: factors that affect transformation efficiency. *Genet. and Mol. Biol.* 27:259-269.
 13. Wiangjun H and **JM Anderson**. 2004. The basis for *Thinopyrum*-derived resistance to *Cereal yellow dwarf virus*. *Phytopathology*. 94:1102-1106.
 14. Adhikari TB, **JM Anderson**, and SB Goodwin. 2003. Identification and molecular mapping of a gene in wheat conferring resistance to *Mycosphaerella graminicola*. *Phytopathology*. 93:1158-1164.
 15. Balaji B, DL Bucholtz, and **JM Anderson**. 2003. *Barley yellow dwarf virus* and *cereal yellow dwarf virus* quantification by real-time PCR in resistant and susceptible plants. *Phytopathology*. 93:1386-1392.
 16. Dorsch JA, A Cook, KA Young, **JM Anderson**, AT Bauman, CJ Volkmannc, PN Murthy Pushpalatha, and V Raboy. 2003. Seed phosphorus and inositol phosphate phenotype of barley low phytic acid genotypes. *Phytochemistry*. 62:691-706.
 17. Ray S, **JM Anderson**, FI Urmeev, and SB Goodwin. 2003. Rapid induction of a protein disulfide isomerase and defense-related genes in wheat in response to the hemibiotrophic fungal *Mycosphaerella graminicola*. *Plant Mol. Biol.* 53:701-714.
 18. Francki MG, WA Berzonsky, HW Ohm, and **JM Anderson**. 2002. Physical location of a *HSP70* gene homologue on the centromere of chromosome 1B of wheat (*Triticum aestivum* L.). *Theoretical and Applied Genetics*. 104:184-191.
 19. Francki MG, HW Ohm, and **JM Anderson**. 2001. Novel germplasm providing BYDV resistance in wheat. *Australian Journal of Agricultural Research*. 52:1375-1382.
 20. Crasta O, MG Francki, DL Bucholtz, H Sharma, J Zhang, R-C Wang, HW Ohm, and **JM Anderson**. 2000. Molecular characterization of wheat-wheatgrass translocation lines and localization of BYDV resistance locus on the alien chromosome in wheat. *Genome*. 43:698-706.
 21. Sharma H, MG Francki, O Crasta, G Gyulai, D Bucholtz, HW Ohm, **JM Anderson**, K Perry, and F. Patterson. 1999. Cytological and molecular characterization of wheat lines with *Thinopyrum intermedium* chromosome additions, substitutions and translocations resistant to barley yellow dwarf virus. *Cytologia*. 64:93-100.
 22. **Anderson JM**, DL Bucholtz, AE Greene, MG Francki, S M Gray, H Sharma, HW Ohm, and KL Perry. 1998. Characterization of wheatgrass-derived barley yellow dwarf virus resistance in a wheat alien chromosome substitution line. *Phytopathology*. 88:851-855.
 23. Francki MG, O Crasta, **JM Anderson**, H Sharma and HW Ohm. 1997. Structural organization of an alien *Thinopyrum intermedium* group 7 chromosome in US soft red winter wheat (*Triticum aestivum* L.). *Genome*. 40:716-722.
 24. Nakata PA, **JM Anderson**, and TW Okita. 1994. Structure and expression of the potato ADP-glucose pyrophosphorylase small subunit. *J. Biol. Chem.* 269: 30798-30807.
 25. Zaitlin M, **JM Anderson**, KL Perry, L Zhang, and P Palukaitis. 1994. Specificity of replicase-mediated resistance to cucumber mosaic virus. *Virology*. 201:200-205.

26. **Anderson JM**, P Palukaitis, and M Zaitlin. 1992. A defective replicase gene induces resistance to cucumber mosaic virus in transgenic tobacco plants. *Proc. Natl. Acad. Sci. (USA)*. 89:8759-8763.
27. **Anderson JM**, DS Robertson, and DW Morris. 1991. Molecular characterization of four *shrunk* mutants induced in Mutator lines in *Zea mays* L. *Plant Science*. 77:93-101.
28. **Anderson JM**, R Larson, D Laudencia, WT Kim, D Morrow, and TW Okita. 1991. Molecular characterization of the gene encoding a rice endosperm-specific ADPglucose pyrophosphorylase subunit and its developmental pattern of transcription. *Gene* 97:199-205.
29. Nakata PA, TW Greene, **JM Anderson**, BJ Smith-White, T Okita, and J Preiss. 1991. Comparison of the primary sequences of two potato tuber ADP-glucose pyrophosphorylase subunits. *Plant Mol. Biol.* 17:1089-1093.
30. Okita TW, PA Nakata, **JM Anderson**, J Sowokinos, M Morell, and J Preiss. 1990. The subunit structure of potato tuber ADPglucose pyrophosphorylase. *Plant Physiol.* 93:785-790.
31. **Anderson JM**, J Hnilo, **R. Larson**, TW Okita, M Morell, and J Preiss. 1989. The encoded primary sequence of a rice seed ADPglucose pyrophosphorylase subunit and its homology to the bacterial enzyme. *J. Biol. Chem.* 264:12238-12242.
32. **Anderson JM** and PA Hartman. 1985. Direct immunoassay for the detection of salmonellae in foods and feeds. *Appl. Environ. Microbiol.* 49:1124-1127.

Submitted Articles

33. Thompson N and **JM Anderson** Characterization of an ancient conserved tandem repeat sequence in the grasses. *Genome*.
34. Wiangjun H and **JM Anderson**. Cellular localization of *Cereal Yellow Dwarf Virus* reveals an alteration in aphid feeding and inhibition of viral movement in the sieve tubes of resistant wheat line P29. *Molecular Plant Microbe Interaction*.
35. Ayala-Navarrete L, N Thompson, HW Ohm and **JM Anderson**. Molecular marker characterization of wheat -*Thinopyrum intermedium* interstitial translocations carrying *Bdv3* resistance to Yellow Dwarf Viruses. *Genome*.

Patents

36. Zaitlin M, P Palukaitis, and **JM Anderson**. 1997. Induction of resistance to viral diseases in plants. Patent 5633449.
37. Zaitlin M, P Palukaitis and **JM Anderson**. 1999. Implanting disease resistance to plants with viral replicase DNA molecules which do not have a read-through portion. Induction of resistance to viral diseases in plants. Patent 5945581.

Book Chapters

38. Preiss J, D Cress, J Hutney, M Morell, M Bloom, TW Okita and **JM Anderson**. 1989. Regulation of starch synthesis: Biochemical and genetic studies. In: J. R. Whitaker, P.E. Sonnet, (eds.) ACS Symposium Series 389 on Biocatalysis in Agricultural Biotechnology. American Chemical Society, Washington DC pp. 84-92.
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