

## **CURRICULUM VITAE**

### **NAME**

Byrne, Patrick F

### **ADDRESS**

Soil and Crop Sciences  
College of Agricultural Sciences

Plant Sciences  
CD 1170

### **PHONE**

(970) 491-6985

### **EDUCATION**

1987 Ph D, UNIVERSITY OF MISSOURI

1978 MS, UNIVERSITY OF MISSOURI

1970 BA, WASHINGTON UNIVERSITY (ST. LOUIS)

### **SABBATICALS**

(2005-2006) Fulbright Foundation, Five months at Cukurova University, Adana, Turkey.

(2013) Self, A two-part sabbatical: One month at the International Crop Research Institute for the Semi-Arid Tropics, Hyderabad, India; and three months at Northwest Agricultural and Forestry University, Yangling, Shaanxi, China.

### **OTHER POSITIONS**

2009 - Present Professor, Soil & Crop Sciences, Colorado State University.

2003 - 2009 Associate Professor, Soil & Crop Sciences, Colorado State University.

1997 - 2003 Assistant Professor, Soil & Crop Sciences, Colorado State University.

1992 - 1997 Assistant Curator, Maize Genome Database, USDA-ARS Plant Genetics Research Unit.

Director

Director

### **PUBLISHED WORKS**

#### **Refereed Journal Articles**

Becker, S. R., Byrne, P. F., Reid, S. D., Bauerle, W. L., McKay, J. K., Haley, S. D. (2016). Root traits contributing to drought tolerance of synthetic hexaploid wheat in a greenhouse study. *Euphytica*, 207(1), 213-224.

- Stromberger, M. E., Abduelafez, I., Byrne, P. F., Elamari, A., Manter, D. K., Moragues, M., Weir, T. L. Genotype-Specific Enrichment of ACC Deaminase-Positive Bacteria in Winter Wheat Rhizospheres. *Applied Soil Ecology*.
- Byrne, P. F., El-Feki, W., Reid, S. D., Haley, S. D. (2015). Registration of CO940610/‘Platte’ Wheat Doubled Haploid Mapping Population. *Journal of Plant Registrations*, 9, 419–423.
- Grogan, S. M., Haley, S. D., McMaster, G., Reid, S. D., Byrne, P. F. Allelic Variation in Developmental Genes and Effects on Winter Wheat Heading Date in the U.S. Great Plains. *PLOS ONE*.
- Grogan, S. M., Haley, S. D., McMaster, G., Reid, S. D., Byrne, P. F. Phenotypic plasticity of winter wheat heading date and grain yield across the U.S. Great Plains. *Crop Science*.
- Zuber, T., Holm, D. G., Byrne, P. F., Ducreux, L., Taylor, M., Kaiser, M., Stushnoff, C. (2014). Optimization of in vitro inhibition of HT-29 colon cancer cell cultures by *Solanum tuberosum* L. extracts. *Food and Function*. DOI: 10.1039/c4fo00649f
- Byrne, P. F. (2013). Phenotypic diversity of jointed goatgrass (*Aegilops cylindrica*) accessions from the western United States under irrigated and dryland conditions. *Agriculture, Ecosystems and Environment*.
- Byrne, P. F. (2012). Inheritance and Genetic Mapping of Russian Wheat Aphid Resistance in Iranian Wheat Landrace Accession PI 626580. *Crop Science*.
- Byrne, P. F. (2012). Joint-Mapping and Identification of Markers for Marker-Assisted Selection of Wsm2 in Wheat. *Crop Science*.
- Byrne, P. F. (2012). Metabolite profiling of a diverse collection of wheat lines using ultraperformance liquid chromatography coupled with time-of-flight mass spectrometry. *PLoS One*, Article e44179, DOI: 10.1371/journal.pone.0044179, 7(8).
- Byrne, P. F. (2011). Backcrossing Provides an Avenue for Gene Introgression from Wheat to Jointed Goatgrass (*Aegilops cylindrica*) in the US Great Plains. *Weed Science*, 59, 188-194.
- Zheng, S., Byrne, P. F., Haley, S. D., Shan, X., Reid, S. D. (2010). Glutenin allelic variation and 1AL 1RS effects on dough mixing properties of wheat grown in irrigated and rainfed environments. *Euphytica*, 176, 357-369.
- Byrne, P. F. (2010). Incorporating case studies into a world food and population course. *Journal of Natural Resources & Life Sciences Education*, 39, 79-83.
- Byrne, P. F. (2009). Association analysis reveals effects of wheat glutenin alleles and rye translocations on dough- mixing properties. *J Cereal Sci*, 50, 283-290.
- Byrne, P. F. (2009). Inheritance of long chain fatty acid content in rapeseed (*Brassica napus* L). *Euphytica*, 164, 583-592.
- Byrne, P. F. (2009). Perceived Consequences of Herbicide- Tolerant and Insect-Resistant Crops on Integrated Pest Management Strategies in the Western United States: Results of an Online Survey. *AgBioForum*, 12(3&4), 10-Jan.
- Byrne, P. F. (2008). Jointed goatgrass (*Aegilops cylindrica*) by imidazolinone-resistant wheat hybridization under field conditions. *Weed Sci*, 56, 32-36.
- Gaines, T., Henry, W. B., Byrne, P. F., Westra, P., Nissen, S. J., Shaner, D. L. (2008). Jointed goatgrass (*Aegilops*

- cylindrica) by imidazolinone-resistant wheat hybridization under field conditions. *Weed Science*, 56, 32-36.
- Byrne, P. F. (2007). Adventitious presence of herbicide resistant wheat in certified and farm- saved seed lots. *Crop Science*, 47, 751-756.
- Gaines, T., Preston, C., Byrne, P. F., Henry, W. B., Westra, P. (2007). Adventitious presence of herbicide resistant wheat in certified and farm-saved seed lots. *Crop Science*, 47(2), 751-754.
- Byrne, P. F. (2007). An empirically derived model of field-scale gene flow in winter wheat. *Crop Sci*, 47, 2308-2316.
- Gaines, T., Byrne, P. F., Westra, P., Nissen, S. J., Henry, W. B., Shaner, D. L., Chapman, P. L. (2007). An empirically derived model of field-scale gene flow in winter wheat. *Crop Science*, 47(6), 2308-2316.
- Byrne, P. F. (2007). Quantitative trait loci linked to white mold resistance in common bean. *Crop Sci*, 47, 2285-2294.
- Byrne, P. F. (2007). Trait associations at the Xgwm 261 and Rht-B1 loci in two winter wheat recombinant inbred line populations. *Crop Sci*, 47, 2346-2355.
- Byrne, P. F. (2007). Variation for glutenin and waxy alleles in the US hard winter wheat germplasm. *J Cereal Sci*, 45, 199-208.
- Maxwell, J. J., Brick, M. A., Byrne, P. F., Schwartz, H. F., Shan, X., Ogg, J. B., Hensen, P. A. (2007). Quantitative trait loci linked to white mold resistance in common bean. *Crop Sci*, 47, 2285-2294.
- Byrne, P. F. (2006). Mapping quantitative trait loci associated with selenate tolerance in *Arabidopsis thaliana*. *New Phytol*, 170, 33-42.
- Byrne, P. F. (2006). Reaction to three races of fusarium wilt in the *Phaseolus vulgaris* core collection. *Crop Sci*, 46, 1245-1252.
- Byrne, P. F. (2006). Safety and public acceptance of transgenic products. *Crop Sci*, 46, 113-117.
- Brick, M. A., Byrne, P. F., Schwartz, H. F., Ogg, J. B., Otto, K., Fall, A. L., Gilbert, J. (2006). Reaction to three races of fusarium wilt in the *Phaseolus vulgaris* core collection. *Crop Sci*, 46, 1245-1252.
- Butler, J. D., Byrne, P. F., Mohammadi, V., Chapman, P. L., Haley, S. D. (2005). Agronomic performance of Rht alleles in a spring wheat population across a range of moisture levels. *Crop Sci*, 45, 939-947.
- Byrne, P. F. (2003). Characterization of *Fusarium oxysporum* isolates from common bean and sugar beet using pathogenicity assays and random-amplified polymorphic DNA markers. *J Phytopathol*, 151, 352-360.
- Byrne, P. F. (2003). GPFARM plant model parameters. *Transactions of the American Society of Agricultural Engineers*, 46, 1337-1346.
- Cramer, R. A., Byrne, P. F., Brick, M. A., Panella, L., Wickliffe, E., Schwartz, H. F. (2003). Characterization of *Fusarium oxysporum* isolates from common bean and sugar beet using pathogenicity assays and random-amplified polymorphic DNA markers. *J Phytopathol*, 151, 352-360.
- Byrne, P. F. (2002). Increasing public understanding of transgenic crops through the World Wide Web. *Public Underst Sci*, 11, 293-304.

- Byrne, P. F. (2002). Quantitative trait loci for first- and second-generation European corn borer resistance derived from the maize inbred Mo47. *Crop Sci*, 42, 584-593.
- Byrne, P. F. (2001). Detection and mapping of a major locus for Fusarium Wilt resistance in common bean. *Crop Sci*, 41, 1494-1498.
- Byrne, P. F. (2001). The biological basis of epistasis between quantitative trait loci for flavone and 3-deoxyanthocyanin synthesis in maize (*Zea mays* L). *Genome*, 44, 667-676.
- Fall, A. L., Byrne, P. F., Jung, G., Coyne, D. P., Brick, M. A., Schwartz, H. F. (2001). Detection and mapping of a major locus for Fusarium Wilt resistance in common bean. *Crop Sci*, 41, 1494-1498.
- Byrne, P. F. (2000). Applications of tagging and mapping insect resistance loci in plants. *Annu Rev Entomol*, 45, 393-422.
- Byrne, P. F. (2000). Inheritance of resistance to fusarium wilt in two common bean races. *Crop Sci*, 40, 954-958.
- Cross, H., Brick, M. A., Schwartz, H. F., Panella, L. W., Byrne, P. F. (2000). Inheritance of resistance to fusarium wilt in two common bean races. *Crop Sci*, 40, 954-958.
- Byrne, P. F. (1998). Genetic mechanisms underlying apimaysin and maysin synthesis and corn earworm antibiosis in maize (*Zea mays* L). *Genetics*, 149, 1997-2006.

### **Non-Refereed Journal Articles**

- Seshadri, A., Byrne, P. F. Variation in spikelet fertility under drought stress in 6 selected wheat genotypes. *Journal of Experimental Botany*.
- Edae, E., Byrne, P. F., Haley, S. D., Lopes, M., Reynolds, M. (2014). Genome wide association mapping of yield and yield components of spring wheat under contrasting moisture regimes. *Theoretical and Applied Genetics*, 127, 791-807.
- Edae, E., Byrne, P. F., Manmathan, H. K., Haley, S. D., Moragues, M., Lopes, M., Reynolds, M. (2013). Association mapping and nucleotide sequence variation in five drought tolerance candidate genes in spring wheat. *The Plant Genome*, 6(2). doi:10.3835/plantgenome2013.04.0010
- Enjalbert, J.-N., Zheng, S., Johnson, J. J., Mullen, J. L., Byrne, P. F., McKay, J. K. (2013). Brassicaceae germplasm diversity for agronomic and seed quality traits under drought stress. *Industrial Crops and Products*, 47:, 176-185.
- El-Feki, W., Byrne, P. F., Reid, S. D., Lapitan, N. L., Haley, S. D. (2013). Quantitative trait locus mapping for end-use quality traits in hard winter wheat under contrasting soil moisture levels. *Crop Science*, 53, 1953-1967.
- Comas, L., Becker, S., Cruz, V. M. V., Byrne, P. F., Dierig, D. (2013). Root traits contributing to plant productivity under drought. *Frontiers in Plant Science*, 4(Article 442), 16.
- Boyer, J. S., Byrne, P. F., Cassman, K. G., Cooper, M., Delmer, D., Greene, T., Gruis, F., Habben, J., Hausmann, N., Kenny, N., Lafitte, R., Paszkiewicz, S., Porter, D., Schlegel, A., Schussler, J., Setter, T., Shanahan, J., Sharp, R., Vyn, T., Warner, D., Gaffney, J. (2013). The U.S. drought of 2012 in perspective: A call to action. *Global Food Security*, 2, 139-143.
- Matthews, S. B., Santra, M., Mensack, M. M., Wolfe, P., Byrne, P. F., Thompson, H. J. (2012). Metabolite

profiling of a diverse collection of wheat lines using ultraperformance liquid chromatography coupled with time-of-flight mass spectrometry. *PLoS one*, 7(8), e44179.

- Byrne, P. F. (2011). *Drought Tolerant Trait Identification in Synthetic Hexaploid Wheat*. Crop Science Society of America Annual Meeting, Oct 16-19, San Antonio, TX Abstract 6498: <http://a-c-s.confex.com/crops/2011am/webprogram/Paper64981.html>.
- Byrne, P. F. (2011). *Drought Tolerant Trait Identification In Synthetic Hexaploid Wheat*. Western Society of Crop Sciences annual meeting, Laramie, WY, June 20-21, Abstract 69060: <http://a-c-s.confex.com/crops/ws2011/webprogram/Paper69060.html>.
- Byrne, P. F. (2011). *High-throughput Method to Measure Seminal Root Angle In Winter Wheat*. Crop Science Society of America Annual Meeting, Oct 16-19, San Antonio, TX Abstract 66205: <http://a-c-s.confex.com/crops/2011am/webprogram/Paper66205.html>.
- Byrne, P. F. (2011). *Identification of QTL Associated with Resistance to Fusarium Wilt In Common Bean*. Crop Science Society of America Annual Meeting, Oct 16-19, San Antonio, TX Abstract 65156: <http://a-c-s.confex.com/crops/2011am/webprogram/Paper65156.html>.
- Byrne, P. F. (2011). *Phenotypic Evaluation of a Spring Wheat Association Mapping Panel Targeted to Identification of Heat and Drought Tolerance Genes*. Western Society of Crop Sciences annual meeting, Laramie, WY, 20-21 June, Abstract 69103: <http://a-c-s.confex.com/crops/ws2011/webprogram/Paper69103.html>.
- Byrne, P. F. (2011). *Synthetic Hexaploid Wheat As a Source of Favorable Alleles for Yield In An Advanced Backcross QTL Winter Wheat Population*. Crop Science Society of America Annual Meeting, Oct 16-19, San Antonio, TX Abstract 65229: <http://a-c-s.confex.com/crops/2011am/webprogram/Paper65229.html>.
- Byrne, P. F. (2011). *Synthetic Hexaploid Wheat Contributes Favorable Alleles for Yield in an Advanced Backcross QTL Winter Wheat Population*. Western Society of Crop Sciences annual meeting, Laramie, WY, 20-21 June, Abstract 68993: <http://a-c-s.confex.com/crops/ws2011/webprogram/Paper68993.html>.
- Byrne, P. F. (2010). *Brassica, juncea, a promising biofuel crop for the west central Great Plains*. American Society of Agronomy Annual Meeting, 31 Oct-3 Nov, Long Beach, CA Abstract no 59857.
- Byrne, P. F. (2010). *Genetic resistance to white mold derived from multiple sources of common and scarlet runner bean*. American Society of Agronomy Annual Meeting, 31 Oct-3 Nov, Long Beach, CA Abstract no 59810.
- Byrne, P. F. (2010). *Identification of a soil-borne wheat mosaic virus resistance QTL and its effect on multiple agronomic and end-use quality traits*. Plant Animal Genome Conference XVIII, San Diego, 9-13 Jan, Abstract P259.
- Byrne, P. F. (2010). *Improving Drought Stress Tolerance in Wheat: A Grand Challenge for the 21st Century*. Proc Hard Winter Wheat Workers Workshop, Lincoln, NE, 8-10 March.
- Byrne, P. F. (2010). *Integrating Genomics, Physiology, and Field Experiments for Modeling Crop Water Deficits in Winter Wheat*. American Society of Agronomy Annual Meeting, 31 Oct-3 Nov, Long Beach, CA Abstract no 59337.
- Byrne, P. F. (2010). *QTL detection for bread making quality and agronomic traits in a winter wheat mapping population*. American Society of Agronomy Annual Meeting, 31 Oct-3 Nov, Long Beach, CA Abstract no

59744.

Byrne, P. F. (2010). *QTL mapping for bread making quality and agronomic traits in winter wheat under different soil moisture levels*. Plant Animal Genome Conference XVIII, San Diego, 9-13 Jan, Abstract P278.

Byrne, P. F. (2010). *Risk of introgression from drought tolerant wheat to jointed goatgrass in the US Great Plains*. American Society of Agronomy Annual Meeting, 31 Oct-3 Nov 2010, Long Beach, CA Abstract no 59907.

### **AES Report/Bulletin**

Byrne, P. F., Seshadri, A., Gaines, T. *GM Crops: Environmental Benefits and Concerns*. CSU Agricultural Experiment Station.

Byrne, P. F., Gaines, T., Westra, P., Henry, W. B., Nissen, S. J., Chapman, P., Harrington, J. E. (2008). *Estimating gene flow from wheat to wheat and wheat to jointed goatgrass (Aegilops cylindrica)* (vol. TB08-03). CSU Agricultural Experiment Station.

### **Abstract**

Sarah, G., Reid, S., Haley, S. D., Byrne, P. F. (2014). *Characterizing Drought Tolerance and Agronomic Traits in Wheat Using Canopy Spectral Reflectance*. Madison, WI: Agronomy Abstracts.

McMaster, G., Haley, S. D., Byrne, P. F. (2014). *Genes by environment by management (GEM) interaction on winter wheat phenology: opportunities for adaptation to climate change*. Madison, WI: Agronomy Abstracts.

Sarah, G., Reid, S., McMaster, G., Haley, S. D., Byrne, P. F. (2014). *Variation and phenotypic plasticity of heading date and yield across multiple U.S. Great Plains environments*. Madison, WI: Agronomy Abstracts.

Eade, E., Byrne, P. F., Haley, S. D., Manmathan, H. K., Moragues, M. (2013). *Association mapping of drought tolerance candidate genes in spring wheat*. San Diego, CA: Plant Animal Genome Conference.

Grogan, S., Byrne, P. F., Reid, S., Haley, S. D., Mahmoud, W. (2013). *Phenological differences contributing to yield in 300 winter wheat lines grown under water stressed and non-stressed conditions*. San Diego, CA: Plant Animal Genome Conference.

Byrne, P. F., Reid, S., Haley, S. D. (2013). *Breeding for tolerance to drought in winter wheat*. Madison, WI: Agronomy abstracts.

McMaster, G., Moragues, M., Haley, S. D., Byrne, P. F., Johnson, J. J., Buchleiter, G. (2013). *Determining winter wheat phenological parameters for phenogymms, a simple model to predict phenology*. Madison, WI: Agronomy abstracts.

Becker, S., Byrne, P. F., Reid, S., Bauerle, W. L., Haley, S. D. (2013). *Synthetic hexaploid wheat improves the yield potential and drought tolerance of bread wheat germplasm*. National Association of Plant Breeders annual meeting.

### **CE Report/Bulletin/Factsheet**

Byrne, P. F., Pendell, D. L., Graff, G. D. (2014). *Labeling of Genetically Modified Foods*. Colorado State University Extension. [www.ext.colostate.edu/pubs/foodnut/09371.html](http://www.ext.colostate.edu/pubs/foodnut/09371.html)

Byrne, P. F. (2014). *Genetically Modified (GM) Crops: Techniques and Applications*. Colorado State University Extension. [www.ext.colostate.edu/pubs/crops/00710.html](http://www.ext.colostate.edu/pubs/crops/00710.html)

Schwartz, H. F., Panella, L. W., Brick, M. A., Byrne, P. F. (2013). *Fusarium Wilt and Yellows of Sugar Beet and Dry Bean*. CSU Bulletin.

#### **PAPERS PRESENTED/SYMPOSIA/INVITED LECTURES/PROFESSIONAL MEETINGS/WORKSHOPS**

November 18, 2015, "Specificity of Root-Bacterial Interactions for Drought Stress Tolerance in Winter Wheat", ASA-CSSA-SSSA 2015 Annual Meeting, ASA-CSSA-SSSA, (Presenter) Stromberger, M. E.

November 17, 2015, "Phenotypic Plasticity of Growing Degree-Days to Heading and Grain Yield in a Multi-Environment Trial of Winter Wheat", CSSA Annual Meeting, Crop Science Society of America, (Presenter) Grogan, S. M.

November 17, 2015, "Root Trait Variation of *Aegilops tauschii* Accessions for Potential Improvement of Drought Tolerance in Winter Wheat", CSSA Annual Meeting, Crop Science Society of America, (Presenter) Moore, A. C.

March 24, 2015, "Breeding for a Variable Climate: Strategies for Improving Drought Tolerance of Wheat in the Great Plains", Cargill seminar series, Univ. of Saskatchewan, University of Saskatchewan.

January 13, 2015, "Diversity of Root Traits in Great Plains Winter Wheat Under Drought Stress", Plant and Animal Genome Meeting, PAG, (Presenter) Awad, W.

January 11, 2015, "Preliminary Association Mapping of 25,500 SNPs to Winter Wheat Grain Traits", TCAP Annual Meeting, Triticeae Coordinated Agricultural Project, (Presenter) Harrington, J. E.

December 2, 2014, "Root-microbial interactions to enhance wheat productivity under drought stress.", Heat and Drought Wheat Improvement Consortium, HeDWIC, Frankfurt, Germany.

November 12, 2014, "Breeding for Drought Tolerance", Webinar, Triticeae Coordinated Agricultural Project, Online.

November 4, 2014, "Characterizing Drought Tolerance and Agronomic Traits in Wheat Using Canopy Spectral Reflectance", CSSA annual meeting, Crop Science Society of America, Long Beach, CA.

November 4, 2014, "Diversity of Root Traits in Winter Wheat Under Drought Stress", CSSA annual meeting, Crop Science Society of America, Long Beach, CA.

November 3, 2014, "Fine-Tuning Timing of Reproductive Development in Winter Wheat: Genome-Wide Association Studies of Heading Date Across Multiple U.S. Great Plains Environments", CSSA annual meeting, Crop Science Society of America, Long Beach, CA.

October 22, 2014, "Breeding for a Variable Climate: Strategies for Improving Drought Tolerance of Wheat", University of Missouri, Division of Plant Sciences, Columbia, MO.

August 7, 2014, "Improving Drought Tolerance of Hard Winter Wheat through the Triticeae Coordinated Agricultural Project", NAPB annual meeting, National Association of Plant Breeders, Minneapolis, MN.

August 7, 2014, "Multi-environment analyses of winter wheat heading date across the U.S. Great Plains: Can we better optimize genotypes for specific environments?", NAPB annual meeting, National Association of Plant Breeders, Minneapolis, MN.

June 11, 2014, "Breeding for Drought Tolerance in Winter Wheat through Above and Belowground Interactions", Annual Field Day, Akron, CO, USDA-ARS Central Great Plains Research Station, (Presenter) Byrne, P. F., Akron, CO.

April 2014, "Patterns of embryo abortion in common bread wheat (*Triticum aestivum*)", Celebrating Undergraduate Research and Creativity, CSU, Fort Collins.

April 15, 2014, "Investigating the effects of genes related to flowering time in winter wheat", Celebrate Undergraduate Research and Creativity research forum, Colorado State University.

April 15, 2014, "Patterns of embryo abortion in common bread wheat (*Triticum aestivum*)", Celebrate Undergraduate Research and Creativity research forum, Colorado State University, Colorado State University.

March 31, 2014, "Breeding for Drought Tolerance in Winter Wheat through Above-Belowground Interactions", CSU Water Center, CSU.

January 30, 2014, "Changing Landscapes in Asia: Reflections on a Sabbatical in Nepal, India, and China", Soil and Crop Sciences seminar, Soil and Crop Sciences Department, Fort Collins, CO.

January 29, 2014, "Genetic Engineering Applications in Horticultural Crops", Horticulture Department seminar, Horticulture and Landscape Architecture Department, Fort Collins, CO.

November 4, 2013, "Breeding for Tolerance to Drought in Winter Wheat", Crop Science Society of America annual meeting, Tampa, FL.

November 3, 2013, "Metabolomic profiling of root exudates for wheat-microbial interactions", Annual meeting of the Soil Science Society of America, (Presenter) Maskus, C., Tampa, FL.

September 30, 2013, "Root traits contributing to plant productivity under drought", Association for the Advancement of Industrial Crops, Washington, DC.

2012, "Erena Edae, Patrick Byrne, Scott Haley, Marc Moragues, Scott Reid, Marta Lopes, and Matthew Reynolds. Association mapping for drought tolerance traits in spring wheat grown under rainfed and irrigated conditions. Crop Science Society of America annual meeting, Cincinnati, OH, Oct. 21-24, 2012."

2012, "Molecular Markers Linked to Quantitative Trait Loci for Resistance to Fusarium Wilt Race 6 in Common Bean. Sonya R. Hueftle, Mark Brick, Patrick F. Byrne, Scott Reid, and Judy Harrington. Crop Science Society of America annual meeting, Cincinnati, OH, Oct. 21-24, 2012."

2012, "P. Byrne and Steve Becker. Use of synthetic hexaploid wheat to improve



drought tolerance of Great Plains wheat cultivars. Water Resources Seminar (GRAD 592). Oct. 8, 2012."

2012, "P. Byrne, Strategies for Improving Drought Tolerance in Wheat. Colorado Ag Water Alliance field tour, ARDEC, June 26, 2012".

2012, "P. Byrne, V. Valdez, and S. Reid. Bringing Biotech to the Classroom: The Quest for Better Wheat. Ag in the Classroom national convention, Embassy Suites, Loveland. June 20."

2012, "P.F. Byrne, S. Becker, J. McKay, B. Bauerle, S.D. Reid, and P.S. Baenziger. Enhancing Education and Research Capacity in Plant Breeding for Drought Tolerance. USDA-AFRI Project Director's meeting, San Diego, Jan. 13, 2012."

2012, "QTL Analysis of Brassica Napus for Yield Components in Dryland and Irrigated Conditions. Annie Heiliger, Patrick F. Byrne, Jack Mullen, Richard Fletcher, and John McKay. Crop Science Society of America annual meeting, Cincinnati, OH, Oct. 21-24, 2012."

2011, "P. Byrne, Methods, Applications, Risks, and Benefits of Transgenic Crops. Invited presentation to about 40 members of the EPA Regional Headquarters staff, Denver, May 4."

2011, "P. Byrne, S. Becker, J. McKay, B. Bauerle. Integrating research and education to improve drought tolerance in wheat. Invited talk and poster at USDA-NIFA Project Directors meeting, San Diego, Jan. 14".

2011, "P. Byrne, Transgenic Crops: Methods, Applications, and Environmental Impact. Invited presentation to about 30 employees of the Sterling-Rice Group, a food consulting firm in Boulder, July 29."

2011, "P. Byrne. Risks and Benefits of Genetically Engineered Crops. Invited panel discussion member, Denver Museum

of Science and Nature, April 8.  
Audience was 30 junior and senior high school science teachers."

2010, "Byrne, P.F., J. McKay, S.D. Reid, A. Heiliger, P.S. Baenziger, and B.C. Martin. 2010. Enhancing research and education capacity in plant breeding for drought tolerance. USDA-NIFA Project Directors Meeting, 8 Jan. 2010, San Diego, CA."

2010, "K. Onweller, S. Baenziger, P. Byrne, et al. Characterization of six CIMMYT synthetic wheats. Drought Adaptation Symposium, 24-25 June 2010, CSU, Fort Collins".

2010, "P. Byrne, M. Moragues, S. Haley. Improving Drought Stress Tolerance in Wheat: A Grand Challenge for the 21st Century. Invited presentation to the Hard Winter Wheat Workers Workshop, Lincoln, NE, 8-10 March 2010".

2010, "P. Byrne. Feeding the World: An Update. Crops Extension team, CSU, 29 Sept. 2010".

2010, "P. Byrne. Risks and Benefits of Genetically Engineered Crops, panel discussion member. Denver Museum of Science and Nature, 14 July 2010.  
Audience was 38 junior and senior high school science teachers participating in a continuing education program."

#### **OTHER ACTIVITIES/ACCOMPLISHMENTS – PUBLICATIONS/SCHOLARLY RECORD**

(February 3, 2015). Workshop, "Search Committee Chair training, CSU Office of Equal Opportunity," United States.

(2013). Workshop, "Blackboard RamCT Tests and Exams," CSU.

(September 2013 - November 2013). Non-credit Chinese language course, Confucius Institute, CSU. Number of Credit Hours: 0.

#### **TEACHING:**

<b><u>Year</u></b>	<b><u>Semester</u></b>	<b><u>Course No./Title</u></b>	<b><u>Cr. Hrs.</u></b>	<b><u>Enrollment</u></b>
2016	Spring	SOCR725 - Quantitative Inheritance in Plant Breeding	3	3
2016	Spring	SOCR725 - Quantitative Inheritance in Plant Breeding - Lab	0	3
2016	Spring	SOCR699 - Thesis	18	7
2015	Fall	SOCR799 - Dissertation	18	11

2015	Fall	HORT460 - Plant Breeding	3	14
2015	Fall	SOCR460 - Plant Breeding	3	10
2015	Fall	HORT460 - Plant Breeding - Recitation	0	7
2015	Fall	HORT460 - Plant Breeding - Recitation	0	7
2015	Fall	SOCR460 - Plant Breeding - Recitation	0	10
2015	Fall	SOCR460 - Plant Breeding - Recitation	0	0
2015	Fall	SOCR570 - Plant Breeding for Drought Tolerance	1	6
2015	Fall	SOCR570 - Plant Breeding for Drought Tolerance	1	12
2015	Fall	SOCR486 - Practicum	4	4
2015	Fall	SOCR784 - Supervised College Teaching	18	3
2015	Fall	SOCR699 - Thesis	18	11
2015	Spring	SOCR799 - Dissertation	18	12
2015	Spring	SOCR486 - Practicum	4	2
2015	Spring	SOCR699 - Thesis	18	14
2014	Fall	SOCR430 - Applications of Plant Biotechnology	3	3
2014	Fall	SOCR799 - Dissertation	18	15
2014	Fall	SOCR699 - Thesis	18	9
2014	Summer	SOCR796 - Group Study: Plant Breeding for Drought Tolerance	18	14
2014	Spring	SOCR799 - Dissertation	18	15
2014	Spring	SOCR475 - Global Challenges in Plant and Soil Science	3	23
2014	Spring	SOCR725 - Quantitative Inheritance in Plant Breeding	3	4
2014	Spring	SOCR725 - Quantitative Inheritance in Plant Breeding - Lab	0	4
2014	Spring	SOCR784 - Supervised College Teaching	18	7
2014	Spring	SOCR699 - Thesis	18	10
2013	Fall	SOCR799 - Dissertation	18	19
2013	Fall	SOCR495 - Independent Study	3	1
2013	Fall	SOCR495 - Independent Study	18	7
2013	Fall	SOCR570 - Plant Breeding for Drought Tolerance	1	24
2013	Fall	SOCR570 - Plant Breeding for Drought Tolerance - On-line	1	3
2013	Fall	SOCR570 - Plant Breeding for Drought Tolerance, Resident Instruction	1	3
2013	Fall	SOCR792 - Seminar	1	10
2013	Fall	SOCR784 - Supervised College Teaching	18	6
2013	Spring	SOCR799 - Dissertation	18	17
2013	Spring	SOCR486 - Practicum	4	6
2013	Spring	SOCR699 - Thesis	18	6
2012	Fall	SOCR430 - Applications of Plant Biotechnology	3	12
2012	Fall	SOCR799 - Dissertation	18	17
2012	Fall	SOCR795 - Independent Study	18	1
2012	Fall	SOCR784 - Supervised College Teaching	18	3
2012	Fall	SOCR699 - Thesis	18	7
2012	Summer	SOCR796 - Group Study	18	0
2012	Summer	SOCR796 - Group Study: Plant Breeding for Drought Tolerance	3	15
2012	Summer	SOCR796 - Group Study: Plant Breeding for Drought Tolerance (International)	3	0
2012	Spring	SOCR799 - Dissertation	18	15
2012	Spring	SOCR475 - Global Challenges in Plant and Soil Science	3	14
2012	Spring	SOCR796 - Group Study	18	1
2012	Spring	SOCR725 - Quantitative Inheritance in Plant Breeding	3	10
2012	Spring	SOCR725 - Quantitative Inheritance in Plant Breeding - Lab	0	10
2012	Spring	SOCR699 - Thesis	18	11

2011	Fall	SOCR799 - Dissertation	18	12
2011	Fall	SOCR796 - Group Study	18	4
2011	Fall	SOCR795 - Independent Study	18	4
2011	Fall	SOCR581A2 - Plant Breeding for Drought Tolerance	1	3
2011	Fall	SOCR581A2 - Plant Breeding for Drought Tolerance	1	0
2011	Fall	SOCR581A2 - Plant Breeding for Drought Tolerance	1	20
2011	Fall	SOCR784 - Supervised College Teaching	18	5
2011	Fall	SOCR699 - Thesis	18	9
2011	Spring	SOCR430 - Applications of Plant Biotechnology	3	13
2011	Spring	SOCR799 - Dissertation	18	9
2011	Spring	SOCR486 - Practicum	4	1
2011	Spring	SOCR792 - Seminar	1	6
2011	Spring	SOCR784 - Supervised College Teaching	18	6
2011	Spring	SOCR699 - Thesis	18	13
2010	Fall	SOCR799 - Dissertation	18	12
2010	Fall	SOCR475 - Global Challenges in Plant and Soil Science	3	10
2010	Fall	SOCR486 - Practicum	4	2
2010	Fall	SOCR792 - Seminar	1	8
2010	Fall	SOCR699 - Thesis	18	9
2010	Summer	SOCR796 - Group Study	18	0
2010	Summer	SOCR796 - Group Study: Plant Breeding for Drought Tolerance	3	17
2010	Summer	SOCR796 - Group Study: Plant Breeding for Drought Tolerance (International)	3	9
2010	Spring	SOCR799 - Dissertation	18	7
2010	Spring	SOCR495 - Independent Study	18	7
2010	Spring	SOCR486 - Practicum	4	4
2010	Spring	SOCR725 - Quantitative Inheritance in Plant Breeding	3	7
2010	Spring	SOCR725 - Quantitative Inheritance in Plant Breeding - Lab	0	7
2010	Spring	SOCR699 - Thesis	18	10
2009	Fall	SOCR799 - Dissertation	18	9
2009	Fall	SOCR699 - Thesis	18	9
2009	Spring	SOCR430 - Applications of Plant Biotechnology	3	8
2009	Spring	SOCR796 - Group Study	18	14
2009	Spring	SOCR699 - Thesis	18	7
2008	Fall	SOCR796 - Group Study	18	5
2008	Summer	SOCR699 - Thesis	18	1
2008	Spring	SOCR799 - Dissertation	18	14
2008	Spring	SOCR796 - Group Study	18	10
2008	Spring	SOCR725 - Quantitative Inheritance in Plant Breeding	3	5
2008	Spring	SOCR725 - Quantitative Inheritance in Plant Breeding-Lab	0	5
2008	Spring	SOCR784 - Supervised College Teaching	18	2
2008	Spring	SOCR699 - Thesis	18	7
2008	Spring	AGRI270 - World Interdependence-Population and Food (GT-SS3)	3	26
2008	Spring	IE270 - World Interdependence-Population and Food (GT-SS3)	3	30
2007	Fall	ERHS220 - Environmental Health	3	31
2007	Fall	SOCR486 - Practicum	4	3
2007	Fall	SOCR699 - Thesis	18	7
2007	Fall	SOCR730 - Topics in Plant Breeding and Genetics	1	7

### Guest Lectures:

<u>Year</u>	<u>Semester</u>	<u>Course No./Title</u>	<u># of Guest Lectures</u>	<u>Delivery Mode</u>
2015	Fall	FSHN500 - Food Systems, Nutrition, and Food Security	1	Face to Face
2015	Fall	AGRI300/500 - Issues in Agriculture	1	Face to Face
2015	Spring	FTEC572 - Food Biotechnology	2	Face to Face
2015	Spring	BZ441 - Plant Physiology Laboratory	1	Face to Face
2015	Spring	Plants and Society (CU-Boulder)	1	Face to Face
2014	Fall	SOCR100 - General Crops	1	Face to Face
2014	Fall	AGRI300 - Issues in Agriculture	1	Face to Face
2014	Fall	SOCR650 - Research Proposal Development	1	Face to Face
2014	Summer	INTO 300-level English as a Second Language		Face to Face
2014	Spring	SOCR424 - Topics in Organic Agriculture	1	Face to Face
2013	Fall	FSHN500 - Food Systems, Nutrition, and Food Security		
2013	Fall	SOCR100 - General Crops		
2013	Fall	AGRI300 - Issues in Agriculture		
2013	Fall	SOCR650 - Research Proposal and Development		
2013	Fall	SOC321 - Soil, Environment, and Society		
2013	Fall	SOCR730 - Topics in plant breeding and genetics		

## **EXTENSION/ENGAGEMENT ACTIVITIES/ACCOMPLISHMENTS**

### **GM Crop Interviews**

Multiple interviews on GM crops. Percent Responsible: 100%. 2013.

### **GM crop interviews with news media**

Multiple interviews with multiple news media outlets, including Fort Collins Coloradoan, Forbes Magazine, Fox News/Denver, and KCOL radio. Percent Responsible: 100%. 2014.

### **GM crop interviews with students**

Multiple interviews with college and K-12 students on GM crops. Youth. Percent Responsible: 100%. 2014.

### **Presentation**

GM Crops. Adult, Denver. Total number of participants: 25. Percent Responsible: 100%. 2014.

GM Crops. Adult, Steamboat Springs, CO. Percent Responsible: 100%. 2014.

Genetically Engineered Crops: Methods, Applications, & Concerns. Percent Responsible: 100%. 2013.

Genetically Engineered Crops: Methods, Applications, Environmental Issues, and Food Safety. Fort Collins, CO. Percent Responsible: 100%. 2013.

Genetically Engineered Plants with a Focus on Horticulture. Fort Collins, CO. Percent Responsible: 100%. 2013.

Genetically Engineered Crops: Environmental and Food Safety Issues. Pueblo, CO. Percent Responsible: 100%. 2013.

Update on Genetically Engineered Crops. Sterling, CO. Percent Responsible: 100%. 2013.

### **Televised panel discussion on GM crops**

GMO Crops in Our Food Supply. Adult, Fort Collins. Percent Responsible: 25%. 2014.

## **COMMITTEES**

Institutional Biosafety Committee, (August 2012 - July 2018).

Biofuels campus tour, (April 17, 2014).

Member, CSU delegation to Saratov University, Russia, (2010).

Search Committee, ARDEC Plant Science Coordinator, (2015 - 2016).

College of Agricultural Sciences' Fulbright Faculty Advisor, (2014 - 2016).

Search Committee, BSPM Applied Plant Physiology/Biochemistry, (2015).

College of Agricultural Sciences, Director of Communications, (September 2015).

Plant Breeding Coordinating Committee, (July 27, 2015 - July 30, 2015).

College of Agricultural Sciences task force on Crops for Health for the strategic plan, (2010 - 2011).

AGEP Faculty Advisory Group, (2008 - Present).

Resident Instruction Panel, (January 2016 - December 2019).

ARDEC tour for administrative staff, (2015).

Reviewer, AES Technical Report, (2015).

14er trip, (2000 - 2015).

Cargill seminar, Hosted Pedro Andrade-Sanchez, Univ. of Arizona, (October 14, 2015 - October 16, 2015).

Seminar by Wallace Cowling, Univ, of Western Australia, (July 14, 2015).

Crop Functional Genomics Search Committee, (September 1, 2014 - May 1, 2015).

Cargill seminar, Hosted Rex Bernardo, (October 8, 2014 - October 9, 2014).

Cargill Seminar, Hosted Scot Hulbert, (October 3, 2013 - October 4, 2013).

Chair, Graduate Studies Panel, (2005 - 2012).

Member, Administrative Council, (2005 - 2012).

## **PROFESSIONAL AFFILIATIONS AND ACTIVITIES**

American Society for the Advancement of Science.

American Society of Agronomy.

Crop Science Society of America.

National Association of Plant Breeders.

Plant Breeding Coordinating Committee.

Sigma Xi.

American Society of Agronomy.

Chair, Graduate Studies Panel.

Member, College of Agricultural Sciences task force on Crops for Health for the strategic plan.

Crop Science.

Editor, Associate Editor, Crop Science.

CSU, Fort Collins, CO.

CSU Conference Services, Fort Collins, CO.

CSU TILT, Fort Collins, CO.

CSU TILT, Fort Collins, CO.

CSU TILT, Fort Collins, CO.

Departmental seminar, spring 2011.

Dept of Bioagricultural Sciences and Pest Management.

Dept. of Plant Sciences and Plant Pathology, Montana State University.

Field Crops Research.

Member, Institutional Biosafety Committee.

Journal of Cereal Science.

Journal of Experimental Botany.

Journal of Experimental Botany.

Louisiana State University.

Member, Administrative Council.

Molecular Breeding.

Molecular Breeding.

National Association of Plant Breeders, College Station, TX.

Committee Chair, National Association of Plant Breeders.

Reviewer, Ad Hoc Reviewer, National Science Foundation.

New Phytologist.

Organized field day at ARDEC for 15 employees of Cargill Specialty Canola Oils, July 21.

Member, Planning committee, CSU International Colloquium on China.

Plant Genome.

Responsible Conduct of Research/Ethics Committee.

Sigma Xi.

Soil and Crop Sciences, Texas A&M.

Theoretical and Applied Genetics.

Theoretical and Applied Genetics.

Reviewer, Ad Hoc Reviewer, University of Adelaide, Australia, M.S. thesis.

University of Idaho.

USDA-ARS manuscript review.

Task Force Member, International Wheat Initiative. (2015 - Present).

Member, Drought Advisory Council, Dupont Pioneer. (2011 - Present).

American Association for the Advancement of Science. (1995 - Present).

Conference-Related, American Association for the Advancement of Science. (2015 - 2016).

Reviewer, Journal Article, Manuscript review, various journals. (2015).

Chairperson, Plant Breeding Coordinating Committee. (2015).

Reviewer, P & T Dossier, Promotion & Tenure Reviewer, Texas A&M. (2015).

Reviewer, Grant Proposal, Proposal review, various agencies. (2015).

Reviewer, Journal Article, Agronomy Journal. (2014).

Reviewer, Grant Proposal, Binational Agricultural Research and Development Fund. (2014).

Reviewer, Journal Article, BMC Plant Biology. (2014).

Reviewer, Journal Article, Crop Science. (2014).

Reviewer, Journal Article, Journal of American Oil Chemists. (2014).

Reviewer, P & T Dossier, Stellenbosch University, Stellenbosch, South Africa. (2014).

Committee Chair, Plant Breeding Coordinating Committee. (August 10, 2014).



Reviewer, P & T Dossier, USDA-ARS Water Management Research Unit. (April 2014).

Committee Member, USDA-ARS Water Management Research Unit Search Committee. (September 2013 - February 2014).

Grant proposal review. (2013).

Manuscript review, various journals. (2013).

USDA-ARS case review. (2013).

Crop Science Society of America Session Chair. (2011).

Member, Algal Biology Search Committee, CSU Dept. of Biology. (2010 - 2011).

### **OTHER ACTIVITIES/ACCOMPLISHMENTS – SERVICE/OUTREACH**

Academic, Australian Centre for International Agricultural Research, Yangling, China. (May 12, 2013 - June 15, 2013).

Past Chair, Plant Breeding Coordinating Committee. (August 11, 2014 - Present).

Reviewer, Dissertation review. (2015).

Presenter, National Onion Association, Boise, Idaho. (July 16, 2015).

Invited presentation, Front Range Community College, Westminster, CO, Westminster, CO. (April 10, 2015).

Invited presentation, University of Saskatchewan, Saskatoon, SK. (March 24, 2015).

Ag in the Classroom.

Boulder County Commissioners.

Boulder Daily Camera.

Channel 8 TV, Boulder.

Colorado Public Television.

Denver Museum of Science and Nature.

Edible Front Range.

Food and Farm Internet radio.

KGNU Radio, Boulder.

Middle school, high school, and college students.

Progressive Farmer magazine.

Interviewee, Students. (January 2015 - December 2015).

Guest Speaker, CSU Alumni Association. (May 12, 2015).

Interviewee, Students. (2012).

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