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EDUCATION

University of Wisconsin – Madison, Madison, Wisconsin

Doctor of Philosophy, September 26, 2000

Master of Science, December 23, 1998

Major: **Plant Breeding and Plant Genetics**

Iowa State University, Ames, Iowa

Bachelor of Science, May 14, 1994

Major: **Biology** Minor: **Environmental Studies**

RESEARCH EXPERIENCE

University of Idaho, Department of Plant, Soil, & Entomological Sciences, Moscow, ID

Assistant Professor of Plant Molecular Biology, February 2009 - present

- Develop and conduct research in plant molecular genetics, including genetic characterization, gene identification, elucidation of molecular mechanism, biochemical function and genomic evaluation, directed at traits of importance to Idaho crops.

United States Department of Agriculture, Agricultural Research Service, Subarctic Agricultural Research Unit, Palmer, AK

Research Geneticist (Plants), GS-404-12, May 2005 – January 2009

- Determine genetic diversity among rhubarb culinary cultivars using AFLPs, initiate crossing studies to self- and cross-pollinate rhubarb cultivars.
- Evaluate *Deschampsia* species from across northern North America, collect molecular and morphological data from herbarium specimens, sequence chloroplast and nuclear regions for phylogenetic analysis.
- Evaluate the production potential of potato sprouts, determine the effect of increasing physiological age on potatoes seed in Alaska, and evaluate phytonutrient composition of potatoes across a latitudinal gradient.

Michigan State University, East Lansing, MI

Postdoctoral Associate, October 2004 – April 2005

- Differentiate potato cultivars and breeding lines based on late blight resistance evaluations using multiple *Phytophthora infestans* isolates
- Molecular characterization of transgenic potato lines
- Linkage analysis of late blight resistance loci in diploid and tetraploid potato populations

PUBLICATIONS

Haung, W., M. Miao, J. Kud, X. Niu, B. Ouyang, J. Zhang, Z. Ye, J.C. Kuhl, Y. Liu, and F. Xiao. 2013. *SNAC1*, a stress-related transcription factor, is fine-tuned on both transcriptional and post-translational levels. *New Phytologist*. Accepted.

Takeoka, G.R., L. Dao, L. Harden, A. Pantoja, and J.C. Kuhl. 2013. Antioxidant activity, phenolic and anthocyanin contents of various rhubarb (*Rheum* spp.) varieties. *International Journal of Food*

- Science and Technology. 48:172-178.
- Payyavula, R.S., D.A. Navarre, J.C. Kuhl, A. Pantoja, and S.S. Pillai. 2012. Differential effects of environment on potato phenylpropanoid and carotenoid expression. *BMC Plant Biology*. 12:1-17
- Du, X., M. Miao, X. Ma, Y. Liu, J.C. Kuhl, G.B. Martin, and F. Xiao. 2012. Plant programmed cell death caused by an autoactive form of Prf is suppressed by co-expression of the Prf LRR domain. *Molecular Plant*. Accepted.
- Chiapella, J.O., V.L. DeBoer, G. Amico and J.C. Kuhl. 2011. A morphological and molecular study in the *Deschampsia cespitosa* (Poaceae: Poaceae: Airinae) complex in Arctic North America. *American Journal of Botany* 98:1366-1380.
- Kuhl, J.C. 2011. Mapping and Tagging of Simply Inherited Traits. In: Bradeen J.M. and K. Chittaranjan (eds) *Genetics, Genomics, and Breeding of Potato*. CRC Press. pp 90-112.
- Pantoja, A., A.M. Hagerty, S.Y. Emmert, J.C. Kuhl, K. Pike, J.M. Alvarez, and A. Jensen. 2010. Aphids (Hemiptera: Aphididae) associated with rhubarb in the Matanuska Valley, Alaska: Species composition, seasonal abundance, and potential virus vectors. *Journal of the Entomological Society of British Columbia*. 107:75-81.
- Seefeldt, S.S., W.B. Collins, J.C. Kuhl and M. Clauss. 2010. White sweetclover and narrowleaf hawksbeard seed viability after passing through moose. *Invasive Plant Science Management*. 3:26-31.
- Pantoja, A. and J.C. Kuhl. 2008. Morphologic variation in the USDA/ARS rhubarb germplasm collection. *Plant Genetic Resources*. 8:35-41.
- Kuhl, J.C. and V.L. DeBoer. 2008. Genetic diversity of rhubarb cultivars. *Journal of the American Society of Horticultural Sciences*. 133:587-592.
- Kang, H.G., J.C. Kuhl, P. Kachroo, and D.F. Klessig. 2008. CRT1, an *Arabidopsis* ATPase that interacts with diverse resistance proteins and modulates disease resistance to turnip crinkle virus. *Cell Host & Microbe*. 3:48-57.
- Kuhl, J.C., K. Zarka, J. Coombs, W.W. Kirk, and D.S. Douches. 2007. Late blight resistance of *RB* transgenic potato lines. *Journal of the American Society of Horticultural Sciences*. 132:783-789.
- Kuhl, J.C., M.J. Havey, W. Martin, F. Cheung, Q. Yuan, J. Leebens-Mack, C.D. Town, and K.C. Sink. 2005. Comparative genomic analyses in *Asparagus*. *Genome*. 48:1052-1060.
- Martin, W., J. McCallum, M. Shigyo, J. Jakse, J.C. Kuhl, Y. Zewdie, N. Yamane, M. Jenderek, J.P. Prince, K.C. Sink, C.D. Town, and M.J. Havey. 2005. Genetic mapping of expressed sequences in onion reveal a collinear region with garlic, but *in silico* comparisons show scant collinearity with rice. *Molecular Genetics and Genomics*. 274:197-204.
- Kuhl, J.C., F. Cheung, Q. Yuan, W. Martin, Y. Zewdie, J. McCallum, A. Catanach, P. Rutherford, K.C. Sink, M. Jenderek, J.P. Prince, C.D. Town, and M.J. Havey. 2004. Unique set of 11,008 onion (*Allium cepa*) ESTs reveals expressed sequence and genomic differences between monocot orders Asparagales and Poales. *Plant Cell*. 16:114-125.
- Kuhl, J.C., M.J. Havey, and R.E. Hanneman, Jr. 2002. Genetic characterization of unilateral incompatibility between diploid (1EBN) Mexican species *Solanum pinnatisectum* and *S. cardiophyllum* subsp. *cardiophyllum*. *Sexual Plant Reproduction*. 14:305-313.
- Kuhl, J.C., R.E. Hanneman, Jr., and M.J. Havey. 2001. Characterization and mapping of *Rpi1*, a late blight resistance locus from diploid (1EBN) Mexican *Solanum pinnatisectum*. *Molecular Genetics and Genomics*. 265:977-985.
- Anderson, O.D., J.C. Kuhl, and A. Tam. 1996. Construction and expression of a synthetic wheat storage protein gene. *Gene*. 174:51-58.

PRESENTATIONS AND POSTERS

- Kuhl, J.C., and F. Xiao. Modification of potato NAC1 transcription factor for improved tolerance to drought, salinity and disease in potato. 96th Annual Meeting of the Potato Association of America, August 14-18, 2012.
- Kuhl, J.C., R.G. Novy, and J.L. Whitworth. Genetic Characterization of the *Rlretb* locus in two backcross 4 families. 95rd Annual Meeting of the Potato Association of America. August 14-18, 2011.

Worapong, J., T. Johnson, X. Gao, J.C. Kuhl, C. Bates, J.B. Johnson and R.S. Zemetra. Identification of five fungal species isolated from non-viable eggs of a single *Globodera pallida* cyst based on a polyphasic approach. Corvallis, Oregon. 50th Society of Nematologists. July 17-21, 2011:

Ellison, M., J.C. Kuhl, and R.S. Zemetra. Use of Pyrosequencing Technology to Genotype Imidazolinone-Tolerant Wheat. Idaho Falls, Idaho. Western Wheat Workers meeting. June 28-29, 2011.

Kuhl, J.C., A.J. Pantoja, J. Smeenk, and W.L. Campbell. Field and greenhouse performance of potato sprouts in Alaska. 93rd Annual Meeting of the Potato Association of America. August 9-13, 2009.

Kuhl, J.C., A.J. Pantoja, J. Smeenk, and W.L. Campbell. Field and greenhouse performance of potato sprouts. 92nd Annual Meeting of The Potato Association of America. August 10-14, 2008.

Kuhl, J.C. Genetic Diversity of rhubarb cultivars and wild *Rheum* accessions. Plant & Animal Genome XV Conference. January 13-17, 2007.

Kuhl, J.C. and D. S. Douches. Characterization of *RB* transgenic potato lines. 90th Annual Meeting of the Potato Association of America. July 23-27, 2006.

Hong-Gu K., J.C. Kuhl, and D.F. Klessig. 2006. A novel ATPase family in *Arabidopsis* is involved in regulating defense responses to pathogens. Plant Biology 2006. August 5-9, 2006.

Kuhl, J.C., F. Cheung, Q. Yuan, W. Martin, Y. Zewdie, J. McCallum, A. Catanach, P. Rutherford, K.C. Sink, M. Jenderek, J.P. Prince, C.D. Town, and M.J. Havey. Unique set of 11,008 onion (*Allium cepa*) ESTs reveals expressed sequence and genomic differences between monocot orders Asparagales and Poales. Plant & Animal Genome XII Conference, January 10-14, 2004.

Kuhl, J.C., R.E. Hanneman, Jr. and M.J. Havey. Genetic and molecular characterization of late blight resistance in a 2x(1EBN) Mexican species, *Solanum Pinnatisectum*. 84th Annual Meeting of the PAA, July 23-27, 2000.

Kuhl, J.C., R.E. Hanneman, Jr. and M.J. Havey. Identification of a novel locus for late blight resistance in 2x(1EBN) Mexican *Solanum* species. Plant & Animal Genome VIII Conference, January 9-12, 2000.

Kuhl, J.C., R.E. Hanneman, Jr. and M.J. Havey. Resistance to *Phytophthora infestans* in diploid *Solanum* species of Central and South America. 83th Annual Meeting of the PAA, August 1-6, 1999.

Kuhl, J.C., R.E. Hanneman, Jr. and M.J. Havey. Evaluation of resistance to *Phytophthora infestans* in Mexican 2x(1EBN) wild potato species, NCR-84, December 6-7, 1999.

Kuhl, J.C., R.E. Hanneman, Jr. and M.J. Havey. Investigation of resistance to *Phytophthora infestans* in Mexican 2x(1EBN) wild potato species. 82nd Annual Meeting of the PAA, July 26-30, 1998.

Kuhl, J.C., R.E. Hanneman, Jr. and M.J. Havey. Evaluation of resistance to *Phytophthora infestans* in Mexican 2x(1EBN) wild potato species, NCR-84, December 7-8, 1998.

Kuhl, J.C., R.E. Hanneman, Jr. and M.J. Havey. Resistance to *Phytophthora infestans* in Mexican 2x(1EBN) wild potato species, NCR-84, December 8-9, 1997.

HONORS

- 2000 Outstanding Graduate Student Award by the National Council of Commercial Plant Breeders
- 1998 National Potato Council Auxiliary Scholarship
- Gamma Sigma Delta – Honor Society of Agriculture
- Phi Kappa Phi National Honor Society

Professional Membership

- American Association for the Advancement of Science: 1999-present
- American Society for Horticultural Science: 2007-present
- Potato Association of America: 1997-present