

CURRICULUM VITAE

Kevin M. Murphy

Assistant Professor

Department of Crop and Soil Sciences

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EDUCATION

2007: Ph.D., Plant Breeding and Genetics, Washington State University

2004: M.S., Crop Science, Washington State University

1994: B.S., Biology, Colorado College

RELATED WORK EXPERIENCE

Assistant Professor (August 2013 – Present) Dept. of Crop and Soil Sciences, Washington State University, Pullman, WA. 75% Research/25% Teaching.

Assistant Research Professor/Clinical Assistant Professor (December 2009 – July 2013) Dept. of Crop and Soil Sciences, Washington State University, Pullman, WA. 50% Research/50% Teaching.

Post-doctoral Faculty (May 2007 – November 2009) Dept. of Crop and Soil Sciences, Washington State University, Pullman, WA.

Research Assistant, M.S. and Ph.D. Student (August 2002 – May 2007) Dept. of Crop and Soil Science, Washington State University, Pullman, WA. Dr. Stephen Jones, Thesis and Dissertation Advisor.

PUBLICATIONS AND CREATIVE SCHOLARSHIP

PROFESSIONAL ARTICLES, REFEREED (37 total)

H-index = 13; iH-index = 13 (accessed from Google Scholar, June 19, 2016). Senior authorship indicated by an “*” to denote authorship by my graduate students. “†” Denotes authorship of articles that began during my post-doc research and were completed while an Assistant Research/Clinical Professor.

2015 Impact factor (IF) is reported. Total Citations = 904; Citations from Google Scholar, June 19, 2016. Footnotes: 1) Developed the initial idea; 2) Obtained or provided funds/resources; 3) Collected data; 4) Analyzed data; 5) Wrote/created product; and, 6) Edited product.

Walters, H., L. Carpenter-Boggs, K. Desta, L. Yan, G.J. Matanguihan, **K. Murphy*** (2016). Effect of irrigation, intercrop and cultivar on agronomic and nutritional characteristics of quinoa. *Agroecology and Sustainable Food Systems* (in press). IF= 0.719. **(1,2,3,4,6)**

Murphy, K., D. Bazile, I. Goldringer, M. Rahmanian (2016). Development of a worldwide consortium on evolutionary participatory breeding in quinoa. *Frontiers in Plant Science* 7: 608. IF=3.948. Cited 1 time. **(1,2,3,4,5,6)**

Brouwer, B.O., P.B. Schwarz, J.M. Barr, P.M. Hayes, **K. Murphy**, S.S. Jones (2016). Evaluating barley for the emerging craft malting industry in western Washington. Submitted to: *Agronomy Journal* 108: 1-11. IF=1.441. **(3,6)**

Wu, G., A.J. Peterson, C.F. Morris, **K. Murphy*** (2016). Quinoa seed quality response to sodium chloride and sodium sulfate salinity. *Frontiers in Plant Science* 7: 790. IF=3.948. **(1,2,6)**

Kowalski, R.J., I.G. Medina-Meza, B.B. Thapa, **K. Murphy**, G.M. Ganjyal (2016). Extrusion processing characteristics of quinoa (*Chenopodium quinoa* Willd.) var. Cherry Vanilla. *Journal of Cereal Science* 70: 91-98. IF=2.402. **(2,6)**

Vico, G., S. Manzoni, L. Nkurunziza, **K. Murphy**, M. Weih (2016). Trade-offs between seed output and life span – a quantitative comparison of traits between annual and perennial congeneric species. *New Phytologist* 209: 104-114. IF=7.21. Cited 1 time. **(3,4,5,6)**

Brouwer, B.O., **K. Murphy**, S.S. Jones (2016). Plant breeding for local food systems: A contextual review of end-use selection for small grains and dry beans in Western Washington. *Renewable Agriculture and Food Systems* 31: 172-184. Cited 1 time. IF=1.435. **(3,6)**

Murphy, K., S.E. Ullrich, M.B. Wood, J.B. Matanguihan, V.A. Jitkov, S.O. Guy, X. Chen, B.O. Brouwer, S.R. Lyon, S.S. Jones (2015). Registration of ‘Muir’ spring feed barley. *Journal of Plant Registrations* 9:283-287. IF=0.64. **(1,2,3,4,5,6)**

Meints, B., A. Cuesta-Marcos, A.S. Ross, S. Fisk, T. Kongraksawech, J. Marshall, **K. Murphy**, P.M. Hayes (2015). Developing winter food barley for the Pacific Northwest of the U.S. *Crop Science* 55:1563-1573. IF=1.575. Cited 1 time. **(3,6)**

- Peterson, A.J., S.-E. Jacobsen, A. Bonifacio, **K. Murphy*** (2015). A crossing method for quinoa (*Chenopodium quinoa*). *Sustainability* 7: 3230-3243. IF=1.343. Cited 3 times. **(1,2,3,4,5,6)**
- Meints, B., A. Cuesta-Marcos, S. Fisk, A.S. Ross, **K. Murphy**, P.M. Hayes (2015). Registration of ‘#STRKR’ barley germplasm. *Journal of Plant Registrations* 9:388-392. IF=0.64. Cited 1 time. **(3,6)**
- Peterson, A. and **K. Murphy*** (2015). Tolerance of lowland quinoa cultivars to sodium chloride and sodium sulfate salinity. *Crop Science* 55: 331-338. IF=1.575. Cited 6 times. **(1,2,4,6)**
- Murphy, K.**, S. Ullrich, M. Wood, J. Matanguihan, S. Guy, V Jitkov, X. Chen (2015). Registration of ‘Lyon’, a two-row, spring feed barley. *Journal of Plant Registrations* 9:6-9. IF=0.64. Cited 1 time. **(1,2,3,4,5,6)**
- Wu, G., **K. Murphy**, C. Morris (2014). Evaluation of texture differences among varieties of cooked quinoa. *Journal of Food Science* 79(11): S2337-S2345. IF=1.649. Cited 7 times. **(1,2,6)**
- Rustgi, S.[†], J. Matanguihan[†], J. Mejias, R.A. Brew-Appiah, N. Wen, C. Osorio, N. Ankrah, **K. Murphy**, D. von Wettstein (2014). Assessment of genetic diversity among barley cultivars and breeding lines adapted to the US Pacific Northwest, and its implications in barley breeding for imidazoline-resistance. *PLoS ONE* 9(6):e100998. IF=3.234. Cited 3 times. **(1,2,6)**
[†]These authors contributed equally to this work
- Lu, L., **K. Murphy**, B.-K. Baik (2013). Genotypic variation in nutritional composition of buckwheat groats and husks. *Cereal Chemistry* 90: 132-137. IF=2.402. Cited 7 times. **(1,2,6)**
- Abi-Ghanem, R., L. Carpenter-Boggs, R.T. Koenig, J.L. Ullman, **K. Murphy**, C.D. Pannkuk (2013). Access to agricultural inputs, technology and information, communicating with farmers, and the role of women in agriculture: Perceptions of Iraq extension agents. *Journal of International Agricultural and Extension Education* 20: 6-18. IF=NA. Cited 2 times. **(3,6)**
- Jakumar, N., S. Snapp, S., **K. Murphy**[†], S.S. Jones (2012). Agronomic assessment of perennial wheat and perennial rye as cereal crops. *Agronomy Journal* 104: 1716-1726. IF=1.441. Cited 16 times. **(2,6)**
- Hayes, R.C., M.T. Newell, L.R. DeHaan, **K. Murphy**[†], S. Crane, M.R. Norton, L.J. Wade, M. Newberry, M. Fahim, S.S. Jones, T.S. Cox, P.J. Larkin (2012). Perennial cereal crops: An initial evaluation of wheat derivatives. *Field Crops Research* 133: 68-89. IF=2.927. Cited 36 times. **(2,6)**

- Murphy, K.**[†], L.A. Hoagland, L. Yan, M. Colley, S.S. Jones (2011). Genotype × environment interactions for mineral concentration in grain of organically grown spring wheat. *Agronomy Journal* 103: 1734-1741. IF=1.441. Cited 7 times. **(1,2,3,4,5,6)**
- Döring, T.F., S. Knapp, G. Kovacs, **K. Murphy**, M.S. Wolfe (2011). Evolutionary plant breeding in cereals – Into a new era. *Sustainability* 3: 1944-1971. IF=1.343. Cited 49 times. **(1,5,6)**
- Turner, S.F., C.A. Benedict, H. Darby, L. Hoagland, P. Simonson, J.R. Serrine, **K. Murphy*** (2011). Challenges and opportunities for organic hop production in the United States. *Agronomy Journal* 103: 1645-1654. IF=1.441. Cited 4 times. **(1,2,5,6)**
- Dawson, J.C., **K. Murphy**[†], D.R. Huggins, S.S. Jones (2011). Evaluation of winter wheat breeding lines for traits related to nitrogen use under organic management. *Organic Agriculture* 1: 65-80. IF=0.50. Cited 6 times. **(4,6)**
- Matanguihan, G.J.B., **K. Murphy**[†], S.S. Jones (2011). Control of common bunt in organic wheat. *Plant Disease* 95: 92-103. IF=3.02. Cited 16 times. **(2,6)**
- Lammerts van Bueren[†] E.T., S.S. Jones, L. Tamm, **K. Murphy**, J.R. Myers, C. Leifert, M.M. Messmer (2011). The need to breed crop varieties suitable for organic farming using wheat, tomato and broccoli as examples: A review. *NJAS - Wageningen Journal of Life Sciences* 58: 193-205. IF=0.635. Cited 102 times. **(5,6)**
- Murphy, K.**[†], S.R. Lyon, K.A. Balow, S.S. Jones (2010). Post-sexual cycle regrowth and grain yield in *Thinopyrum elongatum* x *Triticum aestivum* amphiploids. *Plant Breeding* 129: 480-483. IF=1.502. Cited 15 times. **(1,3,4,5)**
- Jones, S.S., S.R. Lyon, K.A. Balow, M.A. Gollnick, **K. Murphy**, J. Kuehner, X.M. Chen, T.D. Murray, D.A. Engle, and K.G. Campbell (2010). Registration of ‘Xerpha’ wheat. *Journal of Plant Registrations* 4:137-140. IF=0.64. Cited 6 times. **(3,6)**
- Murphy, K.**, L. Hoagland, P.G. Reeves, B. Baik, S.S. Jones (2009). Nutritional and quality characteristics expressed in 31 perennial wheat breeding lines. *Renewable Agriculture and Food Systems* 24: 285-292. IF=1.435. Cited 20 times. **(1,3,4,5)**
- Thapa, D.B., A. Mudwari, R.K. Basnet, S. Sharma, G. Ortiz-Ferrara, B. Sharma, **K. Murphy** (2009). Participatory varietal selection of wheat for micro-niches of Kathmandu valley. *Journal of Sustainable Agriculture* 33: 745-756. IF=1.372. Cited 3 times. **(4,6)**
- Murphy, K.**, K. Balow, S. Lyon, S.S. Jones (2008). Estimated response to selection, combining ability and heritability of coleoptile length in winter wheat. *Euphytica*:

- The International Journal of Plant Breeding* 164: 709-718. IF=1.618. Cited 18 times. **(1,3,4,5)**
- Murphy, K.**, P.R. Reeves, S.S. Jones (2008). Relationship between yield and mineral nutrient concentration in historical and modern spring wheat cultivars. *Euphytica: The International Journal of Plant Breeding* 163: 381-390. IF=1.618. Cited 87 times. **(1,3,4,5)**
- Murphy, K.**, J.C. Dawson, S.S. Jones (2008). Relationship among phenotypic growth traits, yield and weed suppression in spring wheat landraces and modern cultivars. *Field Crops Research* 105: 107-115. IF=2.927. Cited 64 times. **(1,3,4,5)**
- Dawson, J.C., **K. Murphy**, S.S. Jones (2008). Decentralized selection and participatory approaches in plant breeding for low-input systems. *Euphytica: The International Journal of Plant Breeding* 160: 143-154. IF=1.618. Cited 90 times. **(5,6)**
- Murphy, K.**, A. Carter, R.S. Zemetra, S.S. Jones (2007). Karyotype and ideogram analyses of four wheatgrass cultivars for use in perennial wheat breeding. *Journal of Sustainable Agriculture* 31(1): 137-149[±]. IF=1.372. Cited 9 times. **(1,3,4,5)**
[±]Journal name changed to *Agroecology and Sustainable Food Systems*.
- Murphy K.**, K.G. Campbell, S. Lyon, S.S. Jones (2007). Evidence for varietal adaptation to organic farming systems. *Field Crops Research* 102: 172-177. IF=2.927. Cited 194 times. **(1,3,4,6)**
- Jones, S.S., S.R. Lyon, K.A. Balow, M.A. Gollnick, **K. Murphy**, T.D. Murray, X.M. Chen, K.G. Campbell, J.W. Burns, W.F. Schillinger, P.E. Reisenauer, B.J. Goates (2007). Registration of ‘MDM’ wheat. *Journal of Plant Registrations* 1: 104-106. IF=0.64. Cited 3 times. **(3,6)**
- Murphy K.**, D. Lammer, S. Lyon, B. Carter, S.S. Jones (2005). Breeding for organic and low-input farming systems: An evolutionary–participatory breeding method for inbred cereal grains. *Renewable Agriculture and Food Systems* 20: 45-55. IF=1.435. Cited 101 times. **(4,5)**
- PROFESSIONAL ARTICLES, REFEREED (IN REVIEW) (5 total)**

Jarvis, D.E.[†], Y.S. Ho[†], D.J. Lightfoot[†], S.M. Schmöckel[†], B. Li[†], T. Borm, H. Ohyanagi, K. Mineta, C.T. Michell, N. Saber, N.M. Kharbatia, R.R. Rupper, A.R. Sharp, N. Dally, B. Boughton, Y.H. Woo, G. Gao, E. Schijlen, X. Guo, A.A. Momin, S. Negrão, S. Al-Babili, C. Gehring, U. Rössner, C. Jung, **K. Murphy**, S. Arold, T. Gojobori, G. van der Linden, R. van Loo, E.N. Jellen, P.J. Maughan, M. Tester (submitted June 2016, in review). The genome of *Chenopodium quinoa*. Submitted to *Nature*. IF=38.138. **(2,6)**

[†]These authors contributed equally to this work

Murphy, K. (submitted May 2016, in review). A quiet harvest: Linkage between ritual, seed selection and the historical use of the finger-bladed knife as a traditional plant breeding tool in Ifugao, Philippines. Submitted to *Journal of Ethnobiology and Ethnomedicine*. IF=2.414. **(1,2,3,4,5,6)**

Aluwi, N., B-J. Gu, G. Dhumal, I.G. Medina-Meza, **K. Murphy**, G. Ganjyal. (submitted April 2016, in review). Impacts of scarification and degermination on the expansion characteristics of select quinoa varieties during extrusion processing. Submitted to *Journal of Food Science*. IF=1.649. **(2,6)**

Curwen-McAdams, C., M. Arterburn, **K. Murphy**, X. Cai, S.S. Jones (submitted April 2015, in review). Toward a taxonomic definition of perennial wheat: A new species \times *Tritopyrum aaseae* described. Submitted to *Genetic Resources and Crop Evolution*. IF=1.258. **(6)**

Winkler, L., S.S. Jones, **K. Murphy*** (submitted January 2016, in final stages of review). The history of oats in western Washington and the role of regionality in agriculture. Submitted to *Journal of Rural Studies*. IF=2.768. **(6)**

BOOKS

Murphy, K., J.B. Matanguihan (eds.) (2015). *Quinoa: Improvement and Sustainable Production*, Wiley-Blackwell. Hoboken, New Jersey, USA. **(1,2,5,6)**

CHAPTERS IN BOOKS (5 total)

Peterson, A.J., **K. Murphy*** (2015). Quinoa Cultivation for Temperate North America: Considerations and Areas for Investigation, In: *Quinoa: Improvement and Sustainable Production*, K.M. Murphy and J.G. Matanguihan, (eds.), Wiley-Blackwell. Hoboken, New Jersey, USA. Cited 2 times. **(2,6)**

Peterson, A.J., **K. Murphy*** (2015). Quinoa in the USA and Canada, In: *The State of the World's Quinoa*, D. Bazile (ed.), Food and Agriculture Organization, Rome, Italy. **(2,6)**

Murphy, K., A.H. Carter, S.S. Jones (2013). Evolutionary Breeding and Climate Change, In: *Genomics and Breeding for Climate-Resilient Crops, Vol. 1 Concepts and Strategies*. C. Kole (ed.); Springer. Cited 2 times. **(1,3,4,5,6)**

Arterburn, M., **K. Murphy**, S.S. Jones (2012). Organic Wheat Breeding. In: *Organic Crop Breeding*, E.T. Lammerts van Bueren and J.R. Myers (eds.), Wiley-Blackwell. Hoboken, New Jersey, USA. Cited 3 times. **(3,4,5,6)**

Murphy, K., S.S. Jones (2007). Genetic assessment of the role of breeding wheat for organic systems. In: *Developments in Plant Breeding: Wheat Production in Stressed Environments*: H.T. Buck, J.E. Nisi and N. Salomon, eds; Springer, Netherlands. (3,4,5,6)

EXTENSION PUBLICATIONS

Miles, C., J. Roozen, S. S. Jones, **K. Murphy**, and X. Chen. (2009). Growing wheat in western Washington. *Washington State University Extension Publication EM022E*. <http://cru.cahe.wsu.edu/CEPublications/EM022E/EM022E.pdf>

EXTENSION PUBLICATIONS (IN REVIEW)

Kellogg, J., **K. Murphy** (submitted May 2016). Growing quinoa in home gardens. Submitted to *Washington State University Extension, Home Gardening Series*.

PROCEEDINGS (14 total)

Hinojosa, L., **K. Murphy** (2015). Situacion de la quinua en la region del pacific noroeste [Current situation of quinoa in the Pacific Northwest, USA]. 5th World Quinoa Congress, 2nd Global Symposium on Andean Grains, Jujuy, Argentina, May 29, 2015.

Murphy, K., D. Bazile, I. Goldringer, M. Rahmanian (2015). *Development of a worldwide consortium on evolutionary participatory breeding in quinoa*. European Association of Plant Breeding International Symposium on Protein Crops V. Pontevedra, Spain, May 5, 2015.

Murphy, K., A. Peterson, A. Carter, S.S. Jones (2014). *Breeding for diversity: A review of 10 years of evolutionary, participatory breeding, and a look ahead*. SOLIBAM Congress 2014: 'Diversity strategies for organic and low input agricultures and their food system', Nantes, France, July 8, 2014.

Noratto, G., R. Carrion-Rabanal, **K. Murphy**, G. Ganjyal, R. Kowalski (2014). Quinoa as a source of bioactive compounds with potential for intestinal health. *Experimental Biology Annual Meeting 2014*, San Diego, April 2014. *Abstract published in FASEB JOURNAL APR 2014*, 28:647.18. (IF = 5.704).

Brouwer, B., P. Hayes, P. Schwarz, **K. Murphy**, S. Lyon, S.S. Jones (2014). Breeding barley for organic production and craft malt in Western Washington. In *Organic Seed Growers Conference Proceedings*, Portland, Oregon, February 2014.

- Murphy, K.** (2012). Bringing agriculture into the ODeL environment: Challenges and Opportunities. *1st International Conference on Open and Distance e-Learning: Creating Spaces and Possibilities*. Manila, Philippines, February 22-24, 2012.
- Murphy, K.** (2010). *Breeding for genetic and market diversity: Examples from hops, quinoa and buckwheat*. EUCARPIA Low-input and Organic Plant Breeding Conference, Paris, France, December 2, 2010.
- Murphy, K., L. Hoagland, P. Reeves, S.S. Jones** (2008). Effect of cultivar and soil characteristics on nutritional value in organic and conventional wheat. In *Proceedings of the Second Scientific Conference of the International Society of Organic Agriculture Research: Volume 2 – Livestock, Socio-Economy, and Cross-Disciplinary Research in Organic Agriculture*. Daniel Neuhoff et al., eds; 18-20 June 2008, Modena, Italy; pp. 614-617.
- Hoagland, L., **K. Murphy**, L. Carpenter-Boggs, S.S. Jones (2008). Improving nutrient uptake in wheat through cultivar specific interaction with *Azospirillum*. In *Proceedings of the Second Scientific Conference of the International Society of Organic Agriculture Research: Volume 1 – Organic Crop Production*. Daniel Neuhoff et al., eds; 18-20 June 2008, Modena, Italy; pp. 562-565.
- Dawson, J., **K. Murphy**, S.S. Jones (2008). Breeding for nitrogen use efficiency in organic wheat systems. In *Proceedings of the Second Scientific Conference of the International Society of Organic Agriculture Research: Volume 1 – Organic Crop Production*. Daniel Neuhoff et al., eds; 18-20 June 2008, Modena, Italy; pp. 684-687.
- Murphy, K., L. Hoagland, J. Dawson, S.S. Jones** (2008). Selecting, growing and marketing value-added wheat varieties in organic cropping rotations. In *Organic Seed Growers Conference Proceedings*, C. Miles, M. Colley and J. King, eds; February 14-15, 2008, Salem, Oregon. Organic Seed Alliance, Port Townsend, WA; 17-21.
- Hoagland, L., **K. Murphy**, L. Carpenter-Boggs, S.S. Jones (2008). Breeding winter wheat for association with nitrogen-fixing bacteria. In *Organic Seed Growers Conference Proceedings*, C. Miles, M. Colley and J. King, eds; February 14-15, 2008, Salem, Oregon. Organic Seed Alliance, Port Townsend, WA; pp. 97-100.
- Jones, S.S., **K. Murphy** (2008). Strategies for plant breeding in the public interest. In *Organic Seed Growers Conference Proceedings*, C. Miles, M. Colley and J. King, eds; February 14-15, 2008, Salem, Oregon. Organic Seed Alliance, Port Townsend, WA; pp. 67-68.
- Murphy, K., S.S. Jones** (2007). Genetic assessment of the role of breeding wheat for organic systems. In *Wheat Production in Stressed Environments: Proceedings of the 7th*

International Wheat Conference, H.T. Buck, J.E. Nisi and N. Salomon, eds; Springer; Mar del Plata, Argentina; pp. 217-222.

POPULAR PERIODICALS, NON-PEER REVIEWED (11 total)

Murphy, K. (2015). Brewing a new beer: Breeders focusing on malt barley varieties. *Wheat Life* 58: 64-65. July 2015.

http://www.wheatlife.org/Issues/07_WLJuly15web.pdf

Murphy, K. (2013). Barley's back, baby! *Wheat Life* 56: 65-67. October 2013.

http://www.wheatlife.org/Issues/9_WLOct13web.pdf

Murphy, K., S. Jones, C. Miles (2009). Wheat variety trials in Western Washington. *Tilth Producers Quarterly*, Spring, 2009.

Murphy, K. (2008). Seeking beneficial genetic diversity in the field: Breeding organic wheat to thrive across a variety of situations. *New Farm*, September 25, 2008.

<http://www.rodaleinstitute.org/20080926/gw1>

Murphy, K., S. Jones (2007). Nutritional value of spring wheat: A comparison of historical and modern varieties. WSU Extension Bulletin: *Sustaining the Pacific Northwest*, Vol. 5, no. 2, pp 7-8. <http://csanr.wsu.edu/whatsnew/SPNW-v5-n2.pdf#page=7>

Murphy, K., S. Jones (2006). Perennial wheat cropping systems in the Pacific Northwest. WSU Extension Bulletin: *Sustaining the Pacific Northwest*, Vol. 4, no.3, pp. 6-8.

<http://csanr.wsu.edu/whatsnew/SPNW-v4-n3.pdf#page=6>

Murphy, K., S. Lyon, S. Jones (2006). Low-input wheat breeding. *Wheat Life*, February, 2006. http://www.wheatlifemagazine.com/0206/pg58_0206.pdf

Lyon, S., S. Jones, K. Balow, M. Gollnick, J. Burns, **K. Murphy** (2004). Developing winter wheat varieties specifically for emergence from deep planting. *Wheat Life*, March 2004.

<http://www.wheatlifemagazine.com/0304/pg36-0304.pdf>

Murphy, K. and S. Jones (2003). WSU Trials historical wheat for organic conditions. *In Good Tilth*, Vol. 14, No. 1, p. 10.

Murphy, K. and S. Jones (2003). WSU Organic wheat breeding program. WSU Extension Bulletin: *Sustaining the Pacific Northwest*, Vol.1: 1, p.2.

<http://csanr.wsu.edu/whatsnew/PNW-v1-n1.pdf#page=2>

Jones, S. and **K. Murphy** (2003). WSU Organic and perennial wheat breeding program. *Tilth Producers Quarterly*, Spring 2003, p.21 <http://www.tilthproducers.org/tpqpdfs/63.pdf>

RESEARCH DISCOVERIES

PLANT VARIETIES / GERMPLASM RELEASED (6 total)

Footnotes: 1) Developed the initial idea; 2) Obtained or provided funds/resources; 3) Collected data; 4) Analyzed data; 5) Wrote/created product; and, 6) Edited product.

Murphy, K., S. Ullrich, M. Wood, J. Matanguihan, V Jitkov, X. Chen, R. Higginbotham, S. Guy, (release approved, manuscript in preparation). Registration of ‘Havener’, a two-row, hulless spring food barley. In preparation for *Journal of Plant Registrations*. **(1,2,3,4,5,6)**

Murphy, K., S.E. Ullrich, M.B. Wood, J.B. Matanguihan, V.A. Jitkov, S.O. Guy, X. Chen, B.O. Brouwer, S.R. Lyon, S.S. Jones (2015). Registration of ‘Muir’ spring feed barley. *Journal of Plant Registrations* 9:283-287. IF=0.62. **(1,2,3,4,5,6)**

Meints, B., A. Cuesta-Marcos, S. Fisk, A.S. Ross, **K. Murphy**, P.M. Hayes (2015). Registration of ‘#STRKR’ barley germplasm. *Journal of Plant Registrations* 9:388-392. IF=0.62. Cited 1 time. **(3,6)**

Murphy, K., S. Ullrich, M. Wood, J. Matanguihan, S. Guy, V Jitkov, X. Chen (2015). Registration of ‘Lyon’, a two-row, spring feed barley. *Journal of Plant Registrations* 9:6-9. IF=0.62. Cited 1 time. **(1,2,3,4,5,6)**

Jones, S.S., S.R. Lyon, K.A. Balow, M.A. Gollnick, **K. Murphy**, J. Kuehner, X.M. Chen, T.D. Murray, D.A. Engle, and K.G. Campbell (2010). Registration of ‘Xerpha’ wheat. *Journal of Plant Registrations* 4:137-140. IF=0.62. Cited 6 times. **(3,6)**

Jones, S.S., S.R. Lyon, K.A. Balow, M.A. Gollnick, **K. Murphy**, T.D. Murray, X.M. Chen, K.G. Campbell, J.W. Burns, W.F. Schillinger, P.E. Reisenauer, B.J. Goates (2007). Registration of ‘MDM’ wheat. *Journal of Plant Registrations* 1: 104-106. IF=0.62. Cited 4 times. **(3,6)**

GRANTS, CONTRACTS, EXTRAMURAL AWARDS

Total grant and contract dollars (*as PI, all funding included; as co-PI, only funding brought to my program included*): ~\$**6,305,977**

Total grant and contract dollars brought to my research program: ~\$**2,356,457**

Total federal funding (*as PI, all funding included; as co-PI, only funding brought to my program included*): ~\$**2,630,136**

Total WSU internal funding: ~\$**2,650,812**

Total Washington State Grain Commission funding: ~\$**618,601**

Total equipment grants: ~\$**40,500**

Footnotes: 1) Provided the initial idea; 2) Developed research design and hypotheses; 3) Authorship of grant application; 4) Developed and/or managed budget; 5) Managed personnel and project activities. Amount in bold at end of citation represents the amount of funds allocated to my program and for which I had responsibility).

As Principal Investigator:

Nutritional genomics and smart foods for optimal nutrition and health in diverse populations. WSU Grand Challenges. \$2,500,000. **Murphy, K.**, M. McGuire, G. Duncan, G. Palmer (2016-2021) **(1,2,3,4,5, \$TBD)**

Barley breeding for feed, food and malt. Washington Grain Commission. \$412,601. **Murphy, K.**, M. Wood, J.B. Matanguihan, S. Guy, X. Chen, D. See, S. Rustgi. (2014-2017) **(1,2,3,4,5, \$412,601)**.

Genome wide association study for malting quality traits in WSU barley. American Malting Barley Association. \$30,000. **Murphy, K.**, J.B. Matanguihan, M. Wood, D. See. (2015-2017) **(1,2,3,4,5, \$30,000)**.

Developing agronomic strategies to optimize production of quinoa and hulless barley on no-till farms in the Palouse region of Idaho and Washington. Western Sustainable Agriculture and Education (WSARE). \$221,000. **Murphy, K.**, J. Matanguihan, G. Noratto, G. Ganjyal. (2015-2018) **(1,2,3,4,5, \$182,000)**.

Equipment grants: Chlorophyll testing in heat tolerance study, and β -glucan analysis in food barley evaluations. Washington Wheat Foundation. \$8,000. **Murphy, K.**, J. Matanguihan, L. Hinojosa. (2015) **(1,2,3,4,5, \$8,000)**.

Organic quinoa breeding: Two graduate student fellowships. Lundberg Family Farms (69%) / WSU Agricultural Research Center (31%). \$160,000. **Murphy, K.** (2015-2017) **(1,2,3,4,5, \$160,000)**.

Utilizing marker assisted selection for malting barley improvement in Washington. American Malting Barley Association. \$45,000. **Murphy, K.**, J.B. Matanguihan, M. Wood, D. See. (2011-2014) **(1,2,3,4,5, \$45,000)**.

Organic food barley: Developing nutritious and delicious varieties for the Pacific Northwest. Organic Farming Research Foundation (OFRF). \$15,000. **Murphy, K.**, G. Norrato, J.B. Matanguihan, R. Kinney. (2014-2015) **(1,2,3,4,5, \$15,000)**.

Beyond beef and barley soup: Development of nutritionally dense, hulless food barley varieties for organic farmers. WSU Biologically Intensive Agriculture & Organic Farming (BIOAg). \$38,000. **Murphy, K.**, G. Norrato, J.B. Matanguihan, R. Kinney. (2014-2015) **(1,2,3,4,5, \$38,000)**.

Equipment grant: Quinoa seed cleaning processing. Earthbound Farm. \$15,000. **Murphy, K.** (2013) **(1,2,3,4,5, \$15,000)**.

Equipment grant: β -glucan moisture analyzer for WSU barley breeding program. Washington Wheat Foundation \$3,500. **Murphy, K., J. Matanguihan** (2013) **(1,2,3,4,5, \$3,500)**.

Developing adapted varieties and optimal management practices for quinoa in diverse environments. USDA-NIFA Organic Agriculture Research and Extension Initiative (OREI). \$1,603,653. **Murphy, K., C. Benedict, B.-K. Baik, E. Creech, K. Desta, J. Goldberger, S. Machado, J. Maughan, J. Matanguihan, S. Petrie, J. Reeve.** (2012-2016). **(1,2,3,4,5, \$420,000)**.

Barley improvement for yield, adaptation and quality. Washington Grain Commission. \$206,000. **Murphy, K., M. Wood, J.B. Matanguihan, S. Guy, X. Chen, D. See, I. Burke, S. Rustgi. D. von Wettstein.** (2012-2013) **(1,2,3,4,5, \$186,000)**.

Developing adapted varieties and optimal management practices for quinoa in diverse environments across Washington State. WSU Biologically Intensive Agriculture & Organic Farming (BIOAg). \$34,867. **Murphy, K., K. Desta, C. Benedict, B. Jaeckel.** (2012-2013) **(1,2,3,4,5, \$28,000)**.

Graduate student fellowship in organic plant breeding. Clif Bar Family Foundation / Seed Matters. \$125,000. **Murphy, K.** (2012-2017) **(1,2,3,4,5, \$125,000)**.

Equipment grant: Centrifuge and consumables for WSU barley breeding program. Washington Wheat Foundation. \$7,050. **Murphy, K., J. Matanguihan.** (2012) **(1,2,3,4,5, \$7,050)**.

Equipment grant: Seed cleaner for WSU barley breeding program. Washington Wheat Foundation. \$7,200. **Murphy, K., M. Wood.** (2012) **(1,2,3,4,5, \$7,200)**.

Plant breeding and agronomic research for organic hop production systems. USDA Organic Agriculture Research and Extension Initiative (OREI). \$410,000. **Murphy, K., L. Hoagland, H. Darby, R. Godin, S. Hulbert, R. Serrine.** (2009-2012) **(1,2,3,4,5, \$210,000)**.

Farmer-based evolutionary participatory plant breeding for alternative small grains. Organic Farming Research Foundation (OFRF). \$14,178. **Murphy, K.** (2011) **(1,2,3,4,5, \$14,178)**.

Evaluation of alternative small grains to enhance diversity and resiliency among small farms in Washington State. WSU Biologically Intensive Agriculture & Organic Farming (BIOAg). \$27,945. **Murphy, K.**, M. Colley, J. Navazio, D. Muehleisen, B. Jaeckel. (2010-2011) **(1,2,3,4,5, \$27,945)**.

Development of organic hop production in the Pacific Northwest. Western Sustainable Agriculture Research and Education (WSARE). \$123,000. **Murphy, K.**, L. Hoagland, J. Perrault, M. Roy. (2009-2012) **(1,2,3,4,5, \$123,000)**.

Integrating cultivar, soil and environment to develop regional value-added wheat crops with enhanced nutrient value. Organic Farming Research Foundation (OFRF). \$11,500. **Murphy, K.**, S.S. Jones, P. Reeves, C. Miles, D. Bernardo. (2008) **(2,3, \$11,500)**.

Systems agriculture and agroecology of perennial grain crops: Laboratory, field screening, and genetic incorporation of weed suppressing allelochemicals in perennial wheat breeding lines. The Land Institute. \$15,000. **Murphy, K.** S.S. Jones. (2004-2007) **(2,3, \$15,000)**.

As Co-Principal Investigator:

Next generation variety development and education for grains, apples, alternative crops and cool season legumes. USDA-NIFA. \$3,000,000. Carter, A., K. Garland-Campbell, S. Hulbert, R. McGee, M. Pumphrey, K. Evans, **K. Murphy**, D. See, S. Sankaran, Z. Zhang. **(2,5, \$166,915)**.

Enhancing the markets for U.S. grown quinoa. USDA-FSMIP. \$80,440. Ganjyal G.M., L. Patzek, D. Bauermeister, L. Norris, **K. Murphy**. (2014-2016) **(2,5, \$12,000)**.

Introducing organic quinoa production systems in the Palouse. WSU Biologically Intensive Agriculture & Organic Farming (BIOAg). \$18,950. Reganold, J.P., C. Benedict, D. Crowder, **K. Murphy**, K. Painter. (2014-2015) **(2)**.

Introducing organic quinoa production systems in the Palouse. WSU Emerging Research Issues. \$18,950. Reganold, J.P., L. Carpenter-Boggs, C. Benedict, D. Crowder, **K. Murphy**, K. Painter, S. Van Vleet. (2014-2015) **(2)**.

Improving barley and wheat germplasm for changing environments. Triticeae CAP. \$25,000,000. Large consortium of PI's and co-PI's. (2011-2014) **(5, \$40,000)**.

Organic farming research for the Northwest. USDA-NIFA. \$250,000. Granatstein, D., C. Kruger, C. Miles, J. Davenport, L. Du Toit, S.S. Jones, **K. Murphy**. (2010-2012) **(2,5, \$53,568)**.

I served as a co-PI on the following grants when I was either a post-doc or a graduate student in the Stephen Jones Winter Wheat Breeding Program.

Biological mediation of apple replant disease in organic apple orchards. Organic Farming Research Foundation (OFRF). \$35,000. Hoagland, L., M. Mazzola, **K. Murphy**, S.S. Jones. (2009-2010) (2,5).

Evaluating and developing varieties for organic systems in Western Washington. Center for Sustaining Agriculture and Natural Resources (WSU-CSANR). \$65,000. Jones, S.S., **K. Murphy**, M. Colley, C. Miles. (2008-2009) (2,5).

Increasing wheat productivity through diversity. Orville Vogel Grant. \$53,639. Lyon, S., S.S. Jones, **K. Murphy**. (2007-2009) (5).

Development of perennial wheat for Washington State. Washington Wheat Commission. \$12,000. Jones, S.S., S. Lyon, K. Balow, M. Gollnick, **K. Murphy**. (2006-2007) (5).

Evaluating and developing wheat varieties for organic systems. Center for Sustaining Agriculture and Natural Resources (WSU-CSANR). \$140,000. Jones, S.S., **K. Murphy**. (2004-2007) (5).

Developing winter wheats specifically for emergence from deep planting. Otto and Doris Amen Dryland Research Endowment. \$11,000. Jones, S.S., S. Lyon, K. Balow, M. Gollnick, J. Burns, **K. Murphy**. (2003-2006) (5).

RESEARCH MENTORSHIP

SUPERVISION AS MAJOR ADVISOR OF GRADUATE STUDENTS (12 total)

Current Students (6 total)

Leonardo Hinojosa, Ph.D. in Crop Science
Louisa Winkler, Ph.D. in Crop Science
Cedric Habiyaremye, M.S. in Crop Science
Julianne Kellogg, M.S. in Crop Science
Ian Clark, M.S. in Crop Science
Kristofor Ludvigson, M.S. in Crop Science

Past Students (6 total)

Hannah Walters, M.S. in Crop Science, Graduated Spring 2014
Thesis: Agronomic and Nutritional Characteristics of Quinoa Grown under Different Intercrop and Irrigation Regimes in an Organic System
Adam Peterson, M.S. in Crop Science, Graduated Spring 2013
Thesis: Salinity Tolerance and Nitrogen Use Efficiency of Quinoa for Expanded Production in Temperate North America
Erin Hightower, M.S. in Agriculture, Graduated Fall 2013

- MS Final Report: *Organic Nutrient Management in Hop Variety Trials in the Yakima Valley*
- Morgan Gardner, M.S. in Environmental Science, Graduated Summer 2013
Thesis: *Assessing the Potential Adoption of Quinoa for Consumption in Central Malawi*
- Stacy Lischke, M.S. in Agriculture, Graduated Spring 2013
MS Final Report: *Sustainable Small Farming and Youth Leadership**
*The impact of Ms. Lischke's MS in Ag research was an agreement with two Snohomish high schools, the Edmonds Community College Horticulture Program, and Edmonds Tech Prep on Urban Agriculture and the Sustainable Agriculture Education program (SAgE: <http://www.edcc.edu/hort/sustainable-agriculture.html>).
- Sam Turner, M.S. in Crop Science, Graduated Fall 2012
Thesis: *The Impact of Cover Crops on Weed Populations in an Organic Hopyard*

SUPERVISION OF UNDERGRADUATE SCHOLARSHIP

Undergraduate Honors Advisor

- James Casey, Honors Thesis, Pass with Distinction, Spring 2014
Thesis: *Comparing Tree Diversity in Conventional and Organic Shade Grown Coffee Systems to Forest Ecosystems: Discussing the Economic, Social and Environmental Value of Preserving Tree Species*

Undergraduate Research Internship Advisor (7 total)

- Jesse White, B.S. in Agriculture Education, CAHNRS Undergraduate Research Internship Awardee, Spring 2016, Internship Project: *Characterization of root growth of perennial wheat in a Rhizotron*
- Kristofor Ludvigson, B.S. in Organic Agriculture, CAHNRS Undergraduate Research Internship Awardee, Summer 2014, Internship Project: *Evaluation of Buckwheat Varieties in Organic Systems in Pullman, WA*
- Joshua Gefre, B.S. in Field Crop Management, CAHNRS Undergraduate Research Internship Awardee, Summer 2013, Internship Project: *Phenotyping of 125 Cultivars and Breeding Lines of Grain Amaranth*
*Received the Boeing Novice Award for a poster based on this research
- Victoria Barth, B.S. in Field Crop Management, CAHNRS Undergraduate Research Internship Awardee, Summer 2013, Internship Project: *Year Two: Effect of Irrigation and Variety on Grain Yield and Agronomic Traits in Proso Millet*
*Received prestigious Aggie of the Year Award from CAHNRS, WSU 2014
- Kelsey Hight, B.S. in Field Crop Management, WSU Internship, Summer 2012, Internship Project: *Effect of Irrigation and Variety on Grain Yield and Agronomic Traits in Proso Millet*
- Raymond Kinney, B.S. in Organic Agriculture, WSU Internship, Summer 2011, Internship Project: *Evaluation of Winter Spelt Breeding Lines in Organic Systems*
- Blair van Pelt, B.S. in Organic Agriculture, WSU Internship, Summer 2010, Internship Project: *Testing 44 Quinoa Varieties for Adaptability to the Palouse*

MEMBERSHIP ON GRADUATE SUPERVISORY COMMITTEES (25 total)

Current Students (10 total, major advisor(s) in parenthesis)

Emily Green-Tracewicz, Ph.D. in Crop Science (J. Goldberger)

Rachel Weime, Ph.D. in Soil Science (J. Reganold)

Brigid Meints, Ph.D. in Crop Science (S. Jones)

Eva Erdayani, Ph.D. in Crop Science (K. Gill)

Kim Castelin, Ph.D. in Environmental Science (M. Ostrom)

Kanwar Singh, Ph.D. in Crop Science (K. Gill)

Alison Detjens, M.S. in Crop Science (J. Goldberger)

Scott Minckler, M.S. in Agriculture (J. Reganold)

Kelsey Highet, M.S. in Crop Science (S. Guy)

Tami Lynn Lee, M.S. in Agriculture (M. Whiteman)

Past Students (15 total, major advisor(s) in parenthesis)

Geyang Wu, Ph.D. in Food Science, Graduated Spring 2016 (C. Morris / C. Ross)

Nicole Aluwi, M.S. in Food Science, Graduated Spring 2016 (G. Ganjyal)

Colleen Sanders, M.S. in Agriculture, Graduated Spring 2016 (P. Andrews)

Brook Brouwer, Ph.D. in Crop Science, Graduated Summer 2015 (S. Jones)

Rocio Carrion Rabanal, M.S. in Food Science, Graduated Spring 2015 (G. Noratto)

Blessing Oritsesaninormi, M.S. in Crop Science, Graduated Spring 2015 (P. Miklas)

Nathan Brugnone, M.S. in Horticulture, Graduated Spring 2015 (M. Whiting)

Erik Landry, Ph.D. in Crop Science, Graduated Fall 2014 (C. Coyne / J. Hu)

Trevor Faucett, M.S. in Agriculture, Graduated Summer 2012 (M. Swan)

Olutoyosi Ajayi, M.S. in Crop Science, Graduated Summer 2012 (S. Ullrich)

Lu Lu, M.S. in Food Science, Graduated Spring 2012 (B. Baik)

Amber Heckelman, M.A. in Cultural Anthropology, Graduated Fall 2011 (J. Bodley)

Aubrey Reeves, M.S. in Agriculture, Graduated Summer 2011 (M. Swan)

Sarah Thomas, M.S. in Agriculture, Graduated Summer 2011 (M. Swan)

Karen Trout, M.S. in Environmental Science, Graduated Spring 2011 (J. Goldberger)

SUPERVISION OF POST-DOCTORAL RESEARCH ASSOCIATES (2 total)

Dr. Dan Packer, 2016-present, Quinoa Breeding and Agronomy

Dr. Janet Matanguihan, 2011-2014, Barley Breeding and Genetics

TEACHING

COURSES DEVELOPED (2 Total)

Introduction to Agroecology, AFS/Soil Sci 302, Writing in the Major core course.
Undergraduate, 3 credits.

Neotropical Agroecology and Participatory Research: Ecuador, Crops Sci 497, Crop Sci 499 & Crop Sci 512. Undergraduate/Graduate, 4 credits.

COURSES TAUGHT (7 total)

Introduction to Agroecology, AFS/Soil Sci 302, Writing in the Major core course. Undergraduate, 3 credits. Taught each spring from 2011-2016. Typical enrollment: 35-40 students.

Systems Skills Development for Agriculture and Food Systems, AFS 201, Undergraduate, 3 credits. Team taught each spring from 2013-2016. 33% Contribution. Typical enrollment: 50-60 students.

Plant Breeding for Organic Systems, Crop Sci 443, Undergraduate/Graduate, 3 credits. Taught in fall 2015 as a 100% online/distance course. 6 students.

Undergraduate Seminar, Undergraduate, 1 credit. Team-taught spring 2016. 50% Contribution. Crop_Sci/Soil_Sci 412. 20 students.

Neotropical Agroecology and Participatory Research: Ecuador, Crop_Sci 497, Crop_Sci 499 & Crop_Sci 512, Undergraduate/Graduate. 4 credits. Taught spring/summer 2016. 5 students.

Organic Farming and Gardening, AFS/Soil_Sci 101, Undergraduate. 3 credits. Taught summer 2011-2013. Typical enrollment: 10-15 students.

Field Analysis of Sustainable Food Systems, AFS/Soil_Sci 445/545, Undergraduate/Graduate. 3 credits. Taught spring 2011-2014. Typical enrollment: 20 students.

GUEST LECTURES (31 total)

Plant Breeding, Crop Science 445. Washington State University. 2015-2016

Crop Physiology, Crop Science 411. Washington State University. 2015

Ethnobiology, Anthropology 591. Washington State University. 2016

Seminar in Agriculture, AGRI 199. University of Philippines, Los Banos. 2013

Introduction to Cultivated Plants, Crop Science 102. Washington State University. 2011- 2014

Participatory Methodologies in Agricultural Systems Research and Extension, ASYS 145. University of Philippines, Los Banos. 2013

Agricultural Extension and Communication, AEC 1. University of Philippines, Los Banos. 2013

Advanced Soil Microbiology, SOIL 221. University of Philippines, Los Banos. 2013

Current Research in Organic and Sustainable Agriculture, AFS 501. Washington State University. 2012; 2014

Organic Gardening and Farming, Soil Science 101. Washington State University. 2005; 2007-2016

World Agricultural Systems, Crop Science 360. Washington State University. 2013-2014

Continuing Education for Farmers, Sustainable Agriculture 160. Peninsula College. 2009

Food, Health and Sustainability, Evergreen State College. 2008

Horticultural Crops, Hort 102. Washington State University. 2007

Practicum in Organic Agriculture, Soil Science 480. Washington State University. 2007

SCHOLARLY PRESENTATIONS AND POSTERS

ORAL PRESENTATIONS (60 total: 35 invited and 4 keynote presentations)

†Denotes an invited presentation, *Denotes a keynote presentation. These do not include field day presentations or workshops.

†**Murphy, K.** (2016). *Development of the WSU quinoa breeding program from the ground up: Lessons learned and the way forward*. National Association of Plant Breeding, Webinar, April 20, 2016.

†**Murphy, K.** (2016). *Breeding for nutritional and rotational diversity in dryland cereal and seed crops in the Palouse prairie ecosystem of the Pacific Northwest*. Texas A&M Plant Breeding Symposium, College Station, TX, February 18, 2016.

†**Murphy, K.** (2016). *Breeding grains for regional organic adaptation*. Organic Seed Growers Conference, Corvallis, OR, February 5, 2016.

Murphy, K. (2015). *Alternative grains and their multiple end-uses*. Shepherd's Grain / Chef Collaborative, Cheney, WA, September 15, 2015.

- Vico, G., S. Manzoni, L. Nkurunziza, **Murphy, K.**, M. Weih (2015). *Yield versus Sustainability in annual and perennial crops: A meta-analysis*. Swedish University of Agricultural Sciences, Future of Agriculture Conference, June 3, 2015.
- Murphy, K.** (2015). *Development of a worldwide consortium on evolutionary participatory breeding in quinoa*. European Association of Plant Breeding International Symposium on Protein Crops V. Pontevedra, Spain, May 5, 2015.
- †**Murphy, K.** (2015). *Challenges and opportunities of breeding quinoa in the Pacific Northwest*. University of Minnesota Plant Breeding Symposium, Minneapolis, MN, March 27, 2015.
- †**Murphy, K.** (2015). *Development of food barley and quinoa for the organic market*. Workshop entitled ‘Helping farmers meet demand for the growing organic market’, Natural Products Expo West, Anaheim, CA, March 5, 2015.
- †***Murphy, K.** (2015). *Breeding crops for higher nutritional value: Ongoing research at Washington State University*. Organic Farming Research Foundation 25th Anniversary Luncheon ‘Deep Roots, New Shoots’, Anaheim, CA, March 5, 2015.
- Murphy, K.** (2015). *Growing and marketing specialty grain crops in the Pacific Northwest*. Cascadia Grains Conference, Olympia, WA, January 10, 2015.
- Murphy, K.** (2014). *Update of the WSU barley breeding program*. Washington State Crop Improvement Annual Meeting, Spokane, WA, November 10, 2014.
- †**Murphy, K.** (2014). *An in-depth look at the WSU barley and alternative crop breeding program*. Greater Spokane Incorporated Agribusiness Council, Pullman, WA, October 28, 2014.
- †**Murphy, K.** (2014). *Overview of the WSU barley and alternative crop breeding program*. Pullman, WA Lions Club, October 27, 2014.
- †***Murphy, K.** (2014). *Breeding for diversity: A review of 10 years of evolutionary, participatory breeding, and a look ahead*. SOLIBAM Congress 2014: ‘Diversity strategies for organic and low input agricultures and their food system’, Nantes, France, July 8, 2014.
- †**Murphy, K.** (2014). *Keen on quinoa breeding*. National Association of Plant Breeding, Webinar Series titled ‘How to breed new plant varieties: Imagining and engineering crops’, June 3, 2014.
- †**Murphy, K.**, M. Dillon, C. Brummer, L. Carlisle (2014). *Developing seeds in diversified farming systems: A panel discussion*. Berkeley Food Institute, University of California, Berkeley, April 28, 2014.

- †***Murphy, K.** (2014). *Cultivating the future: Growing the Northwest quinoa crop*. Washington State University Innovators Luncheon, Seattle, WA, April 24, 2014.
- †**Murphy, K.** and F. Morton (2014). *Growing quinoa in the Pacific Northwest*. Oregon Small Farms Conference, Corvallis, OR, February 22, 2014.
- †**Murphy, K.** (2014). *Specialty grain production in the Pacific Northwest: Examples from amaranth, buckwheat, millet, spelt and quinoa*. Cascadia Grains Conference, Tacoma, WA, January 11, 2014.
- †**Murphy, K.** (2013). *Biotechnology in organic agriculture*. University of Philippines, Los Banos, Invited Seminar Speaker, December 16, 2013.
- †**Murphy, K.** (2013). *Teaching organic agriculture online: Challenges and opportunities*. University of Philippines, Open University, UPOU Special “Let’s Talk it Over” Seminar Series, December 11, 2013.
- †**Murphy, K.** and I. Clark (2013). *Organic quinoa production*. Washington State Tilth Producers Annual Conference, Yakima, WA, November 10, 2013.
- Murphy, K.** (2013). *Opening remarks: Quinoa research at Washington State University*. International Quinoa Research Symposium, Pullman, WA, August 12, 2013.
- †**Murphy, K.** (2013). *Breeding for farmers needs: Quinoa, barley and buckwheat*. Student Organic Seed Symposium, Mount Vernon, WA, August 5, 2013.
- †**Murphy, K.,** A. Carter, S.S. Jones (2013). *An evolutionary participatory approach for breeding self-pollinating cereals in organic systems*. American Society for Horticultural Science Annual Conference, Palm Springs, CA, July 23, 2013.
- †**Murphy, K.** (2013). *Quinoa breeding in the US*. TCAP Webinar Series: “Ahead of the curve: Technologies for next generation plant breeding” March 20, 2013.
- †**Murphy, K.** (2013). *Organic quinoa production in the Pacific Northwest*. eOrganic Webinar Series, February 25, 2013.
- †**Murphy, K.** (2013). *Barley breeding at Washington State University*. Plant and Animal Genome Conference / Barley Improvement Conference, San Diego, CA, January 14, 2013.
- †**Murphy, K.** (2012). *Update of WSU barley breeding program*. Washington Grain Commission Monthly Meeting. Spokane, WA, December 3, 2012.
- †**Murphy, K.** (2012). *Quinoa production in the Pacific Northwest*. Focus on Farming Conference. Everett, WA, November 15, 2012.

- Murphy, K.** (2012). *Organic hop production, variety trials and cover crop systems in the Yakima Valley of Washington State*. USDA-NIFA-OREI Project Directors Workshop. Washington, DC, October 2, 2012.
- †Murphy, K.** (2012). *Designing a participatory breeding program: Challenges and opportunities*. Nitrogen Use Efficiency Crops Workshop – Farmer participatory approaches for variety selection/breeding and nutrient/environmental management. Sivas, Greece, June 10, 2012.
- †Murphy, K.** (2012). *Methods and principles of farmer participatory breeding*. Nitrogen Use Efficiency Crops Workshop – Farmer participatory approaches for variety selection/breeding and nutrient/environmental management. Sivas, Greece, June 9, 2012.
- Murphy, K.** (2012). *Participatory extension*. Extension Workshop to Strengthen Skills of Young Professionals in Afghanistan and Pakistan. Faisalabad, Pakistan, May 2, 2012.
- Murphy, K.** (2012). *Bringing agriculture into the ODeL environment: Challenges and Opportunities*. 1st International Conference on Open and Distance e-Learning, Manila, Philippines, February 23, 2012.
- Murphy, K., A. Peterson** (2011). *Nitrogen use efficiency in quinoa (*Chenopodium quinoa*) under organic greenhouse and field conditions*. CSSA-ASA-SSSA Annual Meeting, San Antonio, TX, Oct. 18, 2011.
- †Murphy, K.** (2011). *Perennial grains in the Pacific Northwest*. Kellogg Biological Station, Michigan State University, MI. July, 6, 2011.
- Murphy, K.** (2011). Seed certification and seed quality management. Iraq Agricultural Extension Revitalization Workshop. Erbil, Iraq. February 2011.
- †,*Murphy, K.** (2011). Keynote presentation: *Evolutionary participatory breeding: A new look at an old story*. Northern Plains Sustainable Agriculture Society's 2011 Annual Conference, Fargo, ND, February 5, 2011.
- †Murphy, K.** (2011). *Participatory breeding methods for a diversity of crop pollination strategies: Examples in wheat, quinoa, buckwheat and hops*. Northern Plains Sustainable Agriculture Society's 2011 Annual Conference, Fargo, ND, February 4, 2011.
- Murphy, K.** (2010). *Breeding for genetic and market diversity: Examples from hops, quinoa and buckwheat*. EUCARPIA Low-input and Organic Plant Breeding Conference, Paris, France, December 2, 2010.

- Murphy, K.,** M. Colley (2010). *Organic grain in western Washington: Finnriver farm tour*. WSU Small Farms/Washington Tilth Producers Farm Tour, November 11, 2010.
- Murphy, K.** et al. (2010). *Organic grain research in the Pacific Northwest*. CSSA-ASA-SSSA Annual Meeting, Long Beach, CA, November 3, 2010.
- Murphy, K.,** L. Yan, L. Hoagland, S.S. Jones (2010). *Genotype x environment interactions for mineral nutrient concentration and yield in organic wheat*. CSSA-ASA-SSSA Annual Meeting, Long Beach, CA, November 1, 2010.
- †**Murphy, K.** (2010). *Benefits and challenges of genetically modified food crops*. League of Women Voters, Moscow, ID, March 10, 2010.
- †**Murphy, K.** (2010). *Growing wheat east and west of the Cascades*. Farmer to Farmer Workshop, Walla Walla, WA, March 6, 2010.
- †**Murphy, K.** (2010). *Plant Breeding and agronomy of organic hops*. American Hop Convention. Yakima, WA, January 23, 2010.
- †**Murphy, K.,** N. Huber (2009). *Small scale grain production*. Washington Tilth Producers Annual Conference. Yakima, WA, Nov. 15, 2009.
- †**Murphy, K.** (2009). *Organic wheat breeding in Washington State*. Washington State Borlaug Fellows Program. Pullman, WA, Sept. 20, 2009.
- Murphy, K.** (2009). *Evolutionary participatory breeding in wheat*. IFOAM Conference on Organic Plant and Animal Breeding. Santa Fe, New Mexico, August 27, 2009.
- †**Murphy, K.** (2009). *Mineral nutrition and end-use quality in organic and conventional wheat*. 3rd International Congress on Food and Nutrition. Quality Low-Input Food Conference, Antalya, Turkey, April 6, 2009.
- Murphy, K.,** P. Reeves, L. Hoagland, S.S. Jones (2008). *Exploiting cropping system x cultivar interactions for nutritional value in wheat*. CSSA-ASA-SSSA Annual Meeting. Houston, TX, October 6, 2008.
- Murphy, K.,** L. Hoagland, P. Reeves, S.S. Jones (2008). *Effect of cultivar and soil characteristics on nutritional value in organic and conventional wheat*. Quality Low-Input Food Conference, June 20, 2008, Modena, Italy.
- J. Dawson, **Murphy, K.,** S.S. Jones (2008). *Breeding for nitrogen use efficiency in organic wheat systems*. Organic World Congress, June 20, 2008, Modena, Italy.

Murphy, K., L. Hoagland, J. Dawson, S. Jones (2008). *Selecting, growing, and marketing value-added wheat varieties in organic cropping rotations*. Organic Seed Alliance Seed Growers Conference. Salem, OR, February 14-15, 2008.

Murphy, K., J. Dawson, P. Reeves, S. Jones (2007). *Heritability and genotype x environment interactions of mineral nutrient concentration in wheat grown in organic systems*. European Association for Plant Breeding Research (EUCARPIA) Symposium. Plant breeding for organic and sustainable, low-input agriculture: dealing with genotype-environment interactions. Wageningen, Netherlands, November 9, 2007.

Murphy, K. (2007). *Perennial wheat breeding and the role of allelopathy in weed suppression ability*. The Land Institute Fellows Workshop. Matfield Green, KS, June 14, 2007.

Murphy, K., S. Jones (2005). *Genetic assessment of the need for organic plant breeding programs in winter wheat (*Triticum aestivum*, L.)*. 7th International Wheat Conference. Mar del Plata, Argentina, December 1, 2005.

Murphy, K., J. Dawson, S. Jones (2005). *Participatory breeding program for cereals*. CSSA-ASA-SSSA Annual Meeting. Salt Lake City, UT, November 8, 2005.

Murphy, K., S. Jones (2005). *Breeding wheat for organic systems*. CSSA-ASA-SSSA Annual Meeting. Salt Lake City, UT, November 9, 2005.

POSTER PRESENTATIONS (32 total)

Khatai, K., **K. Murphy**, K.G. Desta, J. Davenport (2015). Effect of organic nitrogen amendments and irrigation regimes on agronomic performance of two quinoa cultivars. Science at IAREC – Irrigated Agriculture Research and Extension Center. Prosser, WA, July 1, 2015.

Habiyaremye, C., G. Ganjyal, J. D’Alpoim Guedes, **K. Murphy** (2015). Alleviating global hunger and enhancing food security through interdisciplinary approaches: crop diversity, food science, and anthropology. Association for International Agriculture and Development Annual Conference, Washington DC, June 1, 2015.

Habiyaremye, C., **K. Murphy** (2015). Cultivating the Future: Growing the Northwest Quinoa Crop. WSU International Development Club Presentation at Oregon State University, Corvallis, OR, April 15, 2015.

Wu, G., C.F. Morris, **K. Murphy** (2014). Quinoa starch characteristics and their correlations to cooking quality. WSU BIOAg Symposium, Saving Nature and Improving Agriculture: Where does Nature’s Wisdom Lie? Pullman, WA, October 28, 2014.

Habiyaremye, C.*, V. Barth, K. Highet, **K. Murphy** (2014). Effect of irrigation on plant height, heading, maturity and seed yield on 20 diverse millet varieties. WSU BIOAg Symposium, Saving Nature and Improving Agriculture: Where does Nature's Wisdom Lie? Pullman, WA, October 28, 2014.

*Received 1st place in the CSANR BIOAg graduate student poster competition

Ludvigson, K. and **K. Murphy** (2014). Buckwheat variety trials for improved yield and determinant variety development. WSU BIOAg Symposium, Saving Nature and Improving Agriculture: Where does Nature's Wisdom Lie? Pullman, WA, October 28, 2014.

Wu, G., C.F. Morris, **K. Murphy** (2014). Evaluation of texture differences among varieties of cooked quinoa. American Association of Cereal Chemistry Annual Meeting, Providence, Rhode Island, October 6, 2014.

Noratto, G.*, R. Carrion-Rabanal, **K. Murphy**, G. Ganjyal, R. Kowalski (2014). Quinoa as a source of bioactive compounds with potential for intestinal health. *Experimental Biology Annual Meeting 2014*, San Diego, April 2014.

*Earned 2nd prize in the Bioactive Compounds Research Interest Section poster competition

Gefre, J.*, H. Walters, **K. Murphy** (2014). Amaranth: the lost crop of the ancient Aztecs. WSU SURCA Academic Showcase, Pullman, WA, March 29, 2014.

*Received the Boeing Novice Award for Undergraduate Student Research

Wu, G., C.F. Morris, and **K. Murphy** (2014). Texture differences of cooked quinoa among thirteen varieties. WSU Academic Showcase, Pullman, WA, March 29, 2014.

Peterson, A. and **K. Murphy** (2013). Pre-harvest sprouting, mold susceptibility, senescence, and seed set in quinoa cultivars grown in Northwest Washington State. Tilth Producers Conference, Yakima, WA, November 11, 2013.

Walters, H. and **K. Murphy** (2013). Irrigation and intercropping with quinoa (*Chenopodium quinoa*) in the Palouse. International Quinoa Research Symposium, Pullman, WA. August 11, 2013.

Wu, G. and **K. Murphy** (2013). Texture differences of cooked quinoa among thirteen varieties. International Quinoa Research Symposium, Pullman, WA. August 11, 2013.

Peterson, A. and **K. Murphy** (2013). Salinity tolerance of four lowland varieties of quinoa responses to three concentrations of NaCl and Na₂SO₄ under two fertilization levels. International Quinoa Research Symposium, Pullman, WA. August 11, 2013.

- Hoagland, L., **K. Murphy**, S. Turner, J. Perrault, R. Serrine, B. Tennis (2013). Cover crop mixtures build soil quality in organic hop orchards. American Society for Horticultural Science Annual Conference, Palm Springs, CA, July 23, 2013.
- Walters, H. and **K. Murphy** (2013). Effects of irrigation and intercropping on quinoa. WSU Academic Showcase, Pullman, WA, March 29, 2013.
- Kinney, R. and **K. Murphy** (2013). Breeding spelt (*Triticum aestivum* spp. *spelta*) for improved yield and threshability in organic systems. WSU Academic Showcase, Pullman, WA, March 29, 2013.
- Walters, H. and **K. Murphy** (2013). Quinoa in the Palouse: Effects of variety, intercropping and irrigation on yield and agronomic characteristics. 3rd Robert E. Allan Plant Breeding Symposium, Pullman, WA, March 25, 2013.
- Walters, H.* and **K. Murphy** (2012). Breeding and agronomy of quinoa (*Chenopodium quinoa*). WSU Center for Sustaining Agriculture and Natural Resources 20th Anniversary Symposium. Pullman, WA, December 6, 2012.
*Received 1st place in the CSANR BIOAg graduate student poster competition
- Kinney, R.* and **K. Murphy** (2012). Breeding spelt (*Triticum aestivum* spp. *spelta*) for improved yield and threshability in organic systems. WSU Center for Sustaining Agriculture and Natural Resources 20th Anniversary Symposium. Pullman, WA, December 6, 2012.
*Received 1st place in the undergraduate student poster competition
- Peterson, A. and **K. Murphy** (2012). Salinity tolerance of four lowland varieties of quinoa (*Chenopodium quinoa* Willd.): responses to three levels of NaCl and Na₂SO₄ under two fertilization levels. CSSA-ASA-SSSA Annual Meeting, Cincinnati, OH, October 2012.
- Turner, S. and **K. Murphy** (2012). Cover cropping systems for organic hop production in the Yakima Valley, USA. Zatec, Czech Republic, September 11, 2012.
- Turner, S. and **K. Murphy** (2012) Evaluating cover crops for weed suppression in organic hopyards. WSU Academic Showcase, Pullman, WA, March 30, 2012.
- Peterson, A. and **K. Murphy** (2011). Adaptability and nitrogen use efficiency of quinoa for Washington State. Washington Tilth Producers, Yakima, WA, November 2011.
- Turner, S. and **K. Murphy** (2011). Evaluating cover crops for weed suppression in organic hopyards. CSSA-ASA-SSSA Annual Meeting, San Antonio, TX, October 2011.
- Murphy, K.**, J. Dawson, P. Reeves, S. Jones (2007). *Yield, regrowth and winter survival of perennial wheat in the Pacific Northwest*. CSSA-ASA-SSSA Annual Meeting. New Orleans, Louisiana, November 2007.

Murphy, K., P. Reeves, S. Jones (2006). *Breeding for enhanced mineral nutrient content in wheat*. International Plant Breeding Symposium. Mexico City, Mexico, August 2006.

Murphy, K., S. Jones (2006). *The role of allelopathy in weed suppression*. The Land Institute Fellows Workshop. Matfield Green, KS, June 2006.

Murphy, K., J. Dawson, M. Gollnick, S. Lyon, S. Jones (2006). *Participatory wheat breeding in the Pacific Northwest*. Symposium on Sustainable Agriculture, Communities, and Environments in the Pacific Northwest. Richland, WA, May 2006.

Murphy, K., S. Lyon, K. Campbell, S. Jones (2006). *Evidence for varietal adaptation to organic farming systems*. WSU Academic Showcase. Pullman, WA, March 2006.

Murphy, K., S. Jones (2005). *The role of allelopathy in perennial wheat cropping systems*. The Land Institute Fellows Workshop. Matfield Green, KS, June 2005.

Murphy, K., S. Jones (2004). *Laboratory evaluations, field screening and genetic incorporation of weed suppressing allelochemicals into annual and perennial wheat*. The Land Institute Fellows Workshop. Matfield Green, KS, June 2004.

SYMPOSIA ORGANIZED (as lead organizer and funder)

International Quinoa Research Symposium, August 12-14, 2013. Pullman, WA. 160 attendees representing 24 countries and 18 states.

Organic Hop Research Symposium, September 7-9, 2010. Yakima Valley, WA. 35 participants (invited only).

SYMPOSIA ORGANIZED (as co-organizer or steering committee member)

Pacific Northwest Organic Plant Breeding Symposium, February 3, 2016. Corvallis, OR. 75 participants (invited only).

Cascadia Grains Conference, January 9, 2016. Olympia, WA. Steering Committee. 300 attendees.

Cascadia Grains Conference, January 10, 2015. Olympia, WA. Steering Committee. 300 attendees.

WORKSHOPS, FIELD DAYS AND FARMER OUTREACH

Lamont Variety Testing Field Day, WSU Barley Breeding and Genetics, Lamont, WA
July 9, 2015

St. John Variety Testing Field Day, WSU Barley Breeding and Genetics, St. John, WA
July 9, 2015

Farmington Variety Testing Field Day, WSU Barley Breeding and Genetics, Farmington,
WA July 9, 2015

‘Know Barley, Know Beer’ Field Day and Workshop, WSU Malt Barley Breeding,
Fairfield, WA July 10, 2015

Spillman Farm Field Day, WSU Barley Breeding and Genetics, Pullman, WA July 14,
2015

Finnriver Farm Quinoa Selection Workshop, Participatory Breeding in Diverse Quinoa
Populations, Chimacum, WA July 21, 2015

Eggert Family Farm Field Day, Irrigation x Variety Millet Trial, Pullman, WA July 30,
2015

Paluthe Farm Field Day, Millet and Amaranth in Tilled and no-Tilled Treatments,
Genesee, ID September 11, 2015

Greater Spokane Incorporated Agribusiness Council, Overview of WSU Barley and
Alternative Crop Breeding Program, Pullman, WA, October 28, 2014

WSU Eggert Family Farm Field Day, Quinoa Intercropping Buckwheat Variety Trials,
Pullman, WA, July 31, 2014

WSU Cereal Breeding Program Seed Dealer Tour, Spillman Farm, Barley Breeding and
Genetics, July 18, 2014.

Lamont Variety Testing Field Day, WSU Barley Breeding and Genetics, Lamont, WA
July 16, 2014

St. John Variety Testing Field Day, WSU Barley Breeding and Genetics, St. John, WA
July 16, 2014

Farmington Variety Testing Field Day, WSU Barley Breeding and Genetics, Farmington,
WA July 16, 2014

Shepherd’s Grain Field Day, WSU Quinoa Breeding and Agronomy, Whitman County,
WA & Latah County, ID, July 14, 2014

Mount Vernon Small Grains Field Day, WSU Barley Breeding and Genetics, Mount Vernon, WA June 25, 2014

Mayview Variety Testing Field Day, WSU Barley Breeding and Genetics, Mayview, WA, June 19, 2014

Almira Variety Testing Field Day, WSU Barley Breeding and Genetics, Almira, WA, June 18, 2014

Fairfield Variety Testing Field Day, WSU Barley Breeding and Genetics, Fairfield, WA, June 17, 2014

Northwest Center for Alternatives to Pesticides, Healthy Foods & Farms Program, Tour of Organic Hulled Food Barley Plots, Harvest Ridge Farm, Lewiston, ID, May 23, 2014

International Quinoa Research Symposium, Quinoa and Amaranth Breeding and Genetics, Pullman, WA, August 12, 2013

International Quinoa Research Symposium, Multi-state Quinoa Variety Trial, Albion, WA, August 13, 2013

Student Organic Seed Symposium, Quinoa and Barley Variety Trials, Chimacum, WA, August 6, 2013

WSU Organic Farm Field Day, Quinoa, Buckwheat and Millet Breeding, Pullman, WA, July 26, 2013

Farmington Variety Testing Field Day, WSU Barley Breeding and Genetics, Farmington, WA, July 16, 2013

Shepherd's Grain Field Day, WSU Quinoa Breeding and Agronomy, Whitman County, WA, July 12, 2013

Spillman Farm Field Day, WSU Barley Breeding and Genetics, Pullman, WA, July 11, 2013

Reardon Variety Testing Field Day, WSU Barley Breeding and Genetics, Reardon, WA, June 27, 2013

Dayton Variety Testing Field Day, WSU Barley Breeding and Genetics, Dayton, WA, June 26, 2013

Mayview Variety Testing Field Day, WSU Barley Breeding and Genetics, Mayview, WA, June 20, 2013

Almira Variety Testing Field Day, WSU Barley Breeding and Genetics, Almira, WA,
June 19, 2013

Fairfield Variety Testing Field Day, WSU Barley Breeding and Genetics, Fairfield, WA,
June 18, 2013

WSU Organic Farm Field Day, Quinoa, Buckwheat and Millet Breeding, Pullman, WA,
July 26, 2012

Whitman County/Spillman Tour, WSU Barley Breeding and Genetics, Pullman, WA,
June 18, 2012

Fairfield Variety Testing Field Day, WSU Barley Breeding and Genetics, Fairfield, WA,
June 19, 2012

Mayview Variety Testing Field Day, WSU Barley Breeding and Genetics, Mayview,
WA, June 21, 2012

Walla Walla Variety Testing Field Day, WSU Barley Breeding and Genetics, Walla
Walla, WA June 26, 2012

Dayton Variety Testing Field Day, WSU Barley Breeding and Genetics, Dayton, WA,
June 27, 2012

Barley Breeding Field Day, WSU Spillman Agronomy Farm Field Day, Pullman, WA,
July 2011

Quinoa and Hops Variety Trial Field Day, WSU Organic Farm Field Day, Pullman, WA,
July 2011

Buckwheat and Quinoa Variety Trial Field Day, WSU Organic Farm Field Day, Pullman,
WA, July 2010

Growing Wheat East and West of the Cascades Farmer to Farmer Workshop, Walla
Walla, WA, March 6, 2010

Small Scale Grain Production Workshop Washington Tilth Producers Annual Conference,
Yakima, November 2009

Small Scale Wheat Production Workshop Friday Harbor, August 2009

Dryland Grain and Oilseed Farming Port Townsend, WA, August 2009

WSU NWREC Field Day Mt Vernon, WA, June 2009

Wheat Seed Farmer Field Day Sequim, WA, August 2008

WSU Western Washington Wheat Grower Meeting, Mount Vernon, WA, 2008

Participatory Plant Breeding Workshop Pullman, WA, June 2007

Fundamentals of Wheat Improvement Workshop Pullman, WA, 2004, 2005, 2006

Organic Grain Production Workshop Spokane, WA, 2003, 2005

Weed Suppression in Wheat, Pullman, WA, 2003, 2004

WSU Organic Field Day, Pullman, WA, 2003, 2004

INTERNATIONAL AGRICULTURAL DEVELOPMENT

Ecuador – Participatory Breeding of Barley and Quinoa in Collaboration with Indigenous Cañari Communities, Mushuk Yuyay Grain Cooperative, and Instituto Nacional de Investigaciones Agropecuarias (INIAP) (2015-2018)

- Testing 60 malting barley lines at the INIAP agricultural research station near Quito for stripe rust resistance, agronomic characteristics, seed yield, and malt quality
- Work with Mushuk Yuyay and Cañari people to plant and select early generation heterogeneous quinoa populations developed at WSU in Cañar
- Work with Mushuk Yuyay and Canari people to plant and select late generation food, feed, and malt barley breeding lines developed at WSU (many with Ecuadorian varieties in their pedigree) in two locations near Cañar

Rwanda – Variety Testing of Quinoa and Millet (2014-2017)

- Variety testing of 20 diverse quinoa varieties and breeding lines in two locations in irrigated and non-irrigated conditions for adaptation to growing conditions in Rwanda
- Variety testing across several species of cultivated millet in diverse environments in Rwanda
- In collaboration with a Norman E. Borlaug Leadership Enhancement in Agriculture Program (LEAP) fellowship awarded to graduate student Cedric Habiyaemye
- Evaluation of consumer acceptance of quinoa and millets; in collaboration with Dr. Jade D’Alpoim Guides of the Department of Anthropology at WSU

Malawi – Quinoa Production, Variety Testing, and Consumer Acceptance (2012-2015)

- Testing 10 to 15 quinoa varieties for yield, and agronomic traits in two locations in Malawi
- Evaluation of consumer acceptance of quinoa among women in eight villages in Malawi

Afghanistan – Pakistan Extension Workshop (2011-2012)

- Strengthening Extension Skills of Young Professionals in Afghanistan and Pakistan Workshop, University of Agriculture, Faisalabad, Pakistan, April 30-May 4, 2012
- Capacity Building Workshop, Faisalabad, Pakistan, June 2011
 - A multi-University project to strengthen extension capacity in Afghanistan and Pakistan. Funded by USDA, the consortia include UC Davis, Iowa State University, Maryland University, Purdue University, and Washington State University. A series of in-country workshops are planned to strengthen both technical skills and delivery approaches.

Iraq Agricultural Extension Revitalization (2008-2011)

- Extension Training Workshops on Seed Quality and Production, Erbil, Iraq, February 2011
 - Delivered classroom and lab training workshops
 - Enhanced university capacity in the form of an integrated modern extension curriculum so techniques & technology can be delivered to extension professionals & rural communities throughout Iraq
- Extension Training Workshops on Dryland Agricultural Systems, Erbil, Iraq: May 2010
 - Assisted in the design and implementation of a multi-University extension training workshop in Erbil, Iraq for a comprehensive agricultural extension education program for the agricultural colleges of Iraq.
- Extension Training Workshops on Designing Research and Demonstrations on Farmers Fields Aleppo, Syria: January 2008
 - Provided extension training and support for Iraqi faculty & senior extension professionals to return to their regions & provide extension courses to local extension professionals and agricultural communities.

RESEARCH AWARDS AND RECOGNITIONS

AWARDS / HONORS

Faculty of the Year Award, WSU CAHNRS Alumni and Development, 2016

Early Career Excellence Award, WSU CAHNRS, 2016

Team Leader, WSU CAHNRS Interdisciplinary Research Team Award, Team Quinoa, 2015

WSU Innovator of the Year Award, 2014

Fulbright Specialists Fellow, 2013

Commencement Speaker, University of Philippines Open University, 2013

Lindah Memorial Scholarship, 2007

Thomas and Catherine Hyslop Family Fellowship, 2006

Roscoe and Frances Cox Scholarship, 2006

Harry E. Goldsworthy Wheat Research Award, 2005

Land Institute Fellow, 2004-2006

VOLUNTEER / SERVICE EXPERIENCE

WSU Department of Crop and Soil Sciences Committee Member:

Organic Research Land-Use Committee, 2014-present (committee chair)

Graduate Applications Review Committee, 2013-present

Eggert Family Organic Farm Committee, 2012-present

WSU Center for Sustaining Agriculture and Natural Resources (council member)

WSU Organic Agriculture Research Coordinating Group, 2014-present (co-chair)

Associate Editor, Sustainability, 2014-present

Board of Trustees, Asia Rice Foundation, USA, 2014-present

Council Member, Asia Rice Foundation USA, 2011-2014

Associate Editor, Agronomy Journal, 2012-2013

Guest Editor, Sustainability Special Issue, 2012

WSU CAHNRS Undergraduate and Graduate Scholarship Evaluator, 2010-2011

WSU Sciences and Engineering Undergraduate Research Competition, Judge, March 2010