

CURRICULUM VITAE

University of Idaho

NAME: Phillip Wharton

DATE: January 7, 2024

RANK OR TITLE: Associate Professor, Potato Pathology

DEPARTMENT: Plant, Soil and Entomological Sciences

OFFICE LOCATION AND CAMPUS ZIP:

Aberdeen R&E Center
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DATE OF FIRST EMPLOYMENT AT UI: October 20, 2008

DATE OF TENURE: July 1, 2014

DATE OF PRESENT RANK OR TITLE: July 1, 2014

EDUCATION BEYOND HIGH SCHOOL:

Degrees:

Ph.D., 1997. University of Reading, UK. Plant Disease Resistance.

BSc.(Hons), 1993. University of Reading, UK. Biological Sciences.

Certificates and Licenses:

Campbell Scientific Inc. Certified in the programming, operation and hardware maintenance of Campbell Scientific CR10X weather stations and associated instruments.

Idaho State Department of Agriculture Professional Pesticide Applicators License

EXPERIENCE:

Teaching, Extension and Research Appointments:

2014-present, Associate Professor of Potato Pathology, University of Idaho, Aberdeen, ID

2008-2014, Assistant Professor of Potato Pathology, University of Idaho, Aberdeen, ID

2003-2008, Visiting Assistant Professor-Potato Pathology, Department of Plant Pathology, Michigan State University, MI

2001-2003, Senior Research Associate-Small Fruit Diseases, Department of Plant Pathology, Michigan State University, MI

1999-2001, Postdoctoral Research Associate-Tree Fruit Diseases, Department of Horticulture, Michigan State University, MI

1997-1999, Postdoctoral Research Associate-Disease Resistance in Cereals, Department of Botany and Plant Pathology,

Purdue University, IN

TEACHING ACCOMPLISHMENTS:

Areas of Specialization:

Plant Pathology, Disease forecasting, Fungicide resistance, Plant disease resistance, epidemiology and biology of host-pathogen interactions, running confined field trials for GM crops.

Courses Taught:

2015, Guest lectured for PISC 501, Plant Science Seminar, University of Idaho (1 lecture).

2014, Guest lectured for PISC 501, Plant Science Seminar, University of Idaho (1 lecture).

2012, Guest lectured for PISC 501, Plant Science Seminar, University of Idaho (1 lecture).

2012, Guest lecturer for PISC 490/590 Potato Science, University of Idaho (1 lectures).

2010, Guest lecturer for PISC 490/590 Potato Science, University of Idaho (2 lectures).

2003-2004, Guest lecturer for PLP 881, Biochemical and molecular bases of host-pathogen interactions, Michigan State University.

1998-1999, Guest lecturer for BTNY 607, Physiology and biochemistry of host parasite interactions, Purdue University.

1998, Directed study for BTNY 607, Principles of phenolic biochemistry and methods used to extract, isolate and identify phenolic compounds, Purdue University.

Students Advised:

Graduate Students:

2022-present, Member, Masters Committee for Madeline Kinnear
2022-present, Member, Masters Committee for Hayden Woods
2020-2022, Member, Masters Committee for Rachel Patterson
2019-2022, Member, PhD Committee for Christy Christian
2016-2022, Major Professor, PhD Committee for Sandesh Dangi
2015-2018, Member, Masters Committee for Nicholas Vincent
2012-2013, Major Professor, Masters Committee for Elisabeth Wood
2010-2012, Member, Masters Committee for Kaitlyn Bissonnette
2009-2011, Member, Masters Committee for Robin John

Undergraduates:

2014-2017, Isela Carrillo, undergraduate lab and field assistant
2012-2014, Darrah Ricard, undergraduate lab assistant, molecular disease diagnostics
2010-2012, Derek Moser, summer internship, potato disease management
2011-2012, Marcus Moser, summer internship, potato disease management
2011-2012, Marshall Windes, summer internship, potato disease management
2010-2011, Sarah Windes, summer internship, molecular disease diagnostics
2010-2011, Katie Fairchild, undergraduate lab assistant, Fungicide resistance screening
2010, David Robinson, summer internship, lab assistant
2010, Heather Larsen, summer internship, potato disease management
2009-2011, Elisabeth Wood, undergraduate lab assistant, control of potato blemish diseases
2009-2012, Phillip Scott Anderson, summer internships, potato disease management
2009, Dennis Demshar, summer internship, potato disease management.

Graduates:

Advised to completion of degree - major professor

Sandesh Dangi, Ph.D. graduated with Ph.D. May 2022
Elisabeth Wood, M.S. graduated with M.S. in 2013

Graduate Student Committees:

Christy Christian, Ph.D. graduated with Ph.D. in December 2022
Rachel Patterson, M.S. graduated with M.S. in May 2022
Nicholas Vincent, M.S. graduated with M.S. in May 2018
Kaitlyn Bissonnette, M.S. graduated with M.S. in December 2012
Robin John, M.S. graduated with M.S. in 2011

Materials Developed:

Web Pages:

2023, Idaho Crop Alerts Network	https://www.cropalerts.org
2011, Idaho Potato Diseases	http://www.idahopotatodiseases.org
2005-2018. Late Blight Risk Monitoring:	http://www.lateblight.org
2004-2017. Michigan Potato Diseases:	http://www.potatodiseases.org
2003-2010. Michigan Blueberry Facts:	http://www.blueberryfacts.org
2000-2016. Sorghum Diseases:	http://www.sorghumanthracnose.org

Honors and Awards:

Photograph on the front cover of the *American Journal of Potato Research*, May-June 2007 issue.
Micrograph on the front cover of *Plant Disease*, April 2005 issue.
Second prize in the Olympus Inc. Bioscapes International Digital Imaging Competition 2004.
Micrograph on the front cover of *Anales del Jardín Botánico de Madrid* issue 1 vol. 61, 2004.
Micrograph on the front cover of the journal *Phytopathology*, Feb 2001 issue.
APSnet "Image of the Week", illustrating sporulation of *Blumeria jaapii* on tart cherry leaves. American Phytopathological Society website.
Final Year Prize in Biological Sciences for the top senior in the class, University of Reading, 1993.

SCHOLARSHIP ACCOMPLISHMENTS:**Refereed Publications:****Book Chapters:**

- Medendorp, J., Payumo, J., Weebaddee, C., Zarka, K., Hokanson, K., **Wharton, P.S.**, Douches, D., 2021. Case Study: A Roadmap for Developing Capacity in Plant Biotechnology Field Research. In: *Current Topics in Agricultural Sciences*, Vol. 1.
- Moore, A., Sullivan, D., Olsen, N., Hutchinson, P.J.S., **Wharton, P.S.**, and Wenninger, E.J. 2020. Organic Potato Production. In: *Potato Production Systems*, Springer.
- Kirk, W.W., and **Wharton, P.S.** 2014. Fungal and bacterial disease aspects of potato production. In: *The Potato: Botany, Production and Uses*, CABI.
- Baker, K.M., **Wharton, P.S.**, Stein, J., Paz, J., and Kirk, W.W. 2009. Building True Forecasts into Crop Disease Management Systems. In: *Computers in Agriculture*, Nova Science Publishers.

Journals:

(* - graduate student; ** - undergraduate student)

- Wharton, P.S.**, *Dangi, S., Begum, M. M., Douches, D., and Hokanson, K.E. (2023). Genotypic characterization of *Phytophthora infestans* populations in Bangladesh. *Plant Pathology* 72(6), 1136-1148. <https://doi.org/10.1111/ppa.13725>
- Woodhall, J.W., Brown, L., Harrington, M., Murdock, M., Pizolotto, C.A., **Wharton, P.S.**, and Duellman, K. (2022). Anastomosis groups of *Rhizoctonia solani* and binucleate *Rhizoctonia* associated with potatoes in Idaho. *Plant Disease* 106(12) 3127-3132. <https://doi.org/10.1094/PDIS-12-21-2683-RE>.
- *Dangi, S., **Wharton, P.S.**, Ambarwati, A.D., Santoso, T-J., Kusmana, Sulastri, I., Medendorp, J., Hokanson, K., and Douches, D. (2021). Genotypic and phenotypic characterization of *Phytophthora infestans* populations on Java, Indonesia. *Plant Pathology* 70(1) 61-73. <https://doi.org/10.1111/ppa.13269>
- Wenninger, E.J, Olsen, N., Lojewski, J., **Wharton, P.S.**, Dahan, J., Rashed, A. and Karasev, A.V. (2020). Effects of potato psyllid vector density and time of infection on zebra chip disease development after harvest and during storage. *American Journal of Potato Research* 97, 278–288 (2020). <https://doi.org/10.1007/s12230-020-09772-6>.
- Woodhall, J.W, Barbour, K., Fairchild, K., and **Wharton, P.S.** (2020). First Report of *Rhizoctonia solani* Anastomosis Group 2-1 Affecting Shoots of *Humulus lupulus* in Idaho. *Plant Disease* 104(9), 2520. <https://doi.org/10.1094/PDIS-11-19-2410-PDN>
- Woodhall J.W., Harrington M., Maggard R., Guggenheim R., Keith S., Fallahi E., and **Wharton P.S.** (2020) Binucleate *Rhizoctonia*(*Ceratobasidium*) AG E affecting red raspberry (*Rubus idaeus*) plants in Idaho. *Plant Disease* 104(1) 281. <https://doi.org/10.1094/PDIS-05-19-0993-PDN>
- Woodhall J.W., Oropeza A., Guggenheim R., Keith S., and **Wharton P.S.** (2019). First Report of *Rhizoctonia solani* AG4 HG-II Causing Stem Rot of Snow Pea in Idaho. *Plant Disease* 103(10) 2668. <https://doi.org/10.1094/PDIS-05-19-0990-PDN>.
- Bissonnette, K.M., **Wharton, P.S.**, Chen, J. and Marshall, J.M. (2018). Survey of Fusarium Species Associated with Fusarium Head Blight of Spring Wheat (*Triticum aestivum*) in Southeastern Idaho. *Plant Health Progress* 19:125-127.
- Santin Azcona, J., Woodhall, J.W., Perkins, K., Henderson, D., Barnes, A.V., **Wharton, P.S.**, and Henry, C. (2017) First report of *Rhizoctonia solani* AG1-IB on *Rosmarinus officinalis* in the United Kingdom. *New Disease Reports* 35, 12.
- Wharton, P.S.**, Dangi, S., Kirk, W., Nolte, P., and Gevens, A. (2015) First Report of Late Blight Caused by *Phytophthora infestans* Clonal Lineage US-23 on Potato in Idaho. *Plant Disease* 99(3) 417.

- Baker, K., Lake, T. S., Benston, F., Trenary, R., **Wharton, P.S.**, Duynslager, L., and Kirk, W. (2015). Improved weather-based late blight risk management: comparing models with a ten year forecast archive. *Journal of Agricultural Science* 153(2), 245-256
- Wharton, P.S.**, and Kirk, W.W., 2014 Evaluation of biological seed treatments in combination with management practices for the control of Fusarium dry rot of potato. *Biological Control* 73, 23 – 30.
- Miles, T.D., Miles, L.A., Fairchild, K., and **Wharton, P.S.**, 2014. Screening and characterization of resistance to succinate dehydrogenase inhibitors in *Alternaria solani*. *Plant Pathology*, 63, 155–164.
- Woodhall, J.W., Lutomirska, B., Peters, J.C., and **Wharton, P.S.**, 2013. *Rhizoctonia solani* anastomosis group 3 is predominant in potato tubers in Poland. *Plant Disease* 97(9), 1245.
- Miles, T.D., Fairchild, K.L., *Merlington, A., Kirk, W.W., Rosenzweig, N., and **Wharton, P.S.**, 2013. First report of boscalid and penthiopyrad-resistant isolates of *Alternaria solani* causing early blight of potato in Michigan. *Plant Disease*, 97(12), 1655.
- Kirk, W.W., *Gachango, E., Schafer, R.L., and **Wharton, P.S.**, 2013. Effects of in-season crop-protection combined with postharvest applied fungicide on suppression of potato storage diseases caused by Fusarium pathogens. *Crop Protection*, 51, 77-84.
- Miles, T.D., Woodhall, J.W., Miles, L.A., and **Wharton, P.S.**, 2013. First report of a binucleate *Rhizoctonia* (AG-A) from potato stems infecting potatoes and sugarbeet in the Pacific Northwest. *Plant Disease* 99(12) 1657.
- Fairchild, K., Miles, T.D., **Wharton, P.S.**, 2013. Assessing fungicide resistance in populations of *Alternaria* in Idaho potato fields. *Crop Protection*, 49, 31-39.
- *Wood, E.M., Miles, T.D., **Wharton, P.S.**, 2013. The use of natural plant volatile compounds for the control of the potato postharvest diseases, black dot, silver scurf and soft rot. *Biological Control* 64, 152-159.
- Wharton, P.S.**, Kirk, W.W., Schafer, R.L., and Tumbalam, P., 2012 Evaluation of biological seed treatments in combination with management practices for the control of seed-borne late blight in potato. *Biological Control* 63, 326-332.
- *Gachango, E., Kirk, W., Schafer, R.L., and **Wharton, P.S.**, 2012. Evaluation and comparison of biocontrol and conventional fungicides for control of postharvest tuber diseases. *Biological Control* 63, 115-120.
- Woodhall, J.W., **Wharton, P.S.**, and Peters, J.C., 2012. First Report of *Rhizoctonia solani* AG4 HG-II Infecting Potato Stems in Idaho. *Plant Disease* 96(11), 1701.
- Woodhall, J.W., Belcher, A.R., Peters, J.C., Kirk, W.W., and **Wharton, P.S.**, 2012. First report of *Rhizoctonia solani* AG2-2IIIB infecting potato stems and stolons in the USA. *Plant Disease* 96(3), 460.
- Wharton P.S.**, **Fairchild, K., Belcher, A., and **Wood, E. 2012. First report of in-vitro boscalid-resistant isolates of *Alternaria solani* causing early blight of potato in Idaho. *Plant Disease* 96(3), 454.
- Kirk, W.W., *Rojas, A., Tumbalam, P.G., *Gachango, E., **Wharton P.S.**, Abu El-Samen, F., Douches, D., Coombs, J., Thill, C., Thompson, A. 2010. Effect of different genotypes of *Phytophthora infestans* (Mont. de Bary) and temperature on tuber disease development. *American Journal of Potato Research*. Vol. 87(6), 509-520.
- Kirk, W.W., Abu-El Samen, F., Tumbalam, P., **Wharton, P.S.**, Douches, D., Thill, C.A., Thompson, A. 2009. Impact of different US genotypes of *Phytophthora infestans* on potato seed tuber rot and plant emergence in a range of cultivars and advanced breeding lines. *Potato Research* 52, 121-140.

- Miles, T.D., **Wharton, P.S.**, Schilder, A.C. 2009. Cytological and chemical evidence for an active resistance response to infection by *Colletotrichum acutatum* in 'Elliott' blueberries. *Acta Horticulturae* 810, 361 – 368.
- Kirk, W. W., **Wharton, P.S.**, Schafer, R. L., Tumbalam, P., Poindexter, S., Guza, C., Fogg, R., Schlatter, T., Stewart, J. Hubbel, L. and Ruppel, D. 2008. Optimizing fungicide timing for the control of *Rhizoctonia* crown and root rot of sugar beet using soil temperature and plant growth stages. *Plant Disease* 92, 1091-1098.
- Wharton, P.S.**, Kirk, W.W, Duynslager, L., and Baker, K.M., 2008. A web-based interactive system for risk management of *Phytophthora infestans* in potato canopies in Michigan. *Computers and Electronics in Agriculture* 61, 136-148.
- Wharton P.S.**, and Schilder, A.C., 2008. Novel infection strategies of *Colletotrichum acutatum* on ripe blueberry fruit. *Plant Pathology* 57, 122-134.
- Almenar, E., Auras, R.A., **Wharton, P.S.**, Rubino, M., and Harte, B., 2007. Release of acetaldehyde from β -cyclodextrins inhibits postharvest decay fungi *in vitro*. *J. Agric. Food Chem.* 55: 7205-7212.
- Wharton, P.S.**, Kirk, W.W., Berry, D.R., and Tumbalam, P.G., 2007. Evaluation of seed piece fungicides for control of seed-transmitted *Fusarium* dry rot of potatoes. *Amer. J. Potato Res.* 84: 237-244.
- Wharton, P.S.**, Tumbalam, P., and Kirk. W. W., 2006. First report of potato tuber sprout rot caused by *Fusarium sambucinum* in Michigan. *Plant Disease* 90: 1460. doi: 10.1094/PD-90-1460B.
- Kirk, W. W., da Rocha, A.B., Hollosy, S.I., Hammerschmidt, R., and **Wharton, P.S.**, 2006. Effect of soil salinity on internal browning of potato tuber tissue in two soil types. *Amer. J. Potato Res.* 83: 223-232.
- Schilder, A.M.C., and **Wharton, P.S.**, 2005. The infection process of *Colletotrichum acutatum* on blueberries. *Acta Horticulturae* No. 715: 513-518.
- Wharton, P.S.**, and Schilder, A.M.C., 2005. Effect of temperature on the longevity of and ascospore discharge by apothecia of *Monilinia vaccinii-corymbosi*. *Plant Disease*, 89:397-404.
- Wharton P.S.**, and Iezzoni, A., 2005. Development of a protocol for screening cherry germplasm for resistance to cherry leaf spot. *Acta Horticulturae* No. 667: 509-514.
- Wharton, P.S.**, and Diéguez-Urbeondo, J. 2004. The biology of *Colletotrichum acutatum*. *Anales del Jardín Botánico de Madrid*, 61:3-22.
- Wharton, P.S.**, Iezzoni, A., and Jones, A.L., 2003. Screening cherry germplasm for resistance to leaf spot. *Plant Disease*, 87: 471-477.
- Hutchison, K.A., Green, J.R., **Wharton, P.S.**, and O'Connell, R.J., 2002. Identification and localization of glycoproteins in the extracellular matrices around germ-tubes and appressoria of *Colletotrichum* species. *Mycological Research*, 106(6): 729-736.
- Wharton, P.S.**, Julian, A.M., and O'Connell, R.J. 2001. Ultrastructure of the infection of *Sorghum bicolor* by *Colletotrichum sublineolum*. *Phytopathology*, 91(2): 149-158.
- Wharton, P.S.**, and Nicholson, R.L. 2000. Temporal synthesis and incorporation of [¹⁴C]-phenylalanine into the sorghum 3-deoxyanthocyanidin phytoalexins and the anthocyanin, cyanidin 3-dimalonyl glucoside. *New Phytologist*, 145(3), 457-469.
- Wharton, P.S.**, and Julian, A.M., 1996. A cytological study of compatible and incompatible interactions between *Sorghum bicolor* and *Colletotrichum sublineolum*. *New Phytologist*, 134, 25-34.

Peer Reviewed/Evaluated:**Current Information Series and Extension Bulletins:**

- Olsen, N., Adjesiwor, A., Spear, R., Thornton, M., Wenninger, E., Miller, J., and **Wharton, P.S.** 2022. Agronomics of Leasing Fields for Potato Production. *University of Idaho CIS Bulletin 1038*.
- Duellman, K., **Wharton, P.S.**, Olsen, N., Woodhall, J., and Whitworth, J. 2022. Managing Bacterial Ring Rot of Potato. *University of Idaho CIS Bulletin 1021*.
- Wharton, P.S.**, and Wood, E.M., 2014. White Mold. *University of Idaho CIS Bulletin 1200*.
- Wharton, P.S.**, and Wood, E.M., 2013. Rhizoctonia stem canker and black scurf of potato. *University of Idaho CIS Bulletin 1198*.
- Wharton, P.S.**, and Wood, E.M., 2013. Early Blight biology and control in potatoes. *University of Idaho CIS Bulletin 1196*.
- Woodell, L., Olsen, N., Karasev, A., Miller, J., Thornton, M., **Wharton, P.S.**, and Nolte, P., 2013. Portable test kits for diagnosing potato diseases. *University of Idaho CIS Bulletin 883*.
- Olsen, N., **Wharton, P.S.**, and Nolte, P., 2012. Superficial Growth on Potatoes. *University of Idaho CIS Bulletin 1191*.
- Kirk, W.W., Merlington, A., and **Wharton, P.S.**, 2012. Black Dot. *Michigan State University Extension Bulletin E-3181*.
- Kirk, W.W., and **Wharton, P.S.**, 2012. Brown Leaf Spot. *Michigan State University Extension Bulletin E-3182*.
- Wharton, P.S.**, and Kirk, W.W., 2007. A Pocket Guide to Disease Scouting in Michigan Potatoes. *Michigan State University Extension Bulletin E-2998*.
- Wharton, P.S.**, and Kirk, W.W., 2007. White Mold. *Michigan State University Extension Bulletin E-2989*.
- Wharton, P.S.**, Driscoll, J., Douches, D., Hammerschmidt, R., and Kirk, W.W., 2007. Common Scab. *Michigan State University Extension Bulletin E-2990*.
- Wharton, P.S.**, and Kirk, W.W., 2007. Early Blight. *Michigan State University Extension Bulletin E-2991*.
- Wharton, P.S.**, and Kirk, W.W., 2007. Fusarium Dry Rot. *Michigan State University Extension Bulletin E-2992*.
- Wharton, P.S.**, and Kirk, W.W., 2007. Pink Rot. *Michigan State University Extension Bulletin E-2993*.
- Wharton, P.S.**, Kirk, W. W., Berry, D., and Snapp, S., 2007. Rhizoctonia Stem Canker and Black Scurf of Potato. *Michigan State University Extension Bulletin E-2994*.
- Wharton, P.S.**, and Kirk, W.W., 2007. Seed Piece Health Management. *Michigan State University Extension Bulletin E-2995*.
- Kirk, W. W., **Wharton, P.S.**, Hammerschmidt, R., Abu-El Samen, F., and Douches, D., 2004. Late Blight. *Michigan State University Extension Bulletin E-2945*.
- Wharton, P.S.**, and Schilder, A.M.C., 2003. Blueberry Fruit Rot Identification Guide. *Michigan State University Extension Bulletin E-2847*.

IMPACT Statements:

- Wharton, P.S.**, 2012. Use of natural plant volatiles to control potato postharvest diseases. *University of Idaho Cooperative Extension System IMPACT Statement*.

Wharton, P.S., 2011. Preventing yield losses in potato from late blight outbreaks. *University of Idaho Cooperative Extension System IMPACT Statement*.

Wharton, P.S., 2011. The impact of fungicide resistance on early blight disease management. *University of Idaho Cooperative Extension System IMPACT Statement*.

Abstracts and Proceedings:

(* - graduate student; ** - undergraduate student)

Begum, M.M., **Wharton, P.S.**, Dangi, S., Douches, D., and Hokanson, K. Genotypic and phenotypic characterization of *Phytophthora infestans* populations in Bangladesh. Australasian Plant Pathology Society Meeting, November 20 – 24, Adelaide, Australia 2023. (contributed)

Wharton, P.S., Dangi, S., and Woodhall, J.W. Rapid on-site detection of *Phytophthora infestans* using real-time loop-mediated isothermal amplification (LAMP). Australasian Plant Pathology Society Meeting, November 20 – 24, Adelaide, Australia 2023. (contributed)

Malek, K., Malek, A., Luff, K., and **Wharton, P.S.** New fungicide alternatives to fumigation for managing potato early die. International Congress of Plant Pathology, August 19 – 26, Lyon, France 2023. (contributed)

P.S. Wharton, K.L. Malek, A. Malek, E. Magembe, J. Odingo, M. Nyongesa, M. Mbiyu, E. Nnadi, M. Ghislain, K. Hokanson and D. Douches. Phenotypic and Genotypic characterization of *Phytophthora infestans* isolates from Kenya and Nigeria. International Congress of Plant Pathology, August 19 – 26, Lyon, France 2023. (contributed)

Malek, A., Malek, K., Newberry, G.D., and **Wharton, P.S.** Evaluation of fungicide programs for the management of Aerial Stem Rot in potato. International Congress of Plant Pathology, August 19 – 26, Lyon, France 2023. (contributed)

Wharton, P.S., Sulastrini, I., Kusmana, Ambarwati, A.D., Santoso, T., Douches, D., and Hokanson, K. Efficacy of 3 R-gene late blight resistant potato cultivars in preventing infection by *Phytophthora infestans* in confined field trials in Indonesia. International Society for Biosafety Research, April 30 – May 4, St Louis, Missouri 2023. (invited)

Duellman, K.M., Christian, C.L., Lent, M.A., Malek, K.L., Malek, A., and **Wharton, P.S.** Fludioxonil resistance detected in potato storage-collected isolates of *Fusarium sambucinum* in the Pacific Northwest. American Phytopathological Society Pacific Division Meeting, March 14 - 16, Tucson, Arizona 2023. (contributed)

Wharton, P.S., Malek, K.L., Malek, A., and Woodhall, J.W. Occurrence of fungicide resistance in *Rhizoctonia solani* and its effects on management of *Rhizoctonia* diseases of potato in Idaho. 11th Australasian Soilborne Diseases Symposium. August 1-5, Cairns, Australia 2022.

Wharton, P.S., Sulastrini, I., Kusmana, Ambarwati, A.D., Santoso, T., Douches, D., and Hokanson, K. Efficacy of 3 R-gene late blight resistant potato cultivars in preventing infection by *Phytophthora infestans* in confined field trials in Indonesia. World Potato Congress, May 30 – June 2, Dublin, Ireland 2022. (abstract)

Malek, A., Malek, K., Anderson, S., and **Wharton, P.S.** The use of volatile organic compounds to control postharvest potato diseases. World Potato Congress, May 30 – June 2, Dublin, Ireland 2022. (abstract)

Malek, K., Malek, A., Anderson, S., and **Wharton, P.S.** Occurrence of fungicide resistance in anastomosis groups of *Rhizoctonia solani* in Idaho. World Potato Congress, May 30 – June 2, Dublin, Ireland 2022. (abstract)

Wharton, P.S., Sulastrini, I., Kusmana, Ambarwati, A.D., Santoso, T., Douches, D., and Hokanson, K. Efficacy of 3 R-gene late blight resistant potato cultivars in preventing infection by *Phytophthora infestans* in confined field trials in Indonesia. Euroblight Workshop, May 9-12, Ascona, Switzerland 2022 (abstract).

Douches, D., Zarka, K., Hokanson, K., **Wharton, P.S.** USAID Feed the Future Biotechnology Potato Partnership: 2021 Update. Potato Association of America Annual Meeting (Virtual), July 26-28, 2021. (abstract).

- Douches, D., Zarka, K., Hokanson, K., **Wharton, P.S.**, Fierro, J., Coombs, J., and Richael, C. USAID Feed the Future Biotechnology Potato Partnership: 2020 Update. Potato Association of America Annual Meeting (Virtual), July 17, 2020. (abstract).
- *Dangi, S., Begum, M.M., Hokanson, K.E., Douches, D.S., and Wharton, P.S. Genotypic and phenotypic characterization of *Phytophthora infestans* populations in Bangladesh. Potato Association of America Annual Meeting (Virtual), July 17, 2020. (abstract).
- Wharton, P.S., Woodhall, J., Pizzolotto, C., Harrington, M., Fairchild, K., Malek, A. and Duellman, K. A spore trapping network for the early detection of potato pathogens in the USA. Australasia Plant Pathology Society Meeting, Melbourne, Australia, 24 – 29 Nov, 2019. (proceedings)
- Wharton, P.S., *Dangi, S., Sulastrini, I., Kusmana, Santoso, T., Ambarwati, A.D. and Douches, D. Genotypic and phenotypic characterization of *Phytophthora infestans* isolates from Indonesia. Australasia Plant Pathology Society Meeting, Melbourne, Australia, 24 – 29 Nov, 2019. (proceedings)
- Woodhall J., Oropeza A., Harrington M., Keith S., *Dangi S., Fairchild K., Malek A., Duellman K.M., Marshall J.M. and **Wharton P.S.** 2019. A spore trap network for the early detection of plant pathogens in Idaho. American Phytopathology Society Annual Meeting, Cleveland. Aug 3 – 7. (abstract)
- Fairchild, K.L., Malek, A.L., and **Wharton, P.S.** Long term patterns in the resistance of *Alternaria solani* and *A. alternata* species to commonly used SDHI fungicides in Idaho. Potato Association of America Annual Meeting, Winnipeg, Canada 28 Jul – 1 Aug 2019. (proceedings)
- Malek, A.L., Fairchild, K.L., *Dangi, S. and Wharton, P.S. Evaluation of fungicide programs for the control of Early Die in potato in Idaho. Potato Association of America Annual Meeting, Winnipeg, Canada 28 Jul – 1 Aug 2019. (proceedings)
- *Dangi, S., Douches, D. and **Wharton, P.S.** Genotypic characterization of *Phytophthora infestans* isolates from Indonesia. Potato Association of America Annual Meeting, Winnipeg, Canada 28 Jul – 1 Aug 2019. (proceedings)
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- Wharton, P.S.,** Woodhall, J., Pizzolotto, C., 2020. Weekly Spore Trapping Bulletin number 5. Crop Alerts website, www.cropalerts.org, July 2, 2020.
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- Wharton, P.S.** Potato Pest Alert 6-12-2015. PNW Pest Alert website and idahopotatodisease.org
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- Wharton, P.S.** Potato Pest Alert 6-26-2015. PNW Pest Alert website and idahopotatodisease.org
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- Wharton, P.S., 2013.** The University of Idaho has just released its recommendations for Potato Psyllid and Zebra Chip Management at <http://bit.ly/ZM44lb>. *News Release* through Twitter, 9 May, 2013.
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- Kirk, W.W., Schafer, R.L., Tumbalam, P., and **Wharton, P.S.**, 2008. Seed, in-furrow and emergence treatments for control of seed- and soil-borne *Rhizoctonia*, 2007. *Plant Disease Management Reports* 2:ST023.
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- Kirk, W.W., Schafer, R.L., Tumbalam, P., and **Wharton, P.S.**, 2008. Evaluation of fungicide programs for potato early blight and brown leaf spot control, 2007. *Plant Disease Management Reports* 2:V065.
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- Kirk, W.W., Schafer, R.L., **Wharton, P.S.**, Tumbalam, P., and Berry, D. 2007. Seed and seed plus foliar treatments for control of seed- and soil-borne *Rhizoctonia solani*, 2006. *Plant Disease Management Reports* 1:ST016.
- Kirk, W.W., Schafer, R.L., Tumbalam, P., Berry D., and **Wharton, P.S.**, 2007. Evaluation of fungicide programs for potato brown spot and grey mold control, 2006. *Plant Disease Management Reports* 1:V115.
- Kirk, W.W., R.L. Schafer, P. Tumbalam, D. Berry and **P.S. Wharton.** 2006. Evaluation of fungicide programs for potato late blight control, 2005. *F&N Tests* Vol 61:V006.
- Kirk, W.W., R.L. Schafer, P. Tumbalam, D. Berry and **P.S. Wharton.** 2006. Evaluation of Ranman, EBDC and chlorothalonil-based programs for potato late blight control, 2004. *F&N Tests* Vol 61:V005.
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- Kirk, W.W., R.L. Schafer, P. Tumbalam, D. Berry and **P.S. Wharton.** 2005. Evaluation of Tanos fungicide programs for potato late blight control, 2004. *F&N Tests* Vol 60:VO78.
- Kirk, W.W., R.L. Schafer, P. Tumbalam, D. Berry and **P.S. Wharton.** 2005. Evaluation of Ranman, EBDC and chlorothalonil-based programs for potato late blight control, 2004. *F&N Tests* Vol 60:V088.

Refereed/Adjudicated (in press or submitted):

Journals:

(* - graduate student; ** - undergraduate student)

Peer Reviewed (in press or submitted):

Wharton, P.S., *Dangi, S., and Woodhall, J.W. Development of an innovative loop-mediated isothermal amplification (LAMP) assay for the rapid on-site detection of *Phytophthora infestans*. *Plant Disease* (Accepted 11/30/23)

Research Reports:**Current Information Series and Extension Bulletins:**

Duellman, K.D., and Wharton, P.S. Common Scab of Potato (Accepted, pending revision)

Scholarly Presentations and Other Creative Activities:**Scholarly Presentations**

(* - graduate student; ** - undergraduate student)

Wharton, P.S. Silver Linings and Black Dots: Detecting, Diagnosing and Managing Silver Scurf and Black Dot in Potatoes. 2023 Mid-Michigan Agronomy Growers Symposium, November 28 – 29. De Witt, Michigan. **(invited)**

Wharton P.S., 2023. Development of 3 R-gene late blight resistant cultivars for Indonesia. USAID Feed the Future Global Biotechnology Potato Partnership Growers Communication Workshop. September 18, 2023, Harris Hotel, Bandung, Indonesia.

Wharton, P.S., In Season Management of Storage Rot Pathogens of Potato. Potato Link, Australian Potato Industry Communication and Extension Project (virtual) August 18, 2022. <https://bit.ly/3kw42mB>. **(invited).**

Wharton, P.S. Occurrence of fungicide resistance in *Rhizoctonia solani* and its effects on management of Rhizoctonia diseases of potato in Idaho. 11th Australasian Soilborne Diseases Symposium. August 1-5, Cairns, Australia 2022. **(invited)**

Wharton, P.S. Efficacy of 3 R-gene late blight resistant potato cultivars in preventing infection by *Phytophthora infestans* in confined field trials in Indonesia. Euroblight Workshop, May 9-12, Ascona, Switzerland 2022. **(invited)**

Wharton, P.S. Investigating the causal agents of early die in Northwest potato production. Northwest Potato Research Consortium funding meeting, (virtual) February 3, 2021.

Wharton, P.S. Development of 3 R-gene late blight resistant cultivars for Indonesia and Bangladesh. EPPN Seminar series, (virtual) February 22, 2021.

Wharton, P.S. Distinguishing Potato Early Die vs Grey Mold symptoms. Potato Pests and Diseases Advisory Meeting, (virtual) March 4, 2021.

***Dangi, S., Begum, M.M., Hokanson, K.E., Douches, D.S., and Wharton, P.S.** Genotypic and phenotypic characterization of *Phytophthora infestans* populations in Bangladesh. Potato Association of America Annual Meeting (Virtual), July 17, 2020. (contributed)

Wharton, P.S., *Dangi, S., Sulastrini, I., Kusmana, Santoso, T., Ambarwati, A.D. and Douches, D. Genotypic and phenotypic characterization of *Phytophthora infestans* isolates from Indonesia. Australasia Plant Pathology Society Meeting, Melbourne, Australia, 24 – 29 Nov, 2019. **(invited)**

***Dangi, S., Douches, D. and Wharton, P.S.** Genotypic characterization of *Phytophthora infestans* isolates from Indonesia. Potato Association of America Annual Meeting, Winnepeg, Canada 28 Jul – 1 Aug 2019. (contributed)

Wharton, P.S., *Dangi, S., Champouret, N., Duan, H., Sulastrini, I. and Douches, D. Development of durable resistance to late blight in Indonesia. EuroBlight Symposium. York, UK, 12 – 16 May 2019. **(invited)**

- Wharton, P.S.,** *Dangi, S., Champouret, N., Duan, H., Douches, D. and Hokanson, K. Managing adaptation of the potato late blight pathogen to disease resistance genes. 15th International Society for Biosafety Research, Tarragona, Spain, 1 – 4 April, 2019. **(invited)**
- Wharton, P.S.,** Duynsalger, L., Fairchild, K.L., and Malek, A., 2018. Modelling effects of climate change on the overwinter survival of *Phytophthora infestans* in potato tubers in Idaho. 10th Australasian Soil borne Diseases Symposium, Adelaide, South Australia. 4-7th September 2018 **(invited)**
- Wharton, P.S.,** *Dangi, S. Begum, M., and Douches, D., 2018. Characterization of *Phytophthora infestans* isolates from Bangladesh. Potato Association of America Annual Meeting, Boise, 22-26 July 2018. (contributed).
- Wharton, P. S.,** *Dangi, S., and Woodhall, J. Using LAMP AND qPCR assays to investigate the epidemiology of *Pythium ultimum* in potato. The Conference on Soilborne Plant Pathogens, Davis, CA, March 28 – 30, 2017 (contributed).
- Wharton, P.S.,** Late Blight, isolation and culturing techniques. Training Workshop for Participants of the Legacy Potato and Feed the Future Biotechnology Potato Partnership (FtF BPP) Projects. Bogor, Indonesia, January 23-27, 2017. **(invited)**
- Wharton, P.S.,** Mitigating disease risk during storage and transit. Idaho Potato Commission Export Seminar. Pocatello, Idaho Jan 19, 2017. **(invited)**
- Wharton, P.S.,** Carrillo, I., Fairchild, K.L., and Woodhall, J.W. 2016. Management of Pythium leak of potato from field to storage in Idaho, USA. 9th Australasian Soilborne Diseases Symposium. Lincoln University, Christchurch, New Zealand 14–17 November 2016. (contributed)
- Wharton, P.S.,** Gray Mold: Biology, Management and Control. Idaho Association of Plant Protection, Jerome, ID, Nov 2016. **(invited)**.
- Wharton, P.S.** 2E-hexenal, the future of potato disease control in storage. AMVAC Headquarters, Newport Beach, CA., April 2016. **(invited)**
- Wharton, P.S.** In Season Management of Storage Rot Diseases. McCain Grower Meeting, Burley, ID. March 2016. **(invited)**
- Wharton, P.S.** Controlling seed piece decay. McCain Grower Meeting, Othello, WA. March 2016. **(invited)**
- Wharton, P.S.,** Modern Methods for Detection and Identification of Potato Pathogens. Washington-Oregon Potato Conference, Pasco, WA, January 2016. **(invited)**.
- Wharton, P.S.** Rapid detection of potato pathogens using LAMP. Washington-Oregon Potato Conference, Pasco, WA, January 2016. **(invited)**.
- Wharton P.S.** Identification and management of bacterial soft rot in potatoes. Idaho Association of Plant Protection. Jerome, ID, November 2015. (contributed).
- Wharton, P.S.,** Biology and control of potato diseases in Idaho. Biological Sciences Department, California Polytechnic University, 2015. **(invited)**
- Wharton, P.S.,** Woodhall, J.W., Fairchild, K.L. Rapid detection of potato pathogens using Loop Mediated Isothermal Amplification (LAMP). Potato Association of America Annual meeting, Portland, ME, July 2014. (contributed)
- Wharton, P.S.,** Biology and control of potato diseases in Idaho. Nichino Annual Meeting, St. Petersburg, FL., December 2014. **(invited)**

- Wharton, P.S.**, Potato disease management in Idaho. New South Wales Department of Primary Industries, Gosford, NSW, August 12th, 2014 (**invited**)
- Wharton P.S.**, and Wood, E.M., The use of volatile organic compounds to control postharvest potato pathogens. International Horticultural Congress 2014, Brisbane, Australia, August 2014. (contributed)
- Wharton, P.S.**, Fairchild, K.L., Woodhall, J.L., and Miles, T.D. Anastomosis group, pathogenicity and fungicide sensitivity of *Rhizoctonia solani* isolates collected in the United States. International Horticultural Congress 2014, Brisbane, Australia, August 2014. (contributed)
- Wharton, P.S.**, Wood, E.M., Miles, T.D., Agronomical factors affecting the development of black dot in storage. Annual Meeting of The Potato Association of America, Quebec City, Canada, July 28-Aug 1, 2013.
- Wharton, P.S.**, Two new threats to potato production: Zebra Chip and PVY^{ntn}. Guelph Potato Growers Meeting, Guelph, Ontario, Canada, March 5, 2013. (invited)
- Wharton, P.S.**, Effective strategies to reduce the incidence of Fusarium diseases. Guelph Potato Growers Meeting, Guelph, Ontario, Canada, March 5, 2013. (invited)
- Wharton, P.S.** Managing silver scurf and black dot in storage. Wisconsin Potato and Vegetable Growers Meeting, Stevens Point, WI., February 5 – 7, 2013. (invited)
- Wharton, P.S.** Fungicide resistance management of early blight. Wisconsin Potato and Vegetable Growers Meeting, Stevens Point, WI., February 5 – 7, 2013. (invited)
- Wharton, P.S.** Characterization of boscalid resistance in *Alternaria* species causing disease on potatoes. 39th Annual Hermiston Farm Fair & Ag Trade Show, Hermiston, OR., November 28 – 30, 2012. (invited)
- Wharton, P.S.**, Miles, T.D., and Woodhall, J.W. Characterization and pathogenicity of *Rhizoctonia solani* isolates affecting potato in Idaho. Idaho Association of Plant Protection, Jerome, ID., 7 – 8 November 2012.
- Wharton, P.S.**, Fairchild, K., Miles, L.A., and Miles, T.D. Characterization of boscalid resistance in *Alternaria* species causing disease on potatoes in Idaho. Potato Association of America Meeting, Denver, CO, August 12 – 16, 2012.
- Wharton, P.S.**, Potato Disease Management in Idaho. J.R. Simplot Company African Meetings, Boise, ID., June 24 – 30, 2012. (invited)
- Wharton, P.S.**, Molecular techniques for potato disease diagnostics. University of Idaho PLSC501 Seminar, Moscow, ID., 23 February 2012. (invited)
- Wharton, P.S.**, Fungicide resistance in *Alternaria* populations in Idaho. Bayer CropScience Crop Protection Meetings, Pocatello, ID., February 16, 2012. (invited)
- Wharton, P.S.**, Fungicide resistance in *Alternaria* populations in Idaho. Bayer CropScience Crop Protection Meetings, Twin Falls, ID., February 17, 2012. (invited)
- Wharton, P.S.** Molecular techniques for potato pathogen detection and quantification and their use in developing effective disease management strategies. J.R. Simplot Company molecular diagnostics meeting, Boise, ID., February 2, 2012. (invited)
- Wharton, P.S.** Molecular techniques for potato disease diagnostics. J.R. Simplot Company Executive Committee Seminar, Boise, ID., February 9, 2012. (invited)
- Wharton, P.S.**, and Fairchild, K. Sensitivity of *Alternaria* populations in Idaho to new and commonly used fungicides and its effect on early blight management in Idaho. Idaho Association of Plant Protection, Jerome, ID., 8 – 9 November 2011.

- Wharton, P.S.**, and **Wood, E.M. The use of natural plant volatile compounds for the control of potato blemish diseases. Potato Association of America Meeting, Wilmington, North Carolina, August 14 – 18, 2011.
- Wharton, P.S.** Potato Pathology in Idaho. The Food and Environment Research Agency, York, United Kingdom February 3, 2011. (invited).
- Wharton, P.S.**, Belcher, A.R., **Wood, E.M., 2010. Fungicide resistance in *Alternaria solani* populations in Idaho to commonly used fungicides. Idaho Association of Plant Protection, Jerome, ID., 9 – 10 November 2010.
- Wharton, P.S.**, Belcher, A.R., **Wood, E.M. Sensitivity of *Alternaria solani* populations in Idaho to commonly used fungicides and its effect on potato early blight management in Idaho. European Association of Potato Research, Pathology Section Meeting, Carlow, Ireland, 13 – 16 September, 2010. (invited)
- Wharton, P.S.**, Belcher, A.R., **Wood, E.M., 2010. Sensitivity of *Alternaria solani* populations in Idaho to commonly used fungicides. Potato Association of America Meeting, Corvallis, OR, 15 – 19 August 2010.
- Wharton, P.S.** The use of new DuPont fungicides to control pink rot in potato. DuPont Crop Protection. New Fungicides Meeting, Newark, DE, 8 – 10 February, 2010. (invited)
- Wharton, P.S.**, 2010. Evaluation of products and management options for the control or aerial stem rot caused by *Pectobacterium carotovorum*. Potandon Produce Inc. Annual Growers Meeting, Idaho Falls, ID, 19 January 2010. (invited)
- Wharton, P.S.**, 2009. Gray Mold: Biology, Management and Control. Idaho Association of Plant Protection, Jerome, ID., 9 – 10 November 2009.
- Wharton, P.S.**, 2009. Identification of Potato Diseases. Idaho Winter Conference, Jackpot, NV., 2009. (invited)
- Wharton, P.S.**, 2009. The use of fungicide seed treatments in combination with management practices for the control of seed-borne diseases of potato. Idaho Seed Potato Growers Seminar, Pocatello, ID., 2009.
- Wharton, P.S.**, 2008 Evaluation of fungicide seed treatments in combination with management practices for the control of seed-borne diseases of potato. Idaho Association of Plant Protection, Jerome, ID., 2008.
- Wharton, P.S.**, 2008. Plant disease forecasting: Risk management systems for the control of late blight in potatoes. International Short Course in Agroecology, Integrated Pest Management (IPM) and Sustainable Agriculture, June 15 – 27, 2008. Institute of International Agriculture, Michigan State University. (invited)
- Wharton, P.S.**, 2007. Integration of Crop Protection Measures for Potatoes: From the Cradle to the Grave. Purdue University, Department of Botany and Plant Pathology Seminar Series, December 2007. (invited)
- Wharton, P.S.**, 2007. Plant disease forecasting: Risk management systems for the control of late blight in potatoes. International Short Course in Agroecology, Integrated Pest Management (IPM) and Sustainable Agriculture, June 17 – 29, 2007. Institute of International Agriculture, Michigan State University. (invited)
- Wharton, P.S.**, 2005. Developing prediction and management systems for the control of Rhizoctonia diseases in potato and sugarbeet. 35th Annual Sugarbeet Research Reporting Session. January 2005, Fargo, ND. (invited)
- Wharton, P.S.**, 2003. Sorghum anthracnose: Lessons learned from a closely-related pathosystem. Biology and Management of Turfgrass Anthracnose. American Phytopathological Society 2003 Annual Meeting, Special Symposium, Charlotte NC. (invited)
- Extension Presentations, Workshops, Seminars**
(* - graduate student; ** - undergraduate student)
- Wharton P.S., 2023.** Development and deployment of 3 R-gene potato in Africa. AATF Grower Sensitization Field Day. December 13, 2023, KALRO research farm, Njabini, Kenya.

- Wharton, P.S.** Management of foliar diseases of potato. Lower Mallee and Lakes Grower Workshop. November 17, 2023, Murray Bridge Performing Art Centre, Murray Bridge, South Australia, Australia. Potato Link, Australian Potato Industry Communication and Extension Project
- Wharton, P.S.** Management of soil borne diseases of potato. Mitolo Potatoes Inc. Agronomy Team meeting. November 16, 2023, PIRSA Loxton Office, Loxton, South Australia, Australia. Potato Link, Australian Potato Industry Communication and Extension Project
- Wharton, P.S.** Management of blemish diseases of potato. Parilla Premium Potato Agronomy Team meeting. November 15, 2023, Parilla Premium Potato LLC, Parilla, South Australia, Australia. Potato Link, Australian Potato Industry Communication and Extension Project
- Wharton, P.S.** Management of foliar diseases of potato. SE South Australia Growers Workshop, November 14, 2023, Mount Gambier Golf Club, Mount Gambier, Victoria, Australia. Potato Link, Australian Potato Industry Communication and Extension Project
- Wharton, P.S.** Management of bacterial diseases of potato. Victoria Potato Growers Meeting, November 13, 2023, Bungaree Public Recreation Reserve, Bungaree, Victoria, Australia. Potato Link, Australian Potato Industry Communication and Extension Project
- Wharton P.S., 2023.** Pathology Activities Update. USAID Feed the Future Global Biotechnology Potato Partnership Technical Advisory Board Meeting (virtual) November 9, 2023.
- Wharton P.S., 2023.** Development of 3 R-gene late blight resistant cultivars for Indonesia. USAID Feed the Future Global Biotechnology Potato Partnership Growers Communication Workshop. September 18, 2023, Harris Hotel, Bandung, Indonesia.
- Wharton, P.S., 2023.** Potato Pathology field trials update. Aberdeen R&E Center potato IPM Field Day. August 16, 2023, Aberdeen, ID.
- Wharton P.S., 2023.** Late blight disease assessment protocol for assessing disease incidence and severity in confined field trials. USAID Feed the Future Global Biotechnology Potato Partnership training workshop. May 31, 2023, KALRO research station, Molo, Kenya.
- Wharton P.S., 2023.** Late blight disease assessment protocol for assessing disease incidence and severity in confined field trials. USAID Feed the Future Global Biotechnology Potato Partnership training workshop. May 30, 2023, KALRO research farm, Njabini, Kenya.
- Wharton P.S., 2023.** Late blight disease assessment protocol for assessing disease incidence and severity in confined field trials. USAID Feed the Future Global Biotechnology Potato Partnership training workshop. May 29, 2023, International Livestock Research Institute, Nairobi, Kenya.
- Wharton P.S., 2023.** Procedures for harvesting and grading potatoes in confined field trials. USAID Feed the Future Global Biotechnology Potato Partnership training workshop. March 2, 2023, KALRO research station, Molo, Kenya.
- Wharton P.S., 2023.** Procedures for harvesting and grading potatoes in confined field trials. USAID Feed the Future Global Biotechnology Potato Partnership training workshop. March 1, 2023, KALRO research farm, Njabini, Kenya.
- Wharton P.S., 2023.** Procedures for harvesting and grading potatoes in confined field trials. USAID Feed the Future Global Biotechnology Potato Partnership training workshop. February 28, 2023, International Livestock Research Institute, Nairobi, Kenya.
- Wharton P.S., 2023.** Pathology Activities Update. USAID Feed the Future Global Biotechnology Potato Partnership Technical Advisory Board Meeting (virtual) February 27, 2023.

- Olsen, N., Wenninger, E., Adjesiwor, A., Spear, R., Miller, J., Thornton, M., and Wharton, P.S. 2023.** Agronomics of leasing land for potato production workshop. 2023 University of Idaho Potato Conference, Pocatello, Idaho, January 2023.
- Wharton, P.S., Duellman, Miller, J., and Woodhall, J. 2023.** Plant Pathology Field Trials in southern Idaho: How trials are conducted and selected results. 2023 University of Idaho Potato Conference, Pocatello, Idaho, January 2023.
- Wharton, P.S., and Miller, J. 2023.** In-season and pre-storage foliar diseases. 2023 University of Idaho Potato Conference, Pocatello, Idaho, January 2023.
- Wharton, P.S., 2022.** Using Agriculture Research Management (ARM) software to design and manage potato field trials (USAID training workshop). August 30-31, International Livestock Research Institute, Nairobi Kenya.
- Wharton, P.S. 2022.** Development of 3 R-gene late blight resistant cultivars for Indonesia and Bangladesh progress update. USAID Feed the Future Global Biotechnology Potato Partnership Team Meeting (virtual) March 30, 2022.
- Wharton, P.S., Richael, C., and Dandurand L. 2022.** Alternatives to fumigation – breeding, disease and nematode perspectives. 2022 University of Idaho Potato Conference, Pocatello, Idaho, January, 2022.
- Wharton, P.S., Hutchison, P., Duellman, K., Wenninger, E., Rashed, A., and Adjesiwor, A. 2022.** Pesticide Resistance. 2022 University of Idaho Potato Conference, Pocatello, Idaho, January, 2022.
- Wharton, P.S., and Miller, J. 2022.** Management of fungal potato diseases. 2022 University of Idaho Potato Conference, Pocatello, Idaho, January, 2022.
- Wharton, P.S., 2021.** Doppelgängers. Knowing your potato blemish diseases. Mid-Michigan Agronomy Meeting, Dewitt MI, November 30 – December 1, 2021.
- Wharton, P.S., 2021.** Managing Early Die in Potatoes. 2021 University of Idaho Potato Conference, (Virtual), January, 2021.
- Wharton, P.S., 2020.** USAID Feed the Future Biotechnology Potato Partnership, Bangladesh Project Progress Update. US Embassy Bangladesh Biotech Virtual Tour, December, 2020.
- Wharton, P.S., 2020.** Using Agriculture Research Management (ARM) software to design and manage potato field trials (training seminar). Indonesia Vegetable Research Institute, Lembang, West Java, Indonesia. February, 2020.
- Wharton, P.S., 2020.** Genotypic characterization of *Phytophthora infestans* isolates from Indonesia. 2020 University of Idaho Potato Conference, Pocatello, Idaho, January, 2020.
- Wharton, P.S., 2020.** Soil-borne potato disease management in Idaho. 2020 University of Idaho Potato Conference, Pocatello, Idaho, January, 2020.
- Wharton, P.S., 2020.** Managing silver scurf and black dot in storage. 2020 University of Idaho Potato Conference, Pocatello, Idaho, January, 2020.
- Wharton, P.S. 2019.** Experimental design and data collection for genetically modified potato confined field trials (training seminar). Indonesia Vegetable Research Institute, Lembang, West Java, Indonesia. December, 2019.
- Wharton, P.S. 2019.** Experimental design and data collection for genetically modified potato confined field trials (training seminar). Bangladesh Agriculture Research Institute, Gazipur, Bangladesh, December 2019.
- Wharton, P.S., 2019.** In-season management of storage rot pathogens of potato. Mid-Michigan Agronomy Symposium, Lansing Michigan, Dec 2 – 3, 2019.

- Wharton, P.S., 2019.** Managing Foliar Potato Diseases with Traditional Weather-Based Risk Management Systems and Modern Spore Trapping Networks. Mid-Michigan Agronomy Symposium, Lansing Michigan, Dec 2 – 3, 2019.
- Wharton, P.S., 2018.** Optimal contiditons for handling and storage of Idaho potatoes (training seminar). Eastern Green Co. Headquarters, Singapore, Singapore, 27 October, 2018.
- Wharton, P.S., 2018.** Optimal contiditons for handling and storage of Idaho potatoes (training seminar). Cold Storage Inc. Headquarters, Singapore, Singapore, 25 October, 2018.
- Wharton, P.S., 2018.** Optimal contiditons for handling and storage of Idaho potatoes (training seminar). Tesco Malaysia Ltd. Headquarters, Kuala Lumpur, Malaysia, 25 October, 2018.
- Wharton, P.S., 2018.** Optimal contiditons for handling and storage of Idaho potatoes (training seminar). Cold Storage Malaysia Inc. Headquarters, Kuala Lumpur, Malaysia, 24 October, 2018.
- Wharton, P.S., 2018.** Optimal contiditons for handling and storage of Idaho potatoes (training seminar). Giant Malaysia Inc. Headquarters, Kuala Lumpur, Malaysia, 24 October, 2018.
- Wharton, P.S., 2018.** Optimal contiditons for handling and storage of Idaho potatoes (training seminar). EuroAtlantic Co. Headquarters, Kuala Lumpur, Malaysia, 23 October, 2018.
- Wharton, P.S., 2018.** Reducing diseae risk during transit (training seminar). Carrefour Group Headquarters, Taipei, Taiwan 30 April, 2018.
- Wharton, P.S., 2018.** Reducing disease risk during transit (training seminar). Sun Fresh Vegetable Co. Ltd. Yun Lin, Taiwan, 29 April, 2018.
- Wharton, P.S., 2018.** 2E-Hexenal: The future of potato disease control in storage (advisory board meeting). SunRain Inc. Idaho Falls, Febuary 2018.
- Wharton, P.S., 2018.** Genotyping of *Phytophthora infestans* isolates from Indonesia and Bangladesh (advisory board meeting). USAID Feed the Future Biotechnology Potato Partnership Technical Advisory Board meeting. Bogor, Indonesia, January 2018.
- Wharton, P.S., 2018.** Identification and management of bacterial soft rot in potato (seminar). 2018 University of Idaho Potato Conference, Pocatello, Idaho, January, 2018.
- Wharton, P.S., 2018.** Soil borne disease management in Idaho (seminar). 2018 University of Idaho Potato Conference, Pocatello, Idaho, January, 2018.
- Wharton, P.S., 2017.** In season management and mitigation of storage diseases (seminar). Idaho Potato Commission Reverse Trade Mission, Idaho Falls, ID, September 18, 2017. **(invited)**
- Wharton, P.S., 2017.** Reducing diseae risk during transit (seminar). Idaho Grower Shippers Association annual meeting, Sun Valley, ID, August 30, 2017. **(invited)**
- Wharton, P.S., 2017.** Late blight identification, isolation, culturing and storage techniques (training seminar). Michigan State University, East Lansing, June 27-29, 2017.
- Wharton, P.S., 2017.** Late blight diagnostics, isolation, culturing and storage techniques (training seminar). Michigan State University, East Lansing, August 17-19, 2017.
- Wharton, P.S., 2017.** Mitigating disease risk during storage and transit (seminar). Idaho Potato Commission Exporters Meeting, Singapore, April 7, 2017. **(invited)**

- Wharton, P.S.**, 2017. *2E-Hexenal: The future of potato disease control in storage* (seminar). Idaho Department of Commerce iGEM Potato meeting. Boise, Idaho, February 2, 2017. **(invited)**.
- Wharton, P.S.**, and Woodhall, J., 2017. *Molecular tools for pathogen detection and disease diagnosis*. (seminar) 2017 University of Idaho Potato Conference, Pocatello, Idaho, January, 2017.
- Wharton, P.S.**, Kinzer, K., and Miller, J., 2017. *Soilborne Disease Management* (workshop). 2017 University of Idaho Potato Conference, Pocatello, Idaho, January, 2017.
- Wharton, P.S.**, Kinzer, K., and Woodhall, J., 2017. *Diagnostics and Management of Bacterial Diseases in Potato*. 2017 University of Idaho Potato Conference, Pocatello, Idaho, January, 2017.
- Wharton, P.S.**, Kinzer, K., and Miller, J., 2017. *Foliar Disease Management* (workshop). 2017 University of Idaho Potato Conference, Pocatello, Idaho, January, 2017.
- Wharton, P.S.** *Disease management in potato*. South West Idaho Cropping School, Caldwell, ID. February 2016 (seminar)
- Wharton, P.S., Gevens, A., and Miller, J., 2016. *Late blight Management*. 2016 University of Idaho Potato Conference, Pocatello, Idaho, January, 2016.
- Olsen, N., Miller, J. and **Wharton, P.S.**, 2016. *Storage Management: Disease Control* (workshop). 2016 University of Idaho Potato Conference, Pocatello, Idaho, January, 2016.
- Wharton, P.S.**, Kinzer, K., Miller, J., and Whitworth, J., 2016. *Foliar Disease Management* (workshop). 2016 University of Idaho Potato Conference, Pocatello, Idaho, January, 2016.
- Wharton, P.S.**, Kinzer, K., Miller, J., and Whitworth, J., 2016. *Soilborne Disease Management* (workshop). 2016 University of Idaho Potato Conference, Pocatello, Idaho, January, 2016.
- Wharton, P.S.**, Hutchinson, P., and Wenninger, E., 2015. *Resistance Management: Diseases, Weeds & Insects* (seminar). 2014 University of Idaho Potato Conference, Pocatello, Idaho, January 22, 2015.
- Wharton, P.S.**, Nolte, P., Miller, J., and Whitworth, J., 2015. *Foliar Disease Management* (workshop). 2015 University of Idaho Potato Conference, Pocatello, Idaho, January 21, 2015.
- Wharton, P.S.**, Nolte, P., Miller, J., and Whitworth, J., 2015. *Soilborne Disease Management* (workshop). 2015 University of Idaho Potato Conference, Pocatello, Idaho, January 21, 2015.
- Wharton, P.S.**, *Managing Late Blight* (seminar). 2015 Idaho Potato Growers Seed Seminar, Pocatello, Idaho, January 20, 2015.
- Wharton, P.S.**, Hutchinson, P., and Wenninger, E., 2014. *Resistance Management: Diseases, Weeds & Insects* (seminar). 2014 University of Idaho Potato Conference, Pocatello, Idaho, January 22, 2014.
- Wharton, P.S.**, Nolte, P., Miller, J., and Whitworth, J., 2014. *Foliar Disease Management* (workshop). 2014 University of Idaho Potato Conference, Pocatello, Idaho, January 22, 2014.
- Wharton, P.S.**, Nolte, P., Miller, J., and Whitworth, J., 2014. *Soilborne Disease Management* (workshop). 2014 University of Idaho Potato Conference, Pocatello, Idaho, January 22, 2014.
- Wharton, P.S.**, Hutchinson, P., and Wenninger, E., 2013. *Resistance Management: Diseases, Weeds & Insects* (seminar). 2013 University of Idaho Potato Conference, Pocatello, Idaho, January 24, 2013.
- Wharton, P.S.**, Nolte, P.S., Miller, T., Miller, J., and Whitworth, J., 2013. *Disease Management* (workshop). 2013 University of Idaho Potato Conference, Pocatello, Idaho, January 24, 2013.

- Olsen, N., Miller, J. and **Wharton, P.S.**, 2013. Storage Management: Disease Control (workshop). 2013 University of Idaho Potato Conference, Pocatello, Idaho, January 23, 2013.
- Wharton P.S.**, and Miller, J., 2012. Disease management of black dot and pink rot. 2012 University of Idaho Potato Conference, Pocatello, Idaho, January 18, 2012.
- Stark, J., **Wharton, P.S.**, Thornton, M., and Patterson, P., 2012. Sustainable production of new varieties. 2012 University of Idaho Potato Conference, Pocatello, Idaho, January 18, 2012.
- Wharton, P.S.**, and Miller, J., 2012. Disease management of early and late blight. 2012 University of Idaho Potato Conference, Pocatello, Idaho, January 18, 2012.
- Wharton, P.S.**, Nolte, P., Miller, T., Miller, J., and Whitworth, J. Foliar Disease Management (workshop). 2011 University of Idaho Potato Conference, Pocatello, Idaho, January 20, 2011.
- Wharton, P.S.**, Nolte, P., Miller, T., Miller, J., and Whitworth, J. Soilborne Disease Management (workshop). 2011 University of Idaho Potato Conference, Pocatello, Idaho, January 20, 2011.
- Olsen, N., Woodell, L., Miller, J. and **Wharton, P.S.**, 2011. Storage Management: Disease Control (workshop). 2011 University of Idaho Potato Conference, Pocatello, Idaho, January 20, 2011.
- Olsen, N., Woodell, L., Miller, J. and **Wharton, P.S.**, 2011. Using Diagnostic Test Kits in the Field and in Storage (workshop). 2011 University of Idaho Potato Conference, Pocatello, Idaho, January. 19, 2011.
- Wharton, P.S.**, Nolte, P., Miller, T., Miller, J., and Whitworth, J., 2010. Foliar Disease Management (workshop). 2010 University of Idaho Potato Conference, Pocatello, ID., 2010.
- Wharton, P.S.**, Nolte, P., Miller, T., Miller, J., and Whitworth, J., 2010. Soilborne Disease Management (workshop). 2010 University of Idaho Potato Conference, Pocatello, ID., 2010.
- Wharton, P.S.**, 2009. An update on new potato storage disease research. Potato Storage Advisory Meeting, Kimberly, 16 November 2009.
- Wharton, P.S.**, Nolte, P., Miller, T., Miller, J., and Whitworth, J., 2009. Foliar Disease Management (workshop). 2009 University of Idaho Potato Conference, Pocatello, ID., 2009.
- Wharton, P.S.**, Nolte, P., Miller, T., Miller, J., and Whitworth, J. Soilborne Disease Management (workshop). 2009 University of Idaho Potato Conference, Pocatello, ID., 2009.
- Olsen, N., Frazier, M.J., Woodell, L., **Wharton, P.S.**, and Miller, J., 2009. Storage Management: Disease Control Options in Storage (workshop). 2009 University of Idaho Potato Conference, Pocatello, ID, 2009.
- Wharton, P.S.**, and Nolte, P., 2009 Overlooked Diseases that can steal your profits (seminar). 2009 University of Idaho Potato Conference, Pocatello, ID., 2009.

Web pages:

Idaho Crop Alerts Network (www.cropalerts.org)
 Idaho Potato Diseases Website (www.idahopotatodiseases.org) 20 pages.

Displays and Posters:

- (* - graduate student; ** - undergraduate student)
- Begum, M.M., **Wharton, P.S.**, Dangi, S., Douches, D., and Hokanson, K. Genotypic and phenotypic characterization of *Phytophthora infestans* populations in Bangladesh. Australasian Plant Pathology Society Meeting, November 20 – 24, Adelaide, Australia 2023. (poster)
- Wharton, P.S.**, Dangi, S., and Woodhall, J.W. Rapid on-site detection of *Phytophthora infestans* using real-time loop-mediated isothermal amplification (LAMP). Australasian Plant Pathology Society Meeting, November 20 – 24, Adelaide, Australia 2023. (poster)

- Malek, A., Malek, K., Newberry, G.D., and **Wharton, P.S.** Evaluation of fungicide programs for the management of Aerial Stem Rot in potato. International Congress of Plant Pathology, August 19 – 26, Lyon, France 2023. (poster)
- Malek, K., Malek, A., Luff, K., and **Wharton, P.S.** New fungicide alternatives to fumigation for managing potato early die. International Congress of Plant Pathology, August 19 – 26, Lyon, France 2023. (poster)
- P.S. Wharton**, K.L. Malek, A. Malek, E. Magembe, J. Odingo, M. Nyongesa, M. Mbiyu, E. Nnadi, M. Ghislain, K. Hokanson and D. Douches. Phenotypic and Genotypic characterization of *Phytophthora infestans* isolates from Kenya and Nigeria. International Congress of Plant Pathology, August 19 – 26, Lyon, France 2023. (poster)
- Wharton, P.S.**, Sulastrini, I., Kusmana, Ambarwati, A.D., Santoso, T., Douches, D., and Hokanson, K. Efficacy of 3 R-gene late blight resistant potato cultivars in preventing infection by *Phytophthora infestans* in confined field trials in Indonesia. International Society for Biosafety Research, April 30 – May 4, St Louis, Missouri 2023. (poster)
- Wharton, P.S.**, Sulastrini, I., Kusmana, Ambarwati, A.D., Santoso, T., Douches, D., and Hokanson, K. Efficacy of 3 R-gene late blight resistant potato cultivars in preventing infection by *Phytophthora infestans* in confined field trials in Indonesia. World Potato Congress, May 30 – June 2, Dublin, Ireland 2022. (poster)
- Malek, A., Malek, K., Anderson, S., and **Wharton, P.S.** The use of volatile organic compounds to control postharvest potato diseases. World Potato Congress, May 30 – June 2, Dublin, Ireland 2022. (poster)
- Malek, K., Malek, A., Anderson, S., and **Wharton, P.S.** Occurrence of fungicide resistance in anastomosis groups of *Rhizoctonia solani* in Idaho. World Potato Congress, May 30 – June 2, Dublin, Ireland 2022. (poster)
- Douches, D., Zarka, K., Hokanson, K., **Wharton, P.S.**, Fierro, J., Coombs, J., and Richael, C. USAID Feed the Future Biotechnology Potato Partnership: 2020 Update. Potato Association of America Annual Meeting (Virtual), July 17, 2020. (poster)
- Wharton, P.S.**, Woodhall, J., Pizzolotto, C., Harrington, M., Fairchild, K., Malek, A. and Duellman, K. A spore trapping network for the early detection of potato pathogens in the USA. Australasia Plant Pathology Society Meeting, Melbourne, Australia, 24 – 29 Nov, 2019. (poster)
- Woodhall J., Oropeza A., Harrington M., Keith S., *Dangi S., Fairchild K., Malek A., Duellman K.M., Marshall J.M. and **Wharton P.S.** 2019. A spore trap network for the early detection of plant pathogens in Idaho. American Phytopathology Society Annual Meeting, Cleveland. Aug 3 – 7. (poster)
- Fairchild, K.L., Malek, A.L., and **Wharton, P.S.** Long term patterns in the resistance of *Alternaria solani* and *A. alternata* species to commonly used SDHI fungicides in Idaho. Potato Association of America Annual Meeting, Winnipeg, Canada 28 Jul – 1 Aug 2019. (poster)
- Malek, A.L., Fairchild, K.L., *Dangi, S. and **Wharton, P.S.** Evaluation of fungicide programs for the control of Early Die in potato in Idaho. Potato Association of America Annual Meeting, Winnipeg, Canada 28 Jul – 1 Aug 2019. (poster)
- Malek, A., Fairchild, K.L., and **Wharton P.S.**, 2018. Evaluation of fungicide programs for the control of Aerial Stem Rot in potato. International Congress of Plant Pathology, Boston, 29 July – 3 August 2018. (poster).
- Woodhall, J., *Dangi, S., Oropeza, A., Fairchild K.L. and **Wharton P.S.**, 2018. On-site detection of potato pathogens using LAMP and portable real-time PCR. International Congress of Plant Pathology, Boston, 29 July – 3 August 2018. (poster)
- Woodhall, J., Oropeza, A., Fairchild, K.L., Malek, A., Duellman, K., and **Wharton P.S.**, 2018. A spore sampling network for early detection of foliar potato diseases in Idaho. Potato Association of America Annual Meeting, Boise, 22-26 July 2018. (poster)

- *Dangi, S., Champouret, N., Duan, H., Sulastrini, I., Douches, D.S., and **Wharton, P.S.**, 2018. Development of durable resistance to late blight in Indonesia. 10th World Potato Congress, Cusco, Peru, 27-31 May 2018. (poster)
- *Dangi, S., Douches, D., and **Wharton, P.S.** 2017. Characterization of *Phytophthora infestans* isolates from Indonesia. American Phytopathological Society meeting, San Antonio, TX, August 2017. (poster)
- *Dangi, S., Malek, A., Woodhall, J., Fairchild, K., Carrillo, I., Carrillo J., and **Wharton, P.S.**, 2017. Effect of concentration of *Pythium ultimum* inoculum in soil, harvesting and storage temperature on disease incidence and severity. American Phytopathological Society meeting, San Antonio, TX, August 2017. (poster)
- Fairchild, K., Malek, A., and **Wharton, P.S.**, 2017. Occurrence of fungicide resistance in *Alternaria* populations to commonly used fungicides in Idaho. American Phytopathological Society meeting, San Antonio, TX, August 2017. (poster)
- Woodhall J.W., Perkins, K., Rivzi, R., Fairchild, K., and **Wharton, P.S.** Developing diagnostic methods for *Pythium ultimum*. 1st International Soilborne Oomycete Conference 2015, Duck Key, FL December 8 – 12. (poster)
- Wharton, P.S.**, Porter, L., Frost, K., and Hamm, P. Management of mefenoxam-resistant isolates of *Pythium ultimum* causing pythium leak on potato in the Pacific Northwest. 1st International Soilborne Oomycete Conference 2015, Duck Key, FL December 8 – 12. (poster)
- Ding, S., Jordan, S. A., Cleveland, K. M., Fairchild, K. L., **Wharton, P. S.**, Gevens, A. J (2015). Investigating fungicide resistance in potato early blight complex pathogens of Wisconsin. (Abstr.) Phytopathology 105(Suppl. 4): S4.37. (poster)
- Wharton, P.S.**, Woodhall, J.W., and Fairchild, K.L. (2015). Rapid detection of the zebra chip pathogen in infected plants and psyllids using loop mediated isothermal amplification. (Abstr.) Phytopathology 105(Suppl. 4):S4.148. (poster)
- Woodhall, J.W., Hetherington, F., Perkins, K., Lekuona, H., Fairchild, K., **Wharton, P.S.** (2015). On site testing for *Clavibacter michiganensis* subsp. *sepedonicus* in potato and environmental samples using loop mediated isothermal amplification. (Abstr.) Phytopathology 105(Suppl. 4): S4.149. (poster)
- Wharton, P.S.**, Woodhall, J.W., Fairchild, K.L. Rapid detection of potato pathogens using Loop Mediated Isothermal Amplification (LAMP). Potato Association of America Annual meeting, Portland, ME, July 2014. (poster)
- Wharton, P.S.**, Duynslager, L., and Kirk, W.W. Effect of climate change on the over winter survival of volunteer potatoes in Idaho. Potato Association of America Annual meeting, Portland, ME, July 2014. (poster)
- Ricard, D., Fairchild, K., Baergen, E., Hamm, P., Pavek, M., and **Wharton, P.S.** Characterization of *Rhizoctonia solani* anastomosis groups on potato in the Pacific Northwest. Potato Association of America Annual meeting, Spokane, WA, July 2014. (poster)
- Miles, T.D., Woodhall, J.W., Miles, L.A., Hamm, P.B., and **Wharton, P.S.**, 2013. Characterization of *Rhizoctonia solani* anastomosis groups on potato in the Pacific Northwest. 2013 APS_MSA Joint Meeting, Austin, TX, Aug 10-14, 2013. (poster)
- *Wood, E.M., Miles, T.D., and **Wharton, P.S.**, 2013. Factors affecting black dot development in storage. 2013 APS_MSA Joint Meeting, Austin, TX, Aug 10-14, 2013. (poster)
- **Ricard, D.D., Miles, T.D., Woodhall, J.W., Miles, L.A., Hamm, P.B., and **Wharton, P.S.**, 2013. Characterization of *Rhizoctonia solani* anastomosis groups on potato in the Pacific Northwest. Annual Meeting of The Potato Association of America, Quebec City, Canada, July 28-Aug 1, 2013. (poster)

- Fairchild, K.L., Miles, T.D., *Merlington, A., Kirk, W.W., Rosenzweig, N., and **Wharton, P.S.**, 2013. Occurrence of boscalid and penthiopyrad resistance in populations of *Alternaria solani* on potato in Michigan. Annual Meeting of The Potato Association of America, Quebec City, Canada, July 28-Aug 1, 2013. (poster)
- Wharton, P.S.**, 2013. Detection and characterization of boscalid resistance in *Alternaria solani* causing early blight on potatoes in Idaho. *Potato Expo 2013*, Las Vegas, NV, January 9-11, 2013. (poster)
- Miles, T.D., Woodhall, J.W., Miles, L.A., Hamm, P. B., **Wharton, P.S.**, 2012. Characterization of *Rhizoctonia solani* anastomosis groups on potato in the Pacific Northwest of the United States. *British Society for Plant Pathology Presidential Meeting 2012: Fitness Costs and Trade-offs in Plant-Parasite Interactions*, Norwich, UK, December 16-18, 2012. (poster)
- Wharton, P.S.**, Fairchild, K., Miles, L.A., and Miles, T.D., 2012. Characterization of boscalid resistance in *Alternaria* species causing disease on potatoes in Idaho. *Potato Association of America Meeting*, Denver, CO, August 12-16, 2012. (poster)
- Fairchild, K., Miles, L.A., Miles, T.D., and **Wharton, P.S.**, 2012. Detection and characterization of boscalid resistance in *Alternaria solani* causing early blight on potatoes in Idaho. *American Phytopathological Society Annual Meeting*, Providence, RI, August 4 – 8, 2012. (poster).
- Wharton, P.S.**, Woodhall, J.W., Peters, J., and Kirk, W.W., 2012. Characterization and pathogenicity of *Rhizoctonia solani* isolates affecting potato in Idaho and Michigan, United States. *American Phytopathological Society Annual Meeting*, Providence, RI, August 4 – 8, 2012. (poster).
- *Wood, E.M., and **Wharton, P.S.**, 2012. The use of volatile organic compounds to control *Colletotrichum coccodes* on potato in large-scale storage. *American Phytopathological Society Annual Meeting*, Providence, RI, August 4 – 8, 2012. (poster).
- Wharton, P.S.**, Woodhall, J.W., Peters, J., and Kirk, W.W., 2012. A Survey of *Rhizoctonia solani* anastomosis groups present in Idaho and Michigan, USA. *World Potato Congress 2012*, Edinburgh, UK. (poster)
- **Fairchild, K., and **Wharton, P.S.**, 2011. Resistance of *Alternaria* populations in Idaho to commonly used fungicides. *Potato Association of America Meeting*, Wilmington, North Carolina, August 14-18, 2011. (poster)
- Belcher, A.R., **Wharton, P.S.**, **Windes, S., Lowder, C., Buhrig, W., Thornton, M., and Stark, J., 2011. Achieving sustainable potato production through the use of new potato varieties with reduced fungicide requirements. *Potato Association of America Meeting*, Wilmington, North Carolina, August 14-18, 2011. (poster)
- Belcher, A.R., **Wharton, P.S.**, **Windes, S., Lowder, C., Buhrig, W., Thornton, M., and Stark, J., 2011. Achieving sustainable potato production through the use of new potato varieties with reduced fungicide requirements. *American Phytopathological Society Annual Meeting*, Honolulu, Hawaii, August 5 – 10, 2011. (poster)
- Wharton, P.S.**, Belcher, A.R., Woodell, L., and Olsen, N., 2011. Screening newly released Northwest Potato Variety Development Program cultivars for resistance to *Pythium leak*. *American Phytopathological Society Annual Meeting*, Honolulu, Hawaii, August 5 – 10, 2011. (poster)
- Wharton, P.S.**, Belcher, A.R., Woodell, L., and Olsen, N., 2011. Control of potato early blight tuber rot using post-harvest fungicide treatments. *American Phytopathological Society Annual Meeting*, Honolulu, Hawaii, August 5 – 10, 2011. (poster)
- **Wood, E.M., and **Wharton, P.S.** The use of volatile organic compounds to control postharvest potato pathogens. *American Phytopathological Society Annual Meeting*, Honolulu, Hawaii, August 5 – 10, 2011. (poster)
- Stark, J., Thornton, M., **Wharton, P.S.**, Lowder, C., and P. Bain., 2011 Response of new potato varieties to reduced management inputs. *Potato Expo 2011*, Las Vegas, Nevada, January 5-7, 2011. (poster)

- Olsen, N., Woodell, L., Karasev, A., **Wharton, P.S.**, Miller, J., Thornton, M., and Nolte P., 2011. Use of Pathogen Detection Test Kits for Rapid In-field and Storage Potato Diagnosis. *Potato Expo 2011*, Las Vegas, Nevada, January 5-7, 2011. (poster)
- **Wood, E.M., Belcher, A.R., Wharton, P.S., 2010.** The use of natural plant volatile compounds for the control of the potato blemish pathogens. *European Association of Potato Research, Pathology Section Meeting*, Carlow, Ireland, 13 – 16 September, 2010. (poster)
- **Wood, E.M., Belcher, A.R., Wharton, P.S., 2010.** The use of natural plant volatile compounds for the control of the potato blemish pathogens. *Potato Association of America Meeting*, Corvallis, OR, 15 - 19 August 2010. (poster)
- Belcher, A.R., ****Wood, E.M., Wharton, P.S., 2010.** Fungicide sensitivity of *Alternaria solani* populations in Idaho to commonly used fungicides and its effect on potato early blight management in Idaho. *American Phytopathological Society Annual Meeting*, Charlotte, NC., 8 – 11 August 2010. (poster)
- Baker, K.M., **Wharton, P.S.**, Kirk, W.W., Plale, B., Zaslavsky, I. 2009. Late blight forecasting as a test case for multi-regional, multi-scale forecasting cyberinfrastructure. *Potato Association of America Meeting*, Fredericton, NB, Canada, 9 August - 13 August 2009. (poster)
- Baker, K.M., Stein, J., **Wharton, P.S.**, Paz, J., Kirk, W.W., Plale, B. 2009. Cyberinfrastructure challenges to multi-regional, multi-scale weather forecasting for crop disease early warning systems. *American Phytopathological Society Annual Meeting*, Portland, Oregon, July 31- August 5. (poster)
- Kirk, W.W., Rojas, A., Abu-El Samen, F., Tumbalam, P., **Wharton, P.S.**, Douches, D., Thill, C.A., Thompson, A. 2009. Impact of different US genotypes of *Phytophthora infestans* on potato seed tuber rot and plant emergence in different cultivars and breeding lines. *American Phytopathological Society Annual Meeting*, Portland, Oregon, July 31- August 5. (poster)
- Wharton, P.S., 2011.** Potato Diseases in Idaho. 2011 Idaho Potato Conference, Pocatello, ID., January 19-20, 2011. (display).
- Wharton, P.S., 2010.** Potato Diseases in Idaho. 2010 Idaho Potato Conference, Pocatello, ID., January 20-21, 2010. (display).
- Wharton, P.S., 2009.** Potato Diseases in Idaho. 2009 Idaho Potato Conference, Pocatello, ID., January 21-22, 2009. (display).

Grant Reports:

Technical Activity Report. In: Feed the Future Global Biotechnology Potato Partnership, Annual Report, 2023. October 1, 2022 – September 30, 2023.

Quarterly Activity Report. Feed the Future Global Biotechnology Potato Partnership, July 17, 2023

Quarterly Activity Report. Feed the Future Global Biotechnology Potato Partnership, April 15, 2023

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USAID Feed the Future Global Biotechnology Potato Partnership, Semi-Annual Report, October 1, 2021 – March 31, 2022. <https://bit.ly/3kyVOKC>

USAID Feed the Future Biotechnology Potato Partnership Final Project Report, 2021.

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USAID Feed the Future Biotechnology Potato Partnership 2020 Annual Report.

- Developing and deploying advanced detection methods for bacterial ring rot of potatoes. ISDA Specialty Crops Block Grant. Final Report November, 2020.
- Soil-borne diseases of beans: determining the primary causal agents and developing disease management practices. ISDA Specialty Crops Block Grant. Final Report November, 2020.
- Early warning systems for detection of foliar potato pathogens using spore sampling and weather data. ISDA Specialty Crops Block Grant. Final Report November, 2020.
- 2E-Hexenal: The future of potato disease control in storage. Idaho Global Entrepreneurial Mission Grant Program, Final Report January, 2018.
- Investigate best field and storage management techniques for the control of black dot. IPC project 8704 (BJKW85) August 2012 report.
- Detection of soil borne pathogens from soil and potato tubers by quantitative real-time PCR. IPC project 8717 (BJKY08) August 2012 report.
- Investigate best field and storage management techniques for the control of important potato diseases in Idaho. IPC project 8761 (BJKY03) August 2012 report.
- A holistic approach to managing important potato diseases in Idaho. IPC project 8704 (BJKW85) June 2012, FY12 final report.
- Detection of soil borne pathogens from soil and potato tubers by quantitative real-time PCR. IPC project 8717 (BJKX08) June 2012 FY12 final report.
- Investigate best field and storage management techniques for the control of important potato diseases in Idaho. IPC project 8761 (BJKX03) June 2012 FY12 final report.
- Investigate best field and storage management techniques for the control of black dot. IPC project 8704 (BJKW85) August 2011 report.
- Detection of soil borne pathogens from soil and potato tubers by quantitative real-time PCR. IPC project 8717 (BJKX08) August 2011 report.
- Investigate best field and storage management techniques for the control of important potato diseases in Idaho. IPC project 8761 (BJKX03) August 2011 report.
- A holistic approach to managing important potato diseases in Idaho. IPC project 8704 (BJKW85) June 2011 final report.
- A holistic approach to managing important potato diseases in Idaho. IPC project 8704 (BJKW85) August 2010 report.
- Biology and management of Fusarium dry rot in new and potential release cultivars. IPC project 8761 (BJKW51) August 2010 report.
- A holistic approach to managing important potato diseases in Idaho. IPC project 8704 (BJKA39) Final report (June 2010).
- Biology and management of Fusarium dry rot in new and potential release cultivars. IPC project 8761 (BJKV51) Final report (June 2010).
- A holistic approach to managing important potato diseases in Idaho. IPC project 8704 (BJKA39) Final report (June 2010).
- Biology and management of Fusarium dry rot in new and potential release cultivars. IPC project 8761 (BJKV51) Final report (June 2010).

Natural antifungal films for the control of post harvest potato tuber diseases in packaging containers. IPC project 8763 (BJKV54) Final report (June 2010).

A holistic approach to managing important potato diseases in Idaho. IPC project 8704 (BJKA39) August 2009 report.

Biology and management of Fusarium dry rot and Black dot in new and potential release cultivars. IPC project 8761 (BJKV51) August 2009 report.

Natural antifungal films for the control of post harvest potato tuber diseases in packaging containers. IPC project 8763 (BJKV54) August 2009 report.

A holistic approach to managing important potato diseases in Idaho. IPC project 8704 (BJKA39) December 2009 report.

Biology and management of Fusarium dry rot and Black dot in new and potential release cultivars. IPC project 8761 (BJKV51) December 2009 report.

Natural antifungal films for the control of post harvest potato tuber diseases in packaging containers. IPC project 8763 (BJKV54) December 2009 report.

Patents:

Wharton P.S., 2018. Compositions and Methods for Inhibiting Potato Pathogens. *Canadian Patent* No.: 2,808,073 granted May 29, 2018

Wharton P.S., 2015. Compositions and Methods for Inhibiting Potato Pathogens. *U.S. Patent* No.: 9,044,033 granted June 2, 2015

Wharton P.S., 2013. Compositions and Methods for Inhibiting Potato Pathogens. *Mexico Patent Application* No.: MX/a/2013/001833, filed February 14, 2013

Wharton P.S., 2013. Compositions and Methods for Inhibiting Potato Pathogens. *European Patent Application* No.: 11818629.5, filed March 22, 2013

Wharton P.S., 2013. Compositions and Methods for Inhibiting Potato Pathogens. *Brazil Patent Application* No.: 543267 UIC-007BR, filed April 14, 2013

Wharton P.S., 2013. Compositions and Methods for Inhibiting Potato Pathogens. *Chile Patent Application* No.: CL442-2013, filed March 26, 2013

Wharton P.S., 2013. Compositions and Methods for Inhibiting Potato Pathogens. *International Patent Application* No: PCT/US2011/047811, filed August 15, 2011

Grants and Contracts Awarded

Idaho State Department of Agriculture, Specialty Crop Block Grant (FY2024). Sustainable alternatives to fumigation for managing potato early die. **Wharton, P.S.**, Woodhall, W.W., and Duellman, K.D., \$145,027 (spending authority \$91,521)

United States Agency for International Development Feed the Future Program, 2021. Global Biotechnology Potato Partnership. Douches, D., Ghislain, M., Hokanson, K., and **Wharton, P.S.**, \$20,000,000 (spending authority \$647,596)

Idaho Potato Commission, 2021. Potato vine kill speed and tuber maturity at application time: Impact on bruise and risk for subsequent development of fusarium dry rot, pink rot, and pythium leak. Hutchinson, P., Duellman, K., and **Wharton, P.S.**, \$30,162 (spending authority \$3,545)

USAID Feed the Future Biotechnology Potato Partnership, 2021. Characterization of isolates of *Phytophthora infestans* from Indonesia and Bangladesh. Douches, D., Hokanson, K., **Wharton, P.S.**, \$23,456 (spending authority \$23,456)

- Northwest Potato Research Consortium (FY2020). A network of spore samplers as an early warning detection system for foliar potato pathogens. Woodhall, J., **Wharton, P.S.**, and Kinzer, K. \$46,000 (spending authority \$8,920)
- Idaho State Department of Agriculture, Specialty Crop Block Grant (FY2019). Soil-borne diseases of beans: determining the primary causal agents and developing disease management practices. Woodhall, J., and Wharton, P.S., \$59,851 (spending authority \$6,324)
- Northwest Potato Research Consortium (FY2019). Characterizing Fusarium species associated with and refining management of potato dry rot in the Pacific Northwest. Kinzer, K., **Wharton, P.S.**, Woodhall, J., Frost, K., Inglis, D., and McMoran, D. \$38,380 (spending authority \$7,600)
- Northwest Potato Research Consortium (FY2019). Developing methods for an early warning detection system for foliar potato pathogens. Woodhall, J., **Wharton, P.S.**, and Kinzer, K. \$27,000 (spending authority \$3,000)
- Simplot Plant Sciences, 2019. Assessment of the Verticillium wilt susceptibility of six potato varieties with and without soil fumigation treatment. **Wharton, P.S.**, \$36,336 (spending authority \$36,336)
- Simplot Plant Sciences, 2019. Assessment of Early Blight susceptibility / resistance of selected potato varieties with and without fungicide treatment: financial analysis. **Wharton P.S.**, \$27,252 (spending authority \$27,252)
- Idaho State Department of Agriculture, Specialty Crop Block Grant (FY2018). Developing and deploying advanced detection methods for bacterial ring rot of potatoes. Total. \$141,300. (spending authority: \$41,966.40)
- Simplot Plant Sciences, 2018. Assessment of Early Blight susceptibility / resistance of selected potato varieties with and without fungicide treatment: financial analysis. **Wharton P.S.**, \$27,252 (spending authority \$27,252)
- Simplot Plant Sciences, 2018. Assessment of Early Blight susceptibility / resistance of Potato Varieties. **Wharton P.S.**, \$5,450.4 (spending authority \$5,450.4)
- Idaho State Department of Agriculture, Specialty Crop Block Grant (FY2018). Early warning systems for detection of foliar potato pathogens using spore sampling and weather data. **Wharton, P.S.** \$198,925.42 (spending authority \$198,925.42)
- Northwest Potato Research Consortium (FY2018). Developing methods for an early warning detection system for foliar potato pathogens. Woodhall, J., **Wharton, P.S.**, and Kinzer, K. \$16,500 (spending authority \$2,000)
- Northwest Potato Research Consortium (FY2018). Characterizing Fusarium species associated with and refining management of potato dry rot in the Pacific Northwest. Kinzer, K., **Wharton, P.S.**, Woodhall, J., Frost, K., Inglis, D., and McMoran, D. \$38,380 (spending authority \$7,600)
- Northwest Potato Research Consortium (FY2018). Development of Verticillium Wilt-Suppressive Soils and Evaluation of Fungicidal and Biopesticidal Products for Northwest Potato Production. Johnson, D., Frost, K., Thornton, M., and **Wharton, P.S.**, \$70,070 (spending authority \$10,000)
- Idaho Potato Commission. Risk Mitigation During Transit. **Wharton, P.S.**, and Woodhall, J.W. \$84,360. (spending authority \$84,360).
- Northwest Potato Research Consortium (FY2017). Rapid detection of Zebra chip pathogen, *Candidatus Liberibacter solanacearum* (Lso) in psyllids, green tissue and potato tubers **Wharton, P. S.**, and Wenninger, E., \$12,463 (spending authority \$10,963).
- Northwest Potato Research Consortium (FY2017). Quantifying effects of vector density and time of infection on ZC disease development and tuber physiology both at harvest and during storage. Wenninger, E., Olsen, N, **Wharton, P.S.**, Rashed, A., Karasev, A., \$43,312. (spending authority \$10,341)
- Northwest Potato Research Consortium (FY2017). Long-Term Impacts of Manure Application on Production of Potato and Other Crops. Moore, A., **Wharton, P.S.**, Olsen, N., and Wenninger, E., \$27,800. (spending authority \$4,000)

- Northwest Potato Research Consortium (FY2017). Development of Verticillium Wilt-Suppressive Soils and Evaluation of Fungicidal and Biopesticidal Products for Northwest Potato Production. Johnson, D., Frost, K., Thornton, M., and **Wharton, P.S.**, \$75,070 (spending authority \$10,000)
- Monsanto BioAg (FY2017). Evaluation of fungicide candidates for early blight control in potato. **Wharton, P.S.**, \$10,900 (spending authority \$10,900)
- USAID. Feed the Future Biotechnology Potato Partnership. **Wharton, P.S.**, \$75,030.20 (spending authority \$75,030.20)
- Western Regional Integrated Pest Management (WIPM) USDA. Potato Soil Health Work Group: Developing a Roadmap Towards Sustainable Management of Soil borne Potato Diseases. Schroeder, B., **Wharton, P.S.**, and Thornton, M. \$28,400
- Northwest Potato Research Consortium (FY2016). Soil Populations, Aggressiveness and Management of Mefenoxam-resistant Isolates of *Pythium ultimum* Causing Pythium Leak in Idaho. Porter, L., Hamm, P. and **Wharton, P.S.**, \$41,590 (spending authority \$20,470)
- Northwest Potato Research Consortium (FY2016). Rapid detection of bacterial ring rot in symptomatic and asymptomatic tissues using advanced molecular techniques. **Wharton, P. S.**, Fairchild, K.L., Olsen, N., and Woodhall, J.W., \$22,970 (spending authority \$21,970)
- Northwest Potato Research Consortium (FY2016). Rapid detection of Zebra chip pathogen, *Candidatus Liberibacter solanacearum* (Lso) in psyllids, green tissue and potato tubers **Wharton, P. S.**, Rashed, A., Wenninger, E., and Olsen, N., \$20,853 (spending authority, \$16,353)
- Northwest Potato Research Consortium (FY2016). Quantifying effects of vector density and time of infection on ZC disease development and tuber physiology both at harvest and during storage. Wenninger, E., Olsen, N, **Wharton, P.S.**, Rashed, A., Karasev, A., \$49,950. (spending authority \$11,981)
- Monsanto BioAg (FY2016). Actinovate AG efficacy on Rhizoctonia and Verticillium diseases in potato. **Wharton, P.S.**, \$10,980.06 (spending authority \$10,980.06)
- Monsanto BioAg (FY2016). Evaluation of fungicide candidates for early blight control in potato. **Wharton, P.S.**, \$7,113.60 (spending authority \$7,113.60)
- Northwest Potato Research Consortium (FY2015). Soil Populations, Aggressiveness and Management of Mefenoxam-resistant Isolates of *Pythium ultimum* Causing Pythium Leak in Idaho. Porter, L., Hamm, P. and **Wharton, P.S.**, \$32,694 Spending authority \$11,994
- Northwest Potato Research Consortium (FY2015). Practical Eradication of Bacterial Ring Rot in the Pacific Northwest. **Wharton, P.S.**, \$25,000; Spending authority \$25,000
- Northwest Potato Research Consortium (FY2015). Joint Northwest ZC/Potato Psyllid Research Proposal for 2014-15 Research. Wenninger, E., Olsen, N, **Wharton, P.S.**, Rashed, A., Karasev, A., \$64,225; Spending authority, \$9,361
- Northwest Potato Research Consortium (FY2015). Long-Term Impacts of Manure Application on Production of Potato and Other Crops, Moore, A., **Wharton, P.S.**, \$47,923; Spending authority \$4,000
- Idaho Department of Commerce (FY2015). 2E-hexenal: The future of potato disease control in storage. **Wharton, P.S.**, \$296,917; spending authority \$250,917.
- Idaho Agricultural Experiment Station, (2014). Rapid detection and characterization of zebra chip disease and symptom development in potato foliage and tubers. **Wharton, P.S.**, Olsen, N., and Wenninger, E.J., \$15,000 (\$15,000 spending authority).
- Idaho Agricultural Experiment Station, (2014). Investigations into the suitability of alternative host plants for the potato psyllid and the zebra chip pathogen, *Candidatus Liberibacter solanacearum*. Wenninger, E.J., Hutchinson, J.S., Morishita, D.W., and **Wharton, P.S.**, \$50,000 (\$10,000 spending authority).

- Idaho Potato Commission, (2014). Bacterial Ring Rot Task Force: Improving Detection and Management of Bacterial Ring Rot in Pacific Northwest Potato Production. Shroeder, B.K., **Wharton, P.S.**, and Nolte, P., \$22,000 (\$22,000 spending authority).
- Idaho Potato Commission, (2014). Investigate best field and storage management techniques for the control of important potato diseases in Idaho. **Wharton, P.S.**, and Olsen, N., \$8,500 (\$8,500 spending authority).
- BASF Corporation, (2013). Evaluation of new products for the control of Early blight. **Wharton, P.S.**, \$1,800 (\$1,800 spending authority).
- BASF Corporation, (2013). Evaluation of new products for the control of Rhizoctonia diseases. **Wharton, P.S.**, \$6,000 (\$6,000 spending authority).
- Bayer CropScience, (2013). Evaluation of new products for the control of Early blight and Rhizoctonia diseases. **Wharton, P.S.**, \$40,425 (\$40,425 spending authority).
- DuPont Crop Protection, (2013). Evaluation of new products for the control of potato diseases. **Wharton, P.S.**, \$7,200 (\$7,200 spending authority).
- Gowan Company (2013). Evaluation of products for the control of important potato diseases in Idaho. **Wharton, P.S.**, \$65,200 (\$65,200 spending authority).
- Syngenta Crop Protection, (2013). Evaluation of products for the control of foliar diseases in potato. **Wharton, P.S.**, \$6,000 (\$6,000 spending authority).
- Syngenta Crop Protection, (2013). Production of *Rhizoctonia solani* inoculum for artificial inoculation of field trials. **Wharton, P.S.**, \$8,349 (\$8,349 spending authority).
- Valent U.S.A. Corporation, (2013). Evaluation of products for the control of foliar diseases in potato. **Wharton, P.S.**, \$3,600 (\$3,600 spending authority).
- FMC Inc., (2013). Evaluation of new products for the control of foliar and storage diseases of potato. **Wharton, P.S.**, \$10,800 (\$10,800 spending authority).
- Certis, (2013). Evaluation of BmJ for the control of white mold in potato. **Wharton, P.S.**, \$2,840 (\$2,840 spending authority).
- NCAP, (2013). Evaluation of BmJ for the control of white mold in potato. **Wharton, P.S.**, \$13,260 (\$13,260 spending authority).
- Idaho Potato Commission, (2012-13). Investigate best field and storage management techniques for the control of black dot. **Wharton, P.S.**, \$15,000 (\$15,000 spending authority).
- Idaho Potato Commission, (2012-13). Detection of soil borne pathogens from soil and potato tubers by quantitative real-time PCR. **Wharton, P.S.**, \$10,000 (\$10,000 spending authority).
- Idaho Potato Commission, (2012-13). Investigate Best Field and Storage Management for Fusarium Dry Rot Control Balanced with Other Disease and Quality Attributes. Olsen, N., and **Wharton, P.S.**, \$12,000 (\$300 spending authority).
- Idaho Potato Commission, (2012-13). Investigate best field and storage management techniques for the control of important potato diseases in Idaho. **Wharton, P.S.**, and Olsen, N., \$10,000 (\$9,800 spending authority).
- BASF Corporation, (2012). Evaluation of new products for the control of Early blight. **Wharton, P.S.**, \$17,000 (\$17,000 spending authority).

- BASF Corporation, (2012). Evaluation of new products for the control of Rhizoctonia diseases. **Wharton, P.S.**, \$5,000 (\$5,000 spending authority).
- BASF Corporation, (2012). Evaluation of new products for the control of black dot. **Wharton, P.S.**, \$2,200 (\$2,200 spending authority).
- Bayer CropScience, (2012). Evaluation of new products for the control of Early blight and Rhizoctonia diseases. **Wharton, P.S.**, \$9,600 (\$9,600 spending authority).
- DuPont Crop Protection, (2012). Evaluation of new products for the control of potato diseases. **Wharton, P.S.**, \$42,900 (\$42,900 spending authority).
- Gowan Company (2012). Evaluation of products for the control of important potato diseases in Idaho. **Wharton, P.S.**, \$27,000 (\$27,000 spending authority).
- Syngenta Crop Protection, (2012). Evaluation of products for the control of foliar diseases in potato. **Wharton, P.S.**, \$7,500 (\$7,500 spending authority).
- Syngenta Crop Protection, (2012). Production of Rhizoctonia solani inoculum for artificial inoculation of field trials. **Wharton, P.S.**, \$4,500 (\$4,500 spending authority).
- Valent U.S.A. Corporation, (2012). Evaluation of products for the control of foliar diseases in potato. **Wharton, P.S.**, \$2,000 (\$2,000 spending authority).
- AgraQuest Inc., (2012). Evaluation of biological control products for the control of pink rot and aerial stem rot. **Wharton, P.S.**, \$12,000 (\$12,000 spending authority).
- Isagro USA, (2012). Evaluation of new products for the control of pink rot. **Wharton, P.S.**, \$1,000 (\$1,000 spending authority).
- FMC Inc., (2012). Evaluation of new products for the control of foliar and storage diseases of potato. **Wharton, P.S.**, \$10,800 (\$10,800 spending authority).
- Certis/ NCAP., (2012). Evaluation of BmJ for the control of white mold in potato. **Wharton, P.S.**, \$6,000 (\$6,000 spending authority).
- Actagro, (2012). Evaluation of Resist 57 for the control of potato storage diseases. **Wharton, P.S.**, \$3,000 (\$3,000 spending authority).
- J.R. Simplot Company, (2012). The use of molecular diagnostic techniques for the characterization and quantification of potato soil borne diseases. **Wharton, P.S.**, \$ \$107,179 (\$107,179 spending authority).
- Potandon LLC, (2012). Molecular diagnostic testing for powdery scab in potato tubers. **Wharton, P.S.**, \$1,100 (\$1,100 spending authority).
- DuPont Crop Protection, (2012). Molecular diagnostic testing for zebra chip and black dot in potato tubers. **Wharton, P.S.**, \$1,463 (\$1,463 spending authority).
- Idaho Potato Commission, (2011-12). Investigate best field and storage management techniques for the control of black dot. **Wharton, P.S.**, \$15,000 (\$15,000 spending authority).
- Idaho Potato Commission, (2011-12). Detection of soil borne pathogens from soil and potato tubers by quantitative real-time PCR. **Wharton, P.S.**, \$10,000 (\$10,000 spending authority).
- Idaho Potato Commission, (2011-12). Investigate Best Field and Storage Management for Fusarium Dry Rot Control Balanced with Other Disease and Quality Attributes. Olsen, N., and **Wharton, P.S.**, \$12,000 (\$300 spending authority).

- Idaho Potato Commission, (2011-12). Investigate Best Field and Storage Management Techniques For the Control of Important Potato Diseases in Idaho. **Wharton, P.S.**, and Olsen, N., \$25,000 (\$24,063 spending authority).
- BASF Corporation, (2011). Evaluation of new products for the control of Early blight. **Wharton, P.S.**, \$17,000 (\$17,000 spending authority).
- BASF Corporation, (2011). Evaluation of new products for the control of Rhizoctonia diseases. **Wharton, P.S.**, \$7,000 (\$3,500 spending authority).
- BASF Corporation, (2011). Evaluation of new products for the control of Late blight. **Wharton, P.S.**, \$9,750 (\$6,750 spending authority).
- Bayer CropScience, (2011). Evaluation of new products for the control of Early blight.. **Wharton, P.S.**, \$6,500 (\$6,500 spending authority).
- DuPont Crop Protection, (2011). Evaluation of new products for the control of potato diseases. **Wharton, P.S.**, \$45,000 (\$45,000 spending authority).
- Gowan Company (2011). Evaluation of products for the control of important potato diseases in Idaho. **Wharton, P.S.**, \$16,000 (\$11,250 spending authority).
- Sipcam Agro USA, Inc., (2011). Evaluation of biological control products for the control of white mold and Rhizoctonia diseases in potato. **Wharton, P.S.**, \$6,000 (\$3,000 spending authority).
- Syngenta Crop Protection, (2011). Evaluation of products for the control of soilborne diseases in potato. **Wharton, P.S.**, \$6,000 (\$3,000 spending authority).
- Syngenta Crop Protection, (2011). Evaluation of products for the control of foliar diseases in potato. **Wharton, P.S.**, \$10,050 (\$10,050 spending authority).
- Valent U.S.A. Corporation, (2011). Evaluation of products for the control of foliar diseases in potato. **Wharton, P.S.**, \$4,000 (\$4,000 spending authority).
- Valent U.S.A. Corporation, (2011). Evaluation of products for the control of pink rot in potato. **Wharton, P.S.**, \$8,000 (\$8,000 spending authority).
- AgraQuest Inc., (2011). Evaluation of biological control products for the control of pink rot and aerial stem rot. **Wharton, P.S.**, \$8,000 (\$8,000 spending authority).
- Isagro USA, (2011). Evaluation of new products for the control of pink rot. **Wharton, P.S.**, \$1,000 (\$1,000 spending authority).
- Potandon Produce LLC., (2011). Evaluation of fungicide products in combination with management techniques for the control of aerial stem rot. **Wharton, P.S.**, \$5,400 (\$5,400 spending authority).
- Idaho Potato Commission, (2010-2011). A holistic approach to managing important potato diseases in Idaho. **Wharton, P.S.**, and Olsen, N. \$34,564 (\$31,726 spending authority).
- Idaho Potato Commission, (2010-2011). Biology and management of Fusarium dry rot in new and potential release cultivars. **Wharton, P.S.**, and Olsen, N. \$5,339 (\$4,000 spending authority).
- Idaho Potato Commission, (2010-2011). Utilizing pathogen detection test kits for rapid in-field use. Olsen, N., **Wharton, P.S.**, Karasev, A., Nolte, P., Thornton, M., and Miller, J. \$21,150 (\$2,630 spending authority). Single year. Idaho Potato Commission
- Idaho Potato Commission, (2010-2011). Improving the appearance of specialty potatoes. Thornton, M, Olsen, N., and **Wharton, P.S.** \$14,199 (\$2,105 spending authority).

- BASF Corporation, (2010). Evaluation of new products for the control of Early blight. **Wharton, P.S.**, \$15,300 (\$15,300 spending authority).
- BASF Corporation, (2010). Evaluation of new products for the control of Rhizoctonia diseases. **Wharton, P.S.**, \$6,000 (\$3,000 spending authority).
- BASF Corporation, (2010). Evaluation of new products for the control of Late blight. **Wharton, P.S.**, \$22,200 (\$22,200 spending authority).
- Bayer CropScience, (2010). Evaluation of new products for the control of Early blight and Late blight. **Wharton, P.S.**, \$12,450 (\$12,450 spending authority).
- DuPont Crop Protection, (2010). Evaluation of new products for the control of potato diseases. **Wharton, P.S.**, \$52,000 (\$52,000 spending authority).
- Gowan Company (2010). Evaluation of products for the control of important potato diseases in Idaho. **Wharton, P.S.**, \$32,300 (\$27,050 spending authority).
- Sipcam Agro USA, Inc., (2010). Evaluation of biological control products for the control of white mold and Rhizoctonia diseases in potato. **Wharton, P.S.**, \$14,000 (\$14,000 spending authority).
- Syngenta Crop Protection, (2010). Evaluation of products for the control of foliar and soilborne diseases in potato. **Wharton, P.S.**, \$15,000 (\$11,500 spending authority).
- Valent U.S.A. Corporation, (2010). Evaluation of products for the control of foliar diseases in potato. **Wharton, P.S.**, \$4,000 (\$4,000 spending authority).
- Valent U.S.A. Corporation, (2010). Evaluation of products for the control of pink rot in potato. **Wharton, P.S.**, \$8,000 (\$8,000 spending authority).
- AgraQuest Inc., (2010). Evaluation of biological control products for the control of Rhizoctonia stem rot and black scurf. **Wharton, P.S.**, \$5,000 (\$2,500 spending authority).
- Isagro USA, (2010). Evaluation of new products for the control of pink rot. **Wharton, P.S.**, \$3,000 (\$3,000 spending authority).
- Potandon Produce LLC., (2010). Evaluation of fungicide products in combination with management techniques for the control of aerial stem rot. **Wharton, P.S.**, \$30,000 (\$30,000 spending authority).
- Idaho Potato Commission, (2009-2010). A holistic approach to managing important potato diseases in Idaho. **Wharton, P.S.**, Nolte P., and Olsen, N. \$26,500 (\$26,500 spending authority).
- Idaho Potato Commission, (2009-2010). Biology and management of Fusarium dry rot and Black dot in new and potential release cultivars. **Wharton, P.S.**, and Olsen, N. \$5,339 (\$5,339 spending authority).
- Idaho Potato Commission, (2009-2010). Natural antifungal films for the control of post harvest potato tuber diseases in packaging containers. **Wharton, P.S.**, and Olsen, N. \$8,339 (\$8,339 spending authority).
- Idaho Potato Commission, (2009-2010). Improving the appearance of specialty potatoes. Thornton, M, Olsen, N., and **Wharton, P.S.** \$13,544 (\$2,000 spending authority).
- ISDA Speciality Crop Block Grant (2009-2012) .Sustainable Production of New Varieties from the Pacific Northwest Potato Variety Development Program. Stark, J., Patterson, P., Thornton, M., and **Wharton, P.S.** \$169,480 (Spending authority, \$30,000 Single year for 2009, 2010 and 2011).
- BASF Corporation, (2009). Evaluation of new products for the control of Early blight. **Wharton, P.S.**, \$2,000 (\$2,000 spending authority).

- BASF Corporation, (2009). Evaluation of new products for the control of Rhizoctonia diseases. **Wharton, P.S.**, \$4,000 (\$4,000 spending authority).
- Bayer CropScience, (2009). Evaluation of new products for the control of Early blight. **Wharton, P.S.**, \$4,000 (\$4,000 spending authority).
- DuPont Crop Protection, (2009). Evaluation of new products for the control of potato diseases. **Wharton, P.S.**, \$20,000 (\$20,000 spending authority).
- Gowan Company (2009). Evaluation of products for the control of important potato diseases in Idaho. **Wharton, P.S.**, and Nolte, P. \$27,000 (\$19,000 spending authority).
- Montana Microbial Inc., (2009). Evaluation of BMJ for the control of Early Blight and White Mold. **Wharton, P.S.**, \$4,400 (\$4,400 spending authority).
- Syngenta Crop Protection, (2009). Evaluation of new products for the control of Early blight. **Wharton, P.S.**, \$5,000 (\$5,000 spending authority).
- HeadsUp Inc., (2009). Evaluation of new products for the control of Early blight. **Wharton, P.S.**, \$2,200 (\$2,200 spending authority).
- BioFlora Inc., (2009). Evaluation of new products for the control of Early blight. **Wharton, P.S.**, \$3,000 (\$3,000 spending authority).
- USDA-CSREES/RAMP, \$2,080,015 (2008). Synoptic weather forecasting and web-based information delivery systems for managing crop disease risk in multiple regions of the U.S. K.M. Baker, **P.S. Wharton**, Kirk, W.W., Paz, J., Stein, J., and Today, D.
- Project GREEN, MSU, \$25,966 (2007). Evaluation of novel fungicide seed treatments in combination with management practices for the control of seedborne potato diseases. **P.S. Wharton** and W.W. Kirk.
- Project GREEN, MSU, \$35,397 (2007). Managing late blight of potato in Michigan by combining weather based disease risk management systems with web-based information delivery systems. **P.S. Wharton** and W.W. Kirk.
- USDA-CSREES/NC-IPM, \$47,233 (2006). Managing late blight of potato in the North Central Region by combining weather based disease risk management systems with web-based and traditional information delivery systems. **P.S. Wharton** and W.W. Kirk and K. Baker.
- USDA-ARS, \$15,441 (2006). Evaluation and Comparison of Biofungicides and Fungicides for the Control of Postharvest Potato Tuber Diseases. **P.S. Wharton** and W.W. Kirk.
- IR-4/EPA, \$16,352 (2006). Evaluation and comparison of biofungicides and fungicides for the control of postharvest potato tuber diseases. **P.S. Wharton** and W.W. Kirk.
- USDA-ARS, \$18,428 (2005). Evaluation and Comparison of Biofungicides and Fungicides for the Control of Postharvest Potato Tuber Diseases. **P.S. Wharton** and W.W. Kirk.
- USDA-ARS, \$32,700 (2005). Evaluation of Fungicides for Use in Potato Seed Piece Health Management. **P.S. Wharton** and W.W. Kirk.
- USDA-ARS, \$53,295 (2005). Competitive Fitness of Different Genotypes of *Phytophthora Infestans* on Tubers from Different Varieties of Potatoes. **P.S. Wharton** and W.W. Kirk.
- Michigan Agricultural Experiment Station, \$49,515 (2005). Equipment grant for incubators and a dew chamber to enhance potato, sugar beet and perennial herbaceous crop pathology research. **P.S. Wharton** and W.W. Kirk.
- Michigan Sugarbeet Advancement, \$24,000 (2005-2006). Crop Protection issues for high impact sugar beet diseases Rhizoctonia root and crown rot and Cercospora leaf spot. W.W. Kirk and **P.S. Wharton**.

- Michigan Potato Industry Commission, \$14,000 (2005-2006). Integration of Measures to Limit Volunteer Potato Tuber Survival for Indirect Control of Potato Late Blight in Michigan. W.W. Kirk and **P.S. Wharton**.
- Project GREEN, MSU, \$43,664 (2005). Effect of host pathogen interactions on the competitive fitness of different genotypes of *Phytophthora infestans* on foliage and tubers. **P.S. Wharton**, W.W. Kirk and D. Douches.
- Project GREEN, MSU, \$6,780 (2005). Up-to-date printed and electronic resources for potato health management. **P.S. Wharton** and W.W. Kirk.
- Project GREEN, MSU, \$16,492 (2005). Developing prediction and control systems for control of *Rhizoctonia* diseases in potato and sugar beet. **P.S. Wharton** and W.W. Kirk.
- Project GREEN, MSU, \$16,937 (2005). Evaluation of the role of host resistance and the physiological properties of tubers in relation to Potato Late Blight disease resistance. **P.S. Wharton** and W.W. Kirk.
- IR-4/EPA, \$13,247 (2005). Efficacy and Compatibility of Biofungicides with Commonly Used Soil Fungicides in Production of Herbaceous Perennials. **P.S. Wharton** and W.W. Kirk.
- IR-4/EPA, \$11,374 (2005). Evaluation and comparison of biofungicides and fungicides for the control of postharvest potato tuber diseases. **P.S. Wharton** and W.W. Kirk.
- IR-4/EPA, \$13,247 (2005). Efficacy and compatibility of biofungicides and reduced risk fungicides as metalaxyl alternatives for the control of oomycetes in perennials. **P.S. Wharton** and W.W. Kirk.
- Michigan Potato Industry Commission, \$31,356 (2004-2006). Managing late blight of potatoes in the north central region by combining host plant resistance with reduced fungicide applications. W.W. Kirk and **P.S. Wharton**.
- Project GREEN, MSU, \$15,974 (2004). Developing prediction and control systems for control of *Rhizoctonia* diseases in potato and sugar beet. **P.S. Wharton** and W.W. Kirk.
- Project GREEN, MSU, \$15,700 (2004). New and up-to-date printed, video and electronic resources for potato management. Michigan State University Project GREEN Award, 2004. **P.S. Wharton**, S. Snapp, and W.W. Kirk.
- Project GREEN, MSU, \$16,435 (2004). Evaluation of the role of host resistance and the physiological properties of tubers in relation to Potato Late Blight disease resistance. **P.S. Wharton** and W.W. Kirk.
- IR-4/EPA, \$11,000 (2004). Evaluation and comparison of biofungicides and fungicides for the control of postharvest potato tuber diseases. **P.S. Wharton** and W.W. Kirk.
- IR-4/EPA, \$12,463 (2004). Efficacy and Compatibility of Biofungicides with Commonly Used Soil Fungicides in Production of Herbaceous Perennials. D. Brown-Rytlewski, **P.S. Wharton** and W.W. Kirk.
- Project GREEN, MSU, \$100,000 (2003-2004). A multi-faceted approach to the management of blueberry pests and diseases. A. Schilder and **P.S. Wharton**.
- Project GREEN, MSU, \$50,398 (2003-2004). Up-to-date printed and electronic resources for blueberry health management. **P.S. Wharton** and A. Schilder.

Grants and Contracts Not Awarded:

- USDA-NIFA Biotechnology Risk Assessment Grants Program (FY2023). Managing adaptation of the potato late blight pathogen to disease resistance genes. **Wharton, P.S.**, Gevens, A., and Halterman, D.A. \$499,997 (\$53,109).
- Northwest Potato Research Consortium (FY2023). Potato vine kill speed and tuber maturity at application time: Impact on bruise and risk for subsequent development of *Fusarium* dry rot, pink rot, and *pythium* leak. Hutchison, P., Duellman, K. and **Wharton, P.S.**, \$30,733 (\$2,715).

- Northwest Potato Research Consortium (FY2023). Identifying genetic mechanisms of fludioxonil resistance and management of fungicide resistant strains of *Fusarium sambucinum*. Duellman, K., **Wharton, P.S.**, Miller, J., and Frost, K. \$104,506 (\$28,924).
- Idaho State Department of Agriculture, Specialty Crop Block Grant (FY2023). Identifying mechanisms of fungicide resistance and management of fungicide-resistant strains of *Fusarium sambucinum* in Idaho. **Wharton, P.S.**, Duellman, K., and Woodhall, J. \$149,323 (\$45,515).
- USDA-NIFA Biotechnology Risk Assessment Grants Program (FY2022). Managing adaptation of the potato late blight pathogen to disease resistance genes. **Wharton, P.S.**, Gevens, A., and Halterman, D.A. \$498,884 (\$120,915).
- Northwest Potato Research Consortium (FY2022). Investigating the causal agents of early die in Northwest potato production. **Wharton, P.S.**, Miller, J., and Hubbard, M., \$38,038 (\$18,038).
- USDA-NIFA Biotechnology Risk Assessment Grants Program (FY2021). Managing adaptation of the potato late blight pathogen to disease resistance genes. **Wharton, P.S.**, Gevens, A., and Halterman, D.A. \$499,884 (\$109,821).
- Idaho State Department of Agriculture, Specialty Crop Block Grant (FY2021). Optimizing harvest timing and disease surveillance strategies for optimum potato tuber quality and yield. Duellman, K., Woodhall, J.W., and **Wharton, P.S.** \$147,112 (spending authority \$47,704).
- Northwest Potato Research Consortium (FY2018). Determining risk factors for development of *Pythium* leak going into storage. **Wharton, P.S.**, Frost, K., and Woodhall, J. \$23,574 (spending authority \$10,570)
- Northwest Potato Research Consortium (FY2018). Investigating the causal agents of early die in Northwest potato production. **Wharton, P.S.**, Hafez, S., and Woodhall, J. \$38,052 (spending authority \$16,000).
- Northwest Potato Research Consortium (FY2017). Evaluation of the soft rot Enterobacteriaceae (SRE) on potato in the Pacific Northwest. Frost, K., Johnson, D., Schroeder, B., and **Wharton, P.S.**, \$25,835 (spending authority \$11,686).
- Northwest Potato Research Consortium (FY2017). The effects of vine kill method and late season fungicide applications on levels of tuber late blight going into storage. **Wharton, P.S.**, Hutchinson, P.J., Johnson, D., Hubbard, M. \$29,000 (spending authority, \$24,000)
- Western SARE. Predictive diagnostics for diseases in potato and sugar beet– linking risk, interpretation of results and sustainable disease management strategies. Woodhall, J.W., Hafez, S., and **Wharton, P.S.** \$242,000.
- USDA-SCRI CAP grant. Developing a Toolbox of Best Practices for Sustainable Potato Production in Healthy Soils. Schroeder, B., **Wharton, P.S.**, Thornton, M., Rosenzweig, N., Jahn, C., Newman, S., and Robinson, A., \$10,000,000.
- J.R. Simplot Company (2014). Development and validation of diagnostic tools for detection of potato soil borne pathogens. Spending authority \$264,366.
- Idaho Potato Commission, (2013-14). A survey of blemish pathogens on seed tubers and soil in the Pacific Northwest to determine the epidemiology and distribution of these pathogens on potato. **Wharton, P.S.**, \$25,000 (\$25,000).
- Idaho Potato Commission, (2013-14). Investigate best field and storage management techniques for the control of black dot. **Wharton, P.S.**, \$17,000 (\$17,000).
- USDA-AFRI-Food Security Program (2012). Develop novel methods of managing diseases of crop plants caused by fungal pathogens. **Wharton, P.S.**, Auras, R.A., Rubino, M., Burgess, G., Kirk, W.W., Dolan, K., and Long, C. 5 years (\$100,000/year).
- USDA-AFRI-Climate Change Program (2012). Integrated Approaches to Climate Adaptation and Mitigation in Agroecosystems. Baker, K.M., **Wharton, P.S.**, Nogueira, R., Driscoll, E., and Kirk, W.W. 5 years (\$100,000/year).
- Idaho Potato Commission, (2012-13). Development of PCR methods for early detection of zebra chip in potato foliage. **Wharton, P.S.**, Kuhl, J., and Xiao, F. (\$15,000)

- Idaho State Board of Education Higher Education Research Council Incubation Fund Program (2012). The use of 2E-hexenal for the control of potato postharvest blemish diseases in storage. **Wharton, P.S.** (\$50,000)
- USDA-AFRI, \$10,000,000 (2010-2015). BlightCAP: Translating Knowledge of Phytophthora into Sustainable Crop Protection. Lamour, K., **Wharton, P.S.**, et al. (\$100,000/year spending authority)
- Idaho Potato Commission, (2010-2011). Natural antifungal films for the control of post harvest potato tuber diseases in packaging containers. **Wharton, P.S.**, and Olsen, N. \$8,589 (\$8,589 spending authority).
- Idaho Potato Commission, (2010-2011). Evaluation of products and management options for the control of aerial stem rot caused by *Erwinia carotovora*. **Wharton, P.S.**, and Bohl, W., \$17,360 (\$17,060 spending authority).
- USDA-ARS/NPC (2009-2010). Evaluation of products for the control of aerial stem rot caused by *Erwinia carotovora*. **Wharton P.S.**, and Whitworth, J. \$18,392.
- USDA-CSREES/PMAP, \$137,895 (2007). Managing late blight of potato in the Eastern US by combining weather based disease risk management systems with web-based information delivery systems. **P.S. Wharton**, W.W. Kirk and K.M. Baker.
- USDA-CSREES/PMAP, \$134,103 (2007). Development of an environmentally-friendly antifungal active package for the control of postharvest potato tuber diseases. **P.S. Wharton**, R.A. Auras, W.W. Kirk and E. Almenar.
- USDA-CSREES/Crops at Risk, \$137,994 (2007). Evaluation of novel biological control organisms as seed treatments in combination with management practices for the control of seedborne potato diseases. **P.S. Wharton** and W.W. Kirk.
- USDA-CSREES/Crops at Risk, \$113,631 (2007). Evaluation of novel biological control organisms and reduced risk fungicides for the control of postharvest potato diseases. **P.S. Wharton** and W.W. Kirk.
- Project GREEN, MSU, \$68,614 (2007). Natural antifungal films for the control of postharvest potato tuber diseases in packaging containers. **P.S. Wharton**, R.A. Auras, W.W. Kirk and E. Almenar.
- Project GREEN, MSU, \$35,451 (2007). Managing late blight epidemics potato diseases through the use of weather based IPM systems to predict overwinter survival of volunteer potatoes. **P.S. Wharton** and W.W. Kirk.
- USDA-ARS, \$30,759 (2006). Competitive Fitness of Different Genotypes of *Phytophthora Infestans* on Tubers from Different Varieties of Potatoes. **P.S. Wharton** and W.W. Kirk.
- USDA-ARS, \$25,785 (2006). Evaluation of Fungicides for Use in Potato Seed Piece Health Management. **P.S. Wharton** and W.W. Kirk.
- USDA-ARS, \$29,867 (2006). Natural antifungal films for the control of postharvest potato tuber diseases in packaging containers. **P.S. Wharton**, R.A. Auras, W.W. Kirk and E. Almenar.
- IR-4/EPA, \$14,715 (2006). Efficacy and compatibility of biofungicides and reduced risk fungicides as metalaxyl alternatives for the control of oomycetes in perennials. **P.S. Wharton** and W.W. Kirk.
- IR-4/EPA, \$18,272 (2006). Evaluation of biofungicides as seed treatments for the control of seedborne diseases of potato. **P.S. Wharton** and W.W. Kirk.
- USDA-ARS, \$14,490 (2005). Containment of existing potato late blight foliar epidemics and potential for tuber blight limitation with fungicides. W.W. Kirk and **P.S. Wharton**.
- IR-4/EPA, \$14,995 (2005). Evaluation of biofungicides as seed treatments for the control of seedborne diseases of potato. **P.S. Wharton** and W.W. Kirk.
- IR-4/EPA, \$11,340 (2004). Evaluation of the bio-fungicide *Trichoderma harzianum* for the control of soilborne pathogens in container grown herbaceous perennials. D. Brown-Rytlewski, **P.S. Wharton** and W.W. Kirk.

USDA-CSREES/NCR-IPM, \$44,037 (2004). Integration of measures to limit volunteer potato tuber survival for indirect control of potato late blight in the North Central Region. W.W. Kirk, **P.S. Wharton** and S. Snapp.

USDA-NRI, \$154,604 (2004). Host-pathogen interactions between *Phytophthora infestans* and potato tubers. **P.S. Wharton**, W.W. Kirk and D. Douches.

USDA-NRI, \$125,507 (2003). Understanding host-pathogen interactions between *Colletotrichum* species and small fruit crops. **P.S. Wharton**, A. Schilder, and J.F. Hancock.

USDA-NRI, \$125,507 (2002). Towards ecologically sound management of blueberry anthracnose based on an understanding of host-pathogen interactions. **P.S. Wharton**, A. Schilder, and J.F. Hancock.

SERVICE:

Major Committee Assignments:

Member of third year review committee for Gustavo Teixeira (July 2023).

Chair of department tenure and promotion committee for James Woodhall (September, 2022)

Member of department tenure and promotion committee for Kasia Duellman (September, 2022)

Chair of the search committee for the new plant pathologist position at Parma R&E center. (2015)

Member of the search committee for the new seed extension plant pathologist at Idaho Falls R&E center. (2015)

International:

2012-present, Associate Editor, Australasian Plant Pathology, Springer Press. Handled 15 manuscripts in 2022.

National:

2011-2013, Chair, Pathology Section of the Potato Association of America Executive Committee.

Regional:

2010-2011, Co-chair, The Idaho Association of Plant Protection.

Departmental:

Member of the Promotion and Tenure Committee for Alex Karasev, 2010

Professional and Scholarly Organizations:

The American Phytopathological Society, member (1997-present)

The Australasian Plant Pathology Society, member (2012-present)

The Potato Association of America, member (2004-present)

The Idaho Association of Plant Protection, member (2008-present)

Outreach Service:

Classes, Workshops, Seminars, Share Fairs and Tours Organized:

Potato Disease and Pest Management Advisory Committee Meeting. Virtual Meeting, November 28, 2022. Co-organizer (seminar)

Potato Disease and Pest Management Advisory Committee Meeting. Virtual Meeting, March 1, 2021. (seminar)

Potato Disease and Pest Management Advisory Committee Meeting. Aberdeen R & E Center, December 9, 2018. (seminar)

Potato Disease and Pest Management Advisory Committee Meeting. Aberdeen R & E Center, December 9, 2017. (seminar)

Potato Disease and Pest Management Advisory Committee Meeting. Aberdeen R & E Center, December 9, 2016. (seminar)

Potato Disease and Pest Management Advisory Committee Meeting. Aberdeen R & E Center, December 17, 2015. (seminar)

Potato Disease and Pest Management Advisory Committee Meeting. Aberdeen R & E Center, December 9, 2014. (seminar)

Potato Disease and Pest Management Advisory Committee Meeting. Aberdeen R & E Center, December 10, 2013. (seminar)

Potato Disease and Pest Management Advisory Committee Meeting. Aberdeen R & E Center, December 11, 2012. (seminar)

Potato Disease and Pest Management Advisory Committee Meeting. Aberdeen R & E Center, December 6, 2011. (seminar)

Idaho Association of Plant Protection Annual Meeting November 8-9, 2011. (meeting)

Wharton, P.S., Belcher, A.R., Wood, E.M., and Fairchild, K., 2011. University of Idaho Potato Research and Extension Program, University of Idaho Twilight Tour, Aberdeen, Idaho, July 21, 2011. (demonstration booth, poster)

Potato Disease and Pest Management Advisory Committee Meeting. Aberdeen R & E Center, December 7, 2010. (seminar)

Potato Pathology 2010 field day. Aberdeen R & E Center, August 10, 2010. (seminar and field tour)

Wharton, P.S., Belcher, A.R., Wood, E.M., and Larsen, H., 2010. University of Idaho Potato Research and Extension Program, University of Idaho Twilight Tour, Kimberly, Idaho, July 21, 2010. (demonstration booths, posters)

Potato Production and Pest Management Advisory Committee Meeting (co-organizer). Aberdeen R & E Center, December 7, 2009. (seminar)

Wharton, P.S., 2009. University of Idaho Potato Research and Extension Program, University of Idaho Twilight Tour, Aberdeen, Idaho, July 21, 2009. (demonstration booth, poster)

Web Pages:

2019-present, Idaho Crop Alerts Network	https://www.cropalerts.org
2011-present, Idaho Potato Diseases	http://www.idahopotatodiseases.org
2005-2018. Late Blight Risk Monitoring:	http://www.lateblight.org
2004-2017. Michigan Potato Diseases:	http://www.potatodiseases.org
2003-2010. Michigan Blueberry Facts:	http://www.blueberryfacts.org
2000-present. Sorghum Diseases:	http://www.sorghumanthracnose.org

Judging:

Review Activities:

Articles reviewed for professional journals: 20, Declined 10

Chromatography, 1
European Journal of Plant Pathology, 2
Biological Control, 1
Plant Pathology, 2
Plant Disease, 4
Potato Research, 1
Physiological and Molecular Plant Pathology, 1
Journal of Environmental Quality, 1
Crop Protection, 3
Phytopathology, 2
Canadian Journal of Plant Pathology, 1
American Journal of Potato Research, 1
International Journal of Pest Management, 1
Agronomy Journal, 1

Crop Protection, Springer (2022)

Manuscript number CROPRO-D-22-01039 “Evaluation of models based on generic infection model for controlling early blight in potatoes”

Potato Research, Springer (2022)

Manuscript number POTR-D-22-00046R1 “*Rhizoctonia solani* AG-3PT is the major pathogen associated with potato stem canker and black scurf in Jordan.”

Plant Pathology, Wiley-Blackwell Publications, (2022)

Manuscript number PP-22-261, "Isolation and Identification of a new *Epicoccum* species causing brown spot disease of potato (*Solanum tuberosum*) in China."

European Journal of Plant Pathology, Springer, (2013)

Manuscript number EJPP-D-13-00394, "Interference of ulvan with appressorium formation protects apple leaves against *Colletotrichum gloeosporioides* infection"

Australasian Plant Pathology, Springer, (2013)

Manuscript number AUPP-D-13-00137, "Effect of Karma, a novel formulation based on potassium bicarbonate, against *Penicillium* decay of oranges."

Plant Health Progress, APS Press, (2013)

Manuscript number PHP-RV-13-0076, "Host defenses associated with fruit infection by *Colletotrichum* species with an emphasis on anthracnose of blueberries."

Australasian Plant Pathology, Springer, (2013)

Manuscript number AUPP-D-13-00015, "Pathogenicity of *Blumeria graminis* f. sp. hordei in Australia in 2010 and 2011."

European Journal of Plant Pathology, Springer, (2013)

Manuscript number EJPP-D-13-00234, "Early blight in Sweden – are fungicide resistance causing a shift in the causal agent?"

Biological Control, Elsevier Publications, (2013)

Manuscript number BCON-13-145, "A Study of early (*Cercospora arachidicola* Hori.) and late leaf spot (*Phaeoisariopsis personata* (Berk. and Curt.) Von Arx.) Disease of Groundnut with the treatment of different bioagents."

Scientia Agricola, Escola Superior de Agricultura Luiz de Queiroz, (2013)

Manuscript number SA-2013-0128, "Eradicant and curative treatments of hexanal against peach brown rot."

Journal of Phytopathology, John Wiley & Sons, Inc., (2013)

Manuscript number JPHY-13-067, "Tuber Blight Development in Potato Cultivars in Response to Different Genotypes of *Phytophthora infestans*."

European Journal of Plant Pathology, Springer, (2012)

Manuscript number EJPP-D-12-03262, "Development and validation of a set of standard area diagrams and field key to estimate severity of potato early blight."

Biological Control, Elsevier Publications, (2012)

Manuscript number BCON-12-288, "Efficacy of *Pseudomonas* sp. strain S8.Fb11 in the biocontrol of *Rhizoctonia solani* on potato."

Biological Control, Elsevier Publications, (2012)

Manuscript number BCON-12-404, "Antimicrobial effects of volatiles produced by two antagonistic *Bacillus* strains on anthracnose pathogen in post-harvest mangos."

International Journal of Molecular Sciences, MDPI AG, (2012).

Manuscript number ijms-26051, "*Colletotrichum truncatum* Pathosystem on *Capsicum* spp: Infection, Colonization and Defence Mechanisms."

European Journal of Plant Pathology, Springer, (2012)

Manuscript number EJPP-D-12-02861, "Infection of citrus pollen grains by *Colletotrichum acutatum*."

Journal of Phytopathology, John Wiley & Sons, Inc., (2012)

Manuscript number JPHY-12-030, "Silicon and Fungicide on Anthracnose Progress in Moderately Resistant and Susceptible Sorghum Lines."

Plant Health Progress, APS Press, (2012).

Manuscript number PHP-RS-12-0052, "Evaluating the Spread of Potato Powdery Scab in Storage."

Plant Disease, APS Press, (2012).

Manuscript number PDIS-10-12-0912-PDN, "First Report of Binucleate *Rhizoctonia* AG-A Infecting Potato Plants in Jilin Province, China."

Plant Disease, APS Press, (Nov 2011).

Manuscript number PDIS-11-11-0932-RE, "Fusarium spp. Causing Dry Rot of Seed Potato Tubers in Michigan and their Sensitivity to Fungicides."

Crop Protection, Elsevier Publications, (Nov 2011)

Manuscript number CROPRO-D-11-00405, "The field resistance of potato cultivars to foliar early blight and its relationship with a maturity type and skin type."

Australasian Plant Pathology, CSIRO Publishing, (2011).

Manuscript number AUPP232, "*Colletotrichum truncatum* Pathosystem on Capsicum spp: Infection, Colonization and Defence Mechanisms."

Crop Protection, Elsevier Publications, (2011)

Manuscript number CROPRO-D-11-00217, "Development and validation of a standard area diagram set and field key to estimate severity of potato early blight."

European Journal of Plant Pathology, Springer, (2011)

Manuscript number EJPP2017, "Contributions to the study of the *Colletotrichum acutatum* - *Olea europaea* L. interaction."

Australasian Plant Pathology, CSIRO Publishing, (2011).

Manuscript number AP10160, "Studies of the germination and growth of *Colletotrichum acutatum* and *Colletotrichum gloeosporioides* isolates from coffee in Papua New Guinea and their pathogenicity to coffee berries."

Computers and Electronics in Agriculture, Elsevier Publications, (2010)

Manuscript number COMPAG-D-09-00276, "A web-based intelligent disease-diagnosis system using a new fuzzy-logic based approach for drawing the inferences in crops."

FEMS Microbiology Letters, Wiley-Blackwell Publications, (2010)

Manuscript number FEMSLE-10-07-0723, "*Fusarium solani* is responsible for mass mortalities in nests of loggerhead sea turtle, *Caretta caretta*, in Boavista, Cape Verde."

Phytopathology, APS Press, (2010)

Manuscript number Phyto-03-10-0063, "Postharvest Dark Skin Spots in Potato Tubers are an Over-Suberization Response to *Rhizoctonia solani*."

Plant Pathology, Wiley-Blackwell Publications, (2010)

Manuscript number PP-10-008, "Epidemiology, histopathology and aetiology of olive anthracnose caused by *Colletotrichum acutatum* and *C. gloeosporioides*."

Physiological and Molecular Plant Pathology, Elsevier Publications, (2010)

Manuscript number PMPP10-58, "Transcriptome profiling of *Fusarium solani* f. sp. *Eumartii* -infected potato tubers: evidences of an inducible defense response."

Scientia Agricola, Escola Superior de Agricultura Luiz de Queiroz, (2010)

Manuscript number 187-10, "Histopathology of *Colletotrichum gloeosporioides* (Penz.) Penz. & Sacc. on guava fruits (*Psidium guajava* L.)."

Plant Pathology, Wiley-Blackwell Publications, (2009)

Manuscript PP-08-320, "Penetration of cellophane membranes by nonmelanized appressoria in *Colletotrichum acutatum*."

Canadian Journal of Microbiology, NRC Research Press, (2009)

Manuscript CJM-09-270, "Histopathology of *Colletotrichum gloeosporioides* on guava fruit (*Psidium guajava* L.)."

Articles Reviewed for Peers:

Barley Yellow Dwarf Virus in Winter Grains (2013). Juliet Marshall. University of Idaho CIS Bulletin.

Pacific Northwest Extension Publishing Oregon State University (2012)

PNW Extension Bulletin 596, "Silver Scurf Management in Potatoes".

Selection for resistance to the Rhizoctonia-bacterial root rot complex in sugar beet (2012). C.A. Strausbaugh, I.A. Eujayl and P. Foote, USDA-ARS. Proposed journal for submission Plant Disease.

PROFESSIONAL DEVELOPMENT:

Teaching:

Lower Mallee and Lakes Grower Workshop. November 17, 2023, Murray Bridge Performing Art Centre, Murray Bridge, South Australia, Australia. Potato Link, Australian Potato Industry Communication and Extension Project.

Mitolo Potatoes Inc. Agronomy Team meeting. November 16, 2023, PIRSA Loxton Office, Loxton, South Australia, Australia. Potato Link, Australian Potato Industry Communication and Extension Project.

Parilla Premium Potato Agronomy Team meeting. November 15, 2023, Parilla Premium Potato LLC, Parilla, South Australia, Australia. Potato Link, Australian Potato Industry Communication and Extension Project.

SE South Australia Growers Workshop, November 14, 2023, Mount Gambier Golf Club, Mount Gambier, Victoria, Australia. Potato Link, Australian Potato Industry Communication and Extension Project.

Victoria Potato Growers Meeting, November 13, 2023, Bungaree Public Recreation Reserve, Bungaree, Victoria, Australia. Potato Link, Australian Potato Industry Communication and Extension Project.

USAID Feed the Future Global Biotechnology Potato Partnership disease assessment training workshop. May 31, 2023, KALRO Research Station, Molo, Kenya.

USAID Feed the Future Global Biotechnology Potato Partnership disease assessment training workshop. May 30, 2023, KALRO research farm, Njabini, Kenya.

USAID Feed the Future Global Biotechnology Potato Partnership disease assessment training workshop. May 29, 2023, International Livestock Research Institute, Nairobi, Kenya.

USAID Feed the Future Global Biotechnology Potato Partnership training workshop. March 2, 2023, KALRO research station, Molo, Kenya.

USAID Feed the Future Global Biotechnology Potato Partnership training workshop. March 1, 2023, KALRO research farm, Njabini, Kenya.

USAID Feed the Future Global Biotechnology Potato Partnership Harvest Workshop, February 28, International Livestock Research Institute, Nairobi, Kenya.

Wharton, P.S., 2022. Using Agriculture Research Management (ARM) software to design and manage potato field trials (training seminar). August 30-31, International Livestock Research Institute, Nairobi Kenya.

USAID Feed the Future Biotechnology Potato Partnership GM field trial training course, Indonesian Vegetable Research Institute, Lembang, Indonesia, February 22 – March 1, 2020.

USAID Feed the Future Biotechnology Potato Partnership Agriculture field trials management software training course, Indonesian Vegetable Research Institute, Lembang, Indonesia, December 14 – 16, 2019.

USAID Feed the Future Biotechnology Potato Partnership late blight sample collection training course, Bangladesh Agriculture Research Institute, Gazipur, Bangladesh, December 10 – 13, 2019.

USAID Feed the Future Biotechnology Potato Partnership training course, Bangladesh Agriculture Research Institute, Gazipur, Bangladesh, November 5 – 7, 2018.

USAID Feed the Future Biotechnology Potato Partnership training course, Indonesian Vegetable Research Institute, Lembang, Indonesia, October 30 – November 3, 2018.

USAID Feed the Future Biotechnology Potato Partnership training course, ICABIOGRAD, Bogor, Indonesia, January 29 – February 1, 2018.

USAID Feed the Future Biotechnology Potato Partnership training course, Michigan State University, August 16 – 29, 2017

USAID Feed the Future Biotechnology Potato Partnership training course, Michigan State University, June 26 – 30, 2017

McCain Washington Potato Grower Meeting, Othello, WA, March, 2016.

McCain Idaho Potato Grower Meeting, Burley, ID, March, 2016.

Nichino America Annual Meeting, St. Petersburg, FL, December 2014.
 Guelph Potato Growers Meeting, Guelph, Ontario, Canada, March 5, 2013.
 Wisconsin Potato and Vegetable Growers Meeting, Stevens Point, WI., February 5 – 7, 2013.
 Idaho Potato Conference, Pocatello, Idaho, January 23-24, 2013.
 Potato Expo, Las Vegas, Nevada, January 9-11, 2013.
 Potato Partners Program, San Diego, 3-7, 2012.
 39th Annual Hermiston Farm Fair & Ag Trade Show, Hermiston, OR., November 28 – 30, 2012.
 Idaho Association of Plant Protection Meeting, Jerome, Idaho Nov. 7-8, 2012.
 SCRI Zebra Chip Reporting Session, San Antonio, October 30-November 2, 2012.
 American Phytopathological Society Fungicide Resistance Workshop, Providence, RI August 3-4, 2012.
 Idaho Potato Conference, Pocatello, Idaho, January 18-19, 2012.
 Potato Expo, Orlando, FL, January 3-6, 2012.
 DuPont Crop Protection Tour, Wilmington, DE, December 12-15, 2011.
 Gowan Company Research Meeting, Yuma, AZ, February 21-24, 2011.
 Idaho Potato Conference, Pocatello, Idaho, January 19-20, 2011.
 Potato Expo, Las Vegas, Nevada, January 5-7, 2011.
 Potato Partners Program, New Orleans, LA, Nov. 29-Dec. 2, 2010.
 Idaho Association of Plant Protection Meeting, Jerome, Idaho Nov. 8-9, 2010.
 DuPont Crop Protection, New Fungicides Meeting, Newark, DE, 8 - 10 February, 2010.
 Idaho Potato Conference, Pocatello, Idaho, January 20-21, 2010.
 Potato Expo, Orlando, FL, January 4-7, 2010.
 Potato Partners Program, Key West, FL, Dec. 8-Dec. 11, 2009.
 Idaho Association of Plant Protection Meeting, Jerome, Idaho Nov. 9-10, 2009.
 Idaho Potato Conference, Pocatello, Idaho, January 21-22, 2009.
 Idaho Seed Potato Grower's 41st Annual Seminar, Pocatello, Idaho January 20, 2009.
 Potato Partners Program, Tucson, AZ, Nov. 10-Dec. 12, 2009.
 Idaho Association of Plant Protection Meeting, Jerome, Idaho Nov. 5-6, 2008.

Scholarship:

Australasian Plant Pathology Society Meeting, November 20 – 24, Adelaide, Australia 2023.
 USAID Feed the Future Global Biotechnology Potato Partnership Growers Communication Workshop. September 18, 2023, Harris Hotel, Bandung, Indonesia.
 International Congress of Plant Pathology, August 19 – 26, Lyon, France 2023. (posters)
 International Society for Biosafety Research, April 30 – May 4, St Louis, Missouri 2023.
 11th Australasian Soilborne Diseases Symposium. August 1-5, Cairns, Australia 2022.
 World Potato Congress, Dublin, Ireland, May 30 – June 2, 2022
 EuroBlight Symposium. Ascona, Switzerland 9-12 May, 2022.
 Idaho Association of Plant Protection, Virtual, 4 -5 November, 2020.
 Potato Association of America Annual Meeting, Virtual, 17 – 18 July, 2020.
 Australasia Plant Pathology Society Meeting, Melbourne, Australia, 24 – 29 Nov, 2019.
 Potato Association of America Annual Meeting, Winnepeg, Canada, 28 Jul – 1 Aug 2019.
 EuroBlight Symposium. York, UK, 12 – 16 May 2019.
 15th International Society for Biosafety Research, Tarragona, Spain, 1 – 4 April, 2019.
 10th Australasian Soilborne Diseases Symposium, Adelaide, Australia, September 5 -7, 2018.
 International Plant Pathology Congress, Boton, MA, July 29 – August 3, 2018.
 Potato Association of America Annual Meeting, Boise, ID, July 22 – 26, 2018.
 10th World Potato Congress, Cusco, Peru, 27 – 31 May, 2018.
 American Phytopathological Society Annual Meeting, San Antonio, TX, August 6-9, 2017.
 Conference on Soilborne Plant Pathogens. University of California, Davis, CA, March 28 – 30, 2017.
 9th Australasian Soilborne Diseases Symposium. Lincoln University, Christchurch, New Zealand 14–17 November 2016.
 Potato Association of America Annual Meeting, Grand Rapids, MI, July 2016.
 Washington-Oregon Potato Conference, Pasco, WA, January 2016.
 Potato Association of America Annual Meeting, Spokane, WA, July 2014
 International Horticultural Congress 2014, Brisbane, Australia, August 2014
 Zebra Chip Reporting Session, Portland, OR, November 2014
 American Phytopathological Society Annual Meeting, Austin, TX, August 10-14, 2013.
 97th Meeting of The Potato Association of America, Quebec City, Canada, July 28-Aug 1, 2013.
 Pacific Division American Phytopathological Society Annual Meeting, Tucson, AZ, June 16-19, 2013.

96th Meeting of The Potato Association of America, Denver, CO, August 12-16, 2012.
American Phytopathological Society Annual Meeting, Providence, RI August 5-8, 2012.
Pacific Division American Phytopathological Society Annual Meeting, Sacramento, CA 28-29 June, 2012.
World Potato Congress 2012, Edinburgh, United Kingdom, May 27-30, 2012.
95th Meeting of The Potato Association of America, Wilmington, North Carolina, August 14 - 18, 2011.
American Phytopathological Society Annual Meeting, Honolulu, Hawaii, August 5 – 10, 2011.
94th Meeting of The Potato Association of America, Corvallis, Oregon, August 15 - 19, 2010.
Joint American Phytopathological (Pacific Division)/ Canadian Phytopathological Society Meeting, Vancouver, BC, Canada, 20 – 24 June, 2010.
93rd Meeting of The Potato Association of America, Fredricton, New Brunswick, Canada, August 8 - 14, 2009.
American Phytopathological Society Annual Meeting, Portland, Oregon, August 1 – 5, 2009.
92nd Meeting of The Potato Association of America, Buffalo, NY, August 10 - 15, 2008.