

CURRICULUM VITAE

NAME

Broders, Kirk Dale

ADDRESS

Bioagricultural Sciences and Pest Management
College of Agricultural Sciences

PHONE

(970) 491-0850

EDUCATION

2008 Ph D, The Ohio State University

2004 BS, University of Nebraska-Lincoln

OTHER POSITIONS

August 2015 - Present Assistant Professor, BSPM, Colorado State University.

2011 - 2015 Assistant Professor, University of New Hampshire.

2009 - 2010 Post-doctoral Research Fellow, University of Guelph.

PUBLISHED WORKS

Refereed Journal Articles

Aggarwal, T., Westbrook, A., Broders, K. D., Woeste, K., MacManus, M. (2016). De novo genome assembly of *Geosmithia morbida*, the causal agent of Thousand Cankers Disease. *BMC Genomics*.

Broders, K. D., Munck, I., Wyka, S., Iriarte, G., Beaudoin, E. (2015). Characterization of Fungal Pathogens Associated with White Pine Needle Damage (WPND) in Northeastern North America. *Forests*, 6(11), 4088-4104.

Munck, I. A., Livingston, W., Lombard, K., Luther, T., Ostrofsky, W. D., Weimer, J., Wyka, S., Broders, K. D. (2015). Extent and Severity of Caliciopsis Canker in New England, USA: An Emerging Disease of Eastern White Pine (*Pinus strobus* L.). *Forests*, 6(11), 4360-4373.

Aćimović, S. G., Harmon, C. L., Bec, S., Wyka, S., Broders, K. D., Docola, J. J. (2015). First Report of *Diplodia corticola* Causing Decline of Red Oak (*Quercus rubra*) Trees in Maine. *Plant Disease*.
[dx.doi.org/10.1094/PDIS-09-15-0994-PDN](https://doi.org/10.1094/PDIS-09-15-0994-PDN)

Boraks, A. W., Broders, K. D. (in press). Population genetics of butternut (*Juglans cinerea*) in the northeastern United States. *Conservation Genetics*.

Laflamme, G., Broders, K. D., Côté, C., Munck, I., Iriarte, G., Innes, L. (2015). Priority of *Lophophacidium* over *Canavirgella*: taxonomic status of *Lophophacidium dooksii* and *Canavirgella banfieldii*, causal agents of a white pine needle disease. *Mycologia*, 107(4), 745-753.

Broders, K. D., Boraks, A., Barbison, L., Brown, J. R., Boland, G. (2015). Recent insights into the pandemic disease butternut canker caused by the invasive pathogen *Ophiognomonium clavigenanti-juglandacearum*. *Forest Pathology*, 45(1), 1-8.

Wyka, S. A., Broders, K. D. *Septorioides strobis* sp. nov., a new species associated with needle defoliation of eastern white pine (*Pinus strobus* L.) in the Northeastern United States. *Fungal Diversity*.

Non-Refereed Journal Articles

Hale, I. L., Wollheim, W. M., Smith, R. G., Asbjornsen, H., Brito, A. F., Broders, K. D., Grandy, A. S., Rowe, R. (2014). A Scale-Explicit Framework for Conceptualizing the Environmental Impacts of Agricultural Land Use Changes. *Sustainability*, 6(12), 8432-8451. <Go to ISI>://WOS:000346794700006

Hale, I. L., Broders, K. D., Iriarte, G. (2014). A Vavilovian approach to discovering crop-associated microbes with potential to enhance plant immunity. *Frontiers in Plant Science*, 5. <Go to ISI>://WOS:000343859500001

Boraks, A., Broders, K. D. (2014). Butternut (*Juglans cinerea*) health, hybridization, and recruitment in the northeastern United States. *Canadian Journal of Forest Research*, 44(10), 1244-1252. <Go to ISI>://WOS:000343114300011

Lichtner, F. J., Broders, K. D. (2014). Characterization of foliar pathogens infecting perennial rye grass in the northeastern US. *Phytopathology*, 104(11), 69-69. <Go to ISI>://WOS:000346303300392

Wallhead, M., Broders, K. D. (2014). Comparison of vegetation indices produced by two spectrometers: A hyperspectral assessment of *Malus domestica* leaves. *Phytopathology*, 104(11), 124-124. <Go to ISI>://WOS:000346303300708

Gleeson, G., Wallhead, M., Broders, K. D. (2014). Distinguishing resistant from tolerant host-pathogen interactions between *Fragaria vesca* and *Verticillium dahliae*. *Phytopathology*, 104(11), 46-46. <Go to ISI>://WOS:000346303300261

Wallhead, M., Broders, G. A., Beaudoin, E., Peralta, C., Broders, K. D. (2014). Phylogenetic assessment of *Colletotrichum* species associated with bitter rot and *Glomerella* leaf spot in the northeastern US. *Phytopathology*, 104(11), 123-124. <Go to ISI>://WOS:000346303300707

Broders, K., Parker, M., Melzer, M., Boland, G. (2014). Phylogenetic Diversity of *Rhizoctonia solani* Associated with Canola and Wheat in Alberta, Manitoba, and Saskatchewan. *Plant Disease*, 98(12), 1695-1701.

Broders, K. D., Parker, M. L., Melzer, M. S., Boland, G. J. (2014). Phylogenetic Diversity of *Rhizoctonia solani* Associated with Canola and Wheat in Alberta, Manitoba, and Saskatchewan. *Plant Disease*, 98(12), 1695-1701. <Go to ISI>://WOS:000348827600015

Zerillo, M. M., Caballero, J. I., Woeste, K., Graves, A. D., Hartel, C., Pscheidt, J. W., Tonos, J., Broders, K. D., Cranshaw, W. S., Seybold, S. J., Tisserat, N. A. (2014). Population Structure of *Geosmithia morbida*, the Causal Agent of Thousand Cankers Disease of Walnut Trees in the United States. *Plos One*, 9(11). <Go to ISI>://WOS:000347709300113

Zerillo, M. M., Caballero, J. R. Ibarra, Woeste, K. E., Graves, A. D., Hartel, C., Pscheidt, J. W., Tonos, J., Broders, K. D., Cranshaw, W. S., Seybold, S. J., Tisserat, N. A. (2014). Population structure of *Geosmithia morbida*, the causal agent of Thousand cankers disease of walnut trees in the United States. *Phytopathology*, 104(11), 135-135. <Go to ISI>://WOS:000346303300770

- Broders, K. D., Laflamme, G., Cote, C., Munck, I., Broders, G. A., Innes, L. (2014). Taxonomical status of *Lophophacidium dooksii* and *Canavirgella banfieldii*, causal agent of a white pine needle disease. *Phytopathology*, 104(3), 1-2. <Go to ISI>://WOS:000346302000004
- Lichter, F., Blasioli, K., Gleeson, G., Coats, K., Elliot, M., Hammett, C., Hamelin, R., Shamoun, S., Broders, K. D. (2013). Comparative genomic analysis of phenotypically and genotypically diverse isolates of *Phytophthora ramorum*. *Phytopathology*, 103(6), 82-82. <Go to ISI>://WOS:000322799500452
- Parker, M., Melzer, M., Boland, G., Broders, K. D. (2013). Diversity of *Rhizoctonia solani* associated with canola, wheat, and pea in Alberta, Manitoba, and Saskatchewan. *Phytopathology*, 103(6), 111-111. <Go to ISI>://WOS:000322799500609
- Peralta, C., Broders, K. D. (2012). Characterization of virulence and genotypic diversity of *Colletotrichum acutatum* isolates recovered from apple in New Hampshire. *Phytopathology*, 102(7), 91-91. <Go to ISI>://WOS:000322797800478
- Boraks, A., Broders, K. D. (2012). Evaluation of the effect of butternut canker on the genetic diversity of regenerating butternut in New England. *Phytopathology*, 102(7), 13-14. <Go to ISI>://WOS:000322797800071
- Broders, K. D., Boraks, A., Sanchez, A. M., Boland, G. J. (2012). Population structure of the butternut canker fungus, *Ophiognomonia clavignenti-juglandacearum*, in North American forests. *Ecology and Evolution*, 2(9), 2114-2127. <Go to ISI>://WOS:000312449300003
- Broders, K. D., Lipps, P. E., Ellis, M. L., Dorrance, A. E. (2012). *Pythium delawarii* a new species isolated from soybean in Ohio (vol 101, pg 232, 2009). *Mycologia*, 104(3), 789-789. <Go to ISI>://WOS:000305497800018
- Ellis, M. L., Paul, P. A., Dorrance, A. E., Broders, K. D. (2012). Two new species of *Pythium*, *P. schmitthenneri* and *P. selbyi* pathogens of corn and soybean in Ohio. *Mycologia*, 104(2), 477-487. <Go to ISI>://WOS:000301762100013
- Broders, K. D. (2012). Welcome to the micropolis: How metagenomics can enhance plant pathology research. *Phytopathology*, 102(7), 160-160. <Go to ISI>://WOS:000322797800833
- Broders, K. D., Woeste, K. E., SanMiguel, P. J., Westerman, R. P., Boland, G. J. (2011). Discovery of single-nucleotide polymorphisms (SNPs) in the uncharacterized genome of the ascomycete *Ophiognomonia clavignenti-juglandacearum* from 454 sequence data. *Molecular Ecology Resources*, 11(4), 693-702. <Go to ISI>://WOS:000292478500011
- Ellis, M. L., Broders, K. D., Paul, P. A., Dorrance, A. E. (2011). Infection of Soybean Seed by *Fusarium graminearum* and Effect of Seed Treatments on Disease Under Controlled Conditions. *Plant Disease*, 95(4), 401-407. <Go to ISI>://WOS:000288728200004
- Broders, K. D., Barbison, L., Boland, G. (2011). Population structure of *Ophiognomonia clavignenti-juglandacearum* reveals multiple introductions of the butternut canker fungus into North America. *Phytopathology*, 101(6), S20-S20. <Go to ISI>://WOS:000295045400114
- Broders, K. D., Boland, G. J. (2011). Reclassification of the butternut canker fungus, *Sirococcus clavignenti-juglandacearum*, into the genus *Ophiognomonia*. *Fungal Biology*, 115(1), 70-79. <Go to ISI>://WOS:000286857000008
- Ellis, M. L., Broders, K. D., Paul, P. A., Dorrance, A. E. (2010). Description of two putative new species of

- Pythium isolated from soybean and corn in Ohio. *Phytopathology*, 100(6), S33-S33. <Go to ISI>://WOS:000295042000196
- Broders, K. D., SanMiguel, P. J., Westerman, R. P., Woeste, K. E., Boland, G. J. (2010). Discovering single nucleotide polymorphisms (SNPs) in an uncharacterized fungal genome using the software EagleView to evaluate 454 sequencing data. *Phytopathology*, 100(6), S17-S17. <Go to ISI>://WOS:000295042000099
- Broders, K. D., Boland, G. J. (2010). Molecular Diagnostic Assay for Detection of the Butternut Canker Pathogen *Sirococcus clavignenti-juglandacearum*. *Plant Disease*, 94(8), 952-958. <Go to ISI>://WOS:000280058900003
- Broders, K. D., Boland, G. J. (2010). Reclassification of the butternut canker fungus, *Sirococcus clavignenti-juglandacearum*, into the genus *Ophiognomonia*. *Phytopathology*, 100(6), S17-S17. <Go to ISI>://WOS:000295042000100
- Ellis, M. L., Dawes, S. M., Austin, G. D., Broders, K. D., Olaya, G., Bruns, D., Dorrance, A. E. (2009). Assessing the diversity of *Pythium* species and fungicide efficacy in agronomic production fields in Ohio. *Phytopathology*, 99(6), S32-S33. <Go to ISI>://WOS:000266213300191
- Broders, K. D., Wallhead, M. W., Austin, G. D., Lipps, P. E., Paul, P. A., Mullen, R. W., Dorrance, A. E. (2009). Association of Soil Chemical and Physical Properties with *Pythium* Species Diversity, Community Composition, and Disease Incidence. *Phytopathology*, 99(8), 957-967. <Go to ISI>://WOS:000267899100008
- Broders, K. D., Boland, G. J. (2009). Development of species-specific primers for the detection of the butternut canker pathogen *Sirococcus clavignenti-juglandacearum*. *Phytopathology*, 99(6), S16-S17. <Go to ISI>://WOS:000266213300094
- Broders, K. D., Lipps, P. E., Ellis, M. L., Dorrance, A. E. (2009). *Pythium delawarii*-a new species isolated from soybean in Ohio. *Mycologia*, 101(2), 232-238. <Go to ISI>://WOS:000265275700009
- Broders, K. D., Wallhead, M., Paul, P. A., Lipps, P. E., Dorrance, A. E. (2008). Assessing *Pythium* population dynamics from different soil regions in Ohio. *Phytopathology*, 98(6), S26-S26. <Go to ISI>://WOS:000256125600124
- Ellis, M. L., Broders, K. D., Dorrance, A. E. (2008). Comparison of strobilurin type fungicides to control soybean seedling pathogens. *Phytopathology*, 98(6), S50-S51. <Go to ISI>://WOS:000256125600262
- Broders, K. D., Wallhead, M., Austin, G., Paul, P. A., Lipps, P. E., Dorrance, A. E. (2008). Effect of soil physical properties on incidence of corn and soybean damping-off caused by *Pythium* spp. *Phytopathology*, 98(6), S26-S26. <Go to ISI>://WOS:000256125600123
- Ellis, M. L., Broders, K. D., Paul, P. A., Dorrance, A. E. (2008). Efficacy of fungicides against *Fusarium graminearum* isolates associated with soybean seedling diseases in Ohio. *Phytopathology*, 98(6), S51-S51. <Go to ISI>://WOS:000256125600263
- Wallhead, M. W., Broders, K. D., Ellis, M. L., Dorrance, A. E. (2008). Evaluation of a soil baiting technique to test the efficacy of fungicidal seed treatments against soybean seedling pathogens. *Phytopathology*, 98(6), S165-S165. <Go to ISI>://WOS:000256125600903
- Broders, K. D., Dorrance, A. E. (2008). The description and phylogenetic placement of two putative new species of *Pythium*. *Phytopathology*, 98(6), S201-S202. <Go to ISI>://WOS:000256125601101
- Broders, K. D., Paul, P. A., Dorrance, A. E. (2007). Assessment of direct colony PCR and SSCP to determine the

distribution of pathogenic *Pythium* spp. in Ohio. *Phytopathology*, 97(7), S14-S14. <Go to ISI>://WOS:000247470000081

Broders, K. D., Lipps, P. E., Paul, P. A., Dorrance, A. E. (2007). Characterization of *Pythium* spp. associated with corn and soybean seed and seedling disease in Ohio. *Plant Disease*, 91(6), 727-735. <Go to ISI>://WOS:000246590900011

Broders, K. D., Lipps, P. E., Dorrance, A. E. (2007). Evaluation of *F. graminearum* as a seed and seedling pathogen of corn and soybean in Ohio. *Phytopathology*, 97(7), S159-S159. <Go to ISI>://WOS:000247470001384

Broders, K. D., Lipps, P. E., Paul, P. A., Dorrance, A. E. (2007). Evaluation of *Fusarium graminearum* associated with corn and soybean seed and seedling disease in Ohio. *Plant Disease*, 91(9), 1155-1160. <Go to ISI>://WOS:000248999900015

Broders, K. D., Lipps, P. E., Dorrance, A. E. (2007). Evaluation of *Pythium* spp. associated with corn and soybean seed and seedling disease in Ohio. *Phytopathology*, 97(7), S159-S159. <Go to ISI>://WOS:000247470001385

Broders, K. D. (2007). The description and phylogenetic placement of two new species of *Pythium*.

Broders, K. D. (2006). Identification, pathogenicity, and fungicide sensitivity of *Pythium* species associated with corn and soybean seed and seedling disease in Ohio.

Broders, K. D., Partridge, J. E. (2004). A new corn and sorghum infecting *Cercospora* sp isolated from smooth brome grass. *Phytopathology*, 94(6), S10-S11. <Go to ISI>://WOS:000202993500068

Non-Refereed Proceedings or Transactions

Dorrance, A., Mills, D., Easley, B., Mangione, D., Yost, J., McClure, G., Bender, R., Sundermeier, A., Sonnenberg, D., Hammond, R., Broders, K. D. (2008). *Foliar Fungicides and Fungicide Seed Treatments: Getting That Return on Investment* (pp. 11). 2008 Illinois Crop Protection Technology Conference.

Broders, K., Lipps, P., Dorrance, A. Evaluation of *Pythium* spp. associated with corn and soybean seed and seedling disease in Ohio. *PHYTOPATHOLOGY* (vol. 97, pp. S159-S159). AMER PHYTOPATHOLOGICAL SOC 3340 PILOT KNOB ROAD, ST PAUL, MN 55121 USA.

Ph.D. Thesis

Broders, K. D. (2008). *Seed and Seedling Disease of Corn and Soybean in Ohio: The Role of Fusarium graminearum, Pythium species diversity, fungicide sensitivity, Pythium community composition, and soil properties in disease severity.*

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

August 2015, "Characterization of fungi associated with needle defoliation of eastern white pine (*Pinus strobus*)", APS Annual Meeting, The American Phytopathological Society, (Presenter) Wyka, S.

October 2014, "Characterization and distribution of fungi associated with needle defoliation of eastern white pine (*Pinus strobus*)", XXIV IUFRO World Congress, The International Forestry Review.

TEACHING:

<u>Year</u>	<u>Semester</u>	<u>Course No./Title</u>	<u>Cr. Hrs.</u>	<u>Enrollment</u>
2016	Spring	BSPM361 - Elements of Plant Pathology	3	56
2016	Spring	BSPM361 - Elements of Plant Pathology - Lab	0	22
2016	Spring	BSPM361 - Elements of Plant Pathology - Lab	0	20
2016	Spring	BSPM361 - Elements of Plant Pathology - Lab	0	14
2016	Spring	BSPM794 - Independent Study	3	2
2016	Spring	BSPM450 - Molecular Plant-Microbe Interaction	3	4
2016	Spring	BSPM550 - Molecular Plant-Microbe Interactions	3	12
2016	Spring	BSPM798 - Research	18	14
2015	Fall	BSPM798 - Research	18	9

EXTENSION/ENGAGEMENT ACTIVITIES/ACCOMPLISHMENTS

Presentation

Plant Disease Forecasting. Adult, Fort Collins, CO. Percent Responsible: 100%. 4th Quarter 2015.

Wheat Disease Research Update. Adult, Fort Morgan, CO. Percent Responsible: 100%. 4th Quarter 2015.

COMMITTEES

Hamel Center Advisory Committee, (2013 - 2015).

Undergraduate Research Conference Organization Committee, (2013 - 2015).

Graduate Program Coordinator, (2014 - 2015).

DBS Scholarships Committee, (2013 - 2015).

Graduate Admission Committee, (2013 - 2015).

Graduate Faculty- Genetics and Microbiology, (2011 - 2015).

Graduate Faculty- Plant Biology, (2011 - 2015).

Graduate Restructuring Committee, (2012 - 2013).

PROFESSIONAL AFFILIATIONS AND ACTIVITIES

Committee Chair, Mycology Committee, American Phytopathological Society. (2013 - Present).

Member, Mycological Society of America. (2008 - Present).

Committee Member, Mycology Committee, American Phytopathological Society. (2008 - Present).

Committee Member, Soil microbiology and root disease committee, American Phytopathological Society. (2008 - Present).

Member, American Phytopathological Society. (2007 - Present).

Chairperson, Ecological and genetic diversity of soilborne pathogens and indigenous microflora. (2012 - 2013).

Committee Chair, Soil microbiology and root disease committee, American Phytopathological Society. (2012 - 2013).
