

CURRICULUM VITAE for DAVID H. GENT
June 2011

RANK: Assistant Professor (Courtesy)

MAILING ADDRESS: USDA-ARS
National Forage Seed Production Research Center
3450 SW Campus Way
Corvallis, OR 97331

COMMUNICATIONS: **Phone:** (541) 738-4167 **Fax:** (541) 738-4160
E-mail: gentd@onid.orst.edu

A. EDUCATION AND EMPLOYMENT INFORMATION

EDUCATION

2004 Ph.D. Plant Pathology, Colorado State University, Fort Collins
2002 M.S. Plant Pathology, Colorado State University, Fort Collins
1999 B.S. Crop and Soil Science, Biology Minor, Oregon State University, Corvallis

POSITIONS HELD

Assistant Professor (Courtesy), Botany and Plant Pathology, Oregon State University, 2005 – present
Research Plant Pathologist (GS-13), USDA-ARS, FSCRU, Corvallis, Oregon, 2008 - present
Research Plant Pathologist (GS-12), USDA-ARS, FSCRU, Corvallis, Oregon, 2004 – 2008
Honorary Faculty, University of Tasmania, Tasmania, Australia, 2008 - present
Visiting scientist, University of Tasmania, Tasmania, Australia, 2007

APPOINTMENT: Courtesy (12 month), Botany and Plant Pathology

FTE DISTRIBUTION: 100% USDA-ARS

PRINCIPAL DUTIES IN PRESENT POSITION

Dr. Gent has primary responsibilities in research, service, and extension education and outreach for USDA-ARS related to the biology, epidemiology, and integrated management of plant diseases. His primary commodity responsibilities are for hop.

B. TEACHING, ADVISING AND OTHER ASSIGNMENTS

a. CREDIT COURES

<u>Course Number</u>	<u>Course Name</u>	<u>Term/Year</u>	<u># Students</u>	<u>% Responsibility</u>
Oregon State University				
BOT 401	Research	Fall/2009	1 (Ashley Harp)	100%
BOT 401	Research	Fall/2006	1 (Stefani Gibson)	100%
Colorado State University				
BZ 310	Cell Biology	Fall 1999	50	100% (GTA)
BSPM 361	Elements of Plant Pathology	Spring 2000	75	40% (GTA)

Guest lectures

“Implementing IPM Systems” HORT 542 Principles of Integrated Pest Management: Systems Design, 17 November, 2009

b. NONCREDIT COURSES, WORKSHOPS, AND PRESENTATIONS

1. Gent, D. H. 2011. Disease Research Update. Oregon Hop Commission, February 17, St. Paul, Oregon
2. Gent, D. H. 2011. Hop Powdery Mildew: Biology and Management. G.S. Long Grower Meeting, Yakima, Washington, January 19.
3. Gent, D. H. 2011. Hop Powdery Mildew: Biology and Management. G.S. Long Grower Meeting, Yakima, Washington, January 12.
4. Gent, D. H. 2010. Late Season Management of Powdery Mildew. Oregon Hop Commission, June 24, Woodburn, Oregon.
5. Gent, D. H., Dreves, A. J., and Woods, J. L. 2010. IPM in Hops. Oregon Hop Commission, June 17, Woodburn, Oregon.
6. Gent, D. H. 2010. Downy Mildew Management. Oregon Hop Commission, May 25, Woodburn, Oregon
7. Gent, D. H. 2010. Diseases and Pests of Hop: Identification and Management. Sierra Nevada Brewing Co., May 18, Chico, California.
8. Gent, D. H. 2010. Disease Management Considerations for 2010. Oregon Hop Commission, Woodburn, Oregon, February 11.
9. Woods, J. L. *, and Gent, D. H. 2010. Integrating Powdery Mildew and Mite Management. Oregon Hop Commission, Woodburn, Oregon, February 11. (*Graduate student in my program.)
10. Gent, D. H. 2010. Forecasting and Management of Powdery Mildew on Cones. Winter Meeting of the Hop Research Council, Yakima, Washington, January 22.
11. Woods, J. L. *, and Gent, D. H. 2010. Impacts of Sulfur Timing on Arthropod Pests and Predators. Winter Meeting of the Hop Research Council, Yakima, Washington, January 22. (*Graduate student in my program.)
12. Gent, D. H. 2010. Hop Powdery Mildew: Biology and Management. G.S. Long Grower Meeting, Yakima, Washington, January 19.
13. Gent, D. H. 2010. Hop Powdery Mildew: Biology and Management. Washington Tree Fruit Research Commission, Yakima, Washington, January 14.
14. Gent, D. H. 2010. Managing Powdery and Downy Mildew with Delayed Spring Pruning. Oregon Hop Commission, Mt. Angel, Oregon, January 12.

15. Woods, J. L.*, and Gent, D. H. 2009. Diseases and Pests of Hop: Identification and Management. Michigan State University Sustainable Hops Production Workshop, Traverse City, Michigan, October 2. (*Graduate student in my program.)
16. Gent, D. H. 2009. Interactions of Fungicide Programs and Spider Mite Outbreaks. Oregon Hop Commission, Woodburn, Oregon, February 19.
17. Gent, D. H. 2009. Managing Powdery and Downy Mildew with Delayed Spring Pruning. Oregon Hop Commission, Woodburn, Oregon, January 16.
18. Gent, D. H. and Nelson, M. E. 2009. Powdery Mildew Cone Infection: Risk Factors and Management. G.S. Long Annual Grower Meeting, Yakima, Washington, January 14.
19. Gent, D. H. 2006. Integrated Management of Hop Disease and Pests. Busch Agricultural Research, Inc. Annual Grower Meeting, Sunnyside, Washington, November 26.
20. Gent, D. H. 2006. Integrated Management of Hop Disease and Pests. Busch Agricultural Research, Inc. Annual Grower Meeting, Salem, Oregon, November 25.
21. Gent, D. H. 2005. Powdery Mildew and Downy Mildew Research Update. Busch Agricultural Research, Inc. Annual Grower Meeting, Sunnyside, Washington, November 3.
22. Gent, D. H. 2005. Powdery Mildew and Downy Mildew Research Update. Busch Agricultural Research, Inc. Annual Grower Meeting, Mt. Angel, Oregon, November 2.
23. Gent, D. H. 2005. Mid-season Management of Powdery Mildew. Yakima Chief Grower Meeting, Washington, Sunnyside, Washington, July 13.
24. Gent, D. H. 2005. Xanthomonas Leaf Blight of Onion: Biology, Epidemiology, and Management. Central Oregon Agricultural Research Center, Madras, Oregon, July.
25. Gent, D. H. and Schwartz, H. F. 2005. *Iris yellow spot virus*: Biology, Epidemiology, and Management. 2005 Western Plant Disease Conference, January 4, Portland, Oregon.
26. Gent, D. H., and Schwartz, H. F. 2004. Management of Onion Diseases in Colorado. Empire State Vegetable Conference, February 11-12, Rochester, New York.
27. Gent, D. H., and Schwartz, H. F. 2004. Colorado Onion Production. Empire State Vegetable Conference, February 11-12, Rochester, New York.
28. Gent, D. H., and Schwartz, H. F. 2004. *Iris yellow spot virus*: Biology, Epidemiology, and Management. 2004 Idaho-Eastern Oregon Onion Growers Association Annual Meeting, November 17, Pasco, Washington.
29. Gent, D. H., and Schwartz, H. F. 2004. *Iris yellow spot virus*: Biology, Epidemiology, and Management. 2004 Pacific Northwest Vegetable Growers Association Annual Meeting, January 14, Ontario, Oregon.
30. Schwartz, H. F., and Gent, D. H. 2004. A Thrips-Transmitted Virus Threatens the United States Onion Industry. Colorado State University Infectious Diseases Research Colloquium, April 5-6, Fort Collins, Colorado.

c. GRADUATE STUDENTS AND POSTDOCTORAL TRAINEES

Sierra Wolfenbarger, M.S., Oregon State University Department of Botany and Plant Pathology, 2011 to 2013 (expected)

Joanna Farnsworth-Woods, M. Ag., Oregon State University Department of Crop and Soil Science, 2008 to 2011 (expected)

Melanie Mitchell, M.S., Oregon State University Department of Botany and Plant Pathology, 2007 to 2010

Thomas O'Malley, PhD, Plant Pathology, University of Tasmania, Tasmanian Institute of Agricultural Research, 2007 to 2011 (expected). Co-advised with Drs. Sarah Pethybridge and Frank Hay.

d. INTERNATIONAL TEACHING

External PhD reviewer for dissertation of Dr. Nasreen Sultana, Department of Botany, University of Karachi, Pakistan, 2009

e. ADVISING

GRADUATE COMMITTEE MEMBERSHIPS

Hui Yan, Ph.D., Washington State University, Department of Plant Pathology, 2013 (expected)

Natasha Cerruti, M.S., Oregon State University Department of Botany and Plant Pathology, 2010

UNDERGRADUATE ADVISING

Research Experience: Leah Mancio (2010-present); University of Oregon, Honors College
Project: Genetic diversity and reproductive lifecycle of *Pseudoperonospora humuli*.

Research Experience: Stefani Gibson (2006); 1 quarter, Oregon State University Department of Chemistry

Project: Molecular detection of *Pseudoperonospora humuli* in asymptomatic plant tissues.

Research Experience: Joanna Farnsworth (2005); 1 quarter; Oregon State University Department of Agricultural Education and General Agriculture

Project: Integrated management of hop diseases and pests.

HIGH SCHOOL STUDENT ADVISING

Research Experience: Christine Myers (2008); 1 quarter; homeschooled, Harrisburg, Oregon
Project: Characterization of *Verticillium albo-atrum* isolates from hop. ARS Pacific West Area Summer Research Apprenticeship Program.

Research Experience: Ryan McMinds (2007); 1 quarter; South Albany High School, Oregon
Project: Hop pathogen identification using genetic techniques. Apprenticeships in Science and Engineering.

Research Experience: Alison Priewe (2007); 1 quarter; Philomath High School, Oregon
Project: The importance of microbiology in agriculture. Philomath High School Senior project.

OTHER ADVISING

Provided advising to Food Alliance, Inc. on best management practices for pest management in hops, 2010.

Provided expert opinions to Salmon Safe, Inc. on reduced risk pest management tactics related to use of copper and carfentrazone-ethyl, 2010.

Scientific Committee of the 2nd ISHS International Humulus Symposium, Ghent, Belgium, 2008.

European and Mediterranean Plant Protection Organization, Member of expert working group to perform Pest Risk Analysis for *Xanthomonas axonopodis* pv. *allii* and *Iris yellow spot virus*, Paris, France, August 25-28, 2008

Provided consulting to New Zealand Ministry of Agriculture and Forestry on diagnostic procedures for *Podosphaera macularis* and *Pseudoperonospora humuli*, February 2008

Research Experience: Paul Breese (2007); 1 quarter; Junction City High School, Oregon
Project: Genetic and Pathogenic Characterization of *Verticillium albo-atrum* isolates. ARS Pacific West Area Teacher Research Fellowship Program.

Provided scientific leadership to the U.S. hop industry during preparation of Pest Management Strategic Plan, and assisted in coordinating meeting and recruiting work group members, 2007-2008.

Responded to greater than 155 requests for information on current and past research to growers, crop consultants, and other scientists since 2005.

C. SCHOLARSHIP AND CREATIVE ACTIVITY

1. MAJOR AREAS OF CURRENT RESEARCH

The overall objective of the research is to develop new knowledge and integrated pest management systems that minimize the impact of diseases and arthropod pests and enhance the economic and environmental sustainability of U.S. agriculture. The research is currently focused on management of the primary foliar diseases of hop, powdery mildew and downy mildew in the Pacific Northwestern U.S. The research is interdisciplinary and regional in scope, and includes collaborations with scientists in Oregon, Washington, and Idaho. Efforts are directed at developing non-chemical approaches (cultural practices) and predictive systems for these diseases that minimize purchased inputs. Systems approaches are utilized to develop disease control strategies that are compatible with conservation biological control of spider mites. A major thrust of the current research is to describe the epidemiology of powdery mildew on hop cones. This work includes development of a predictive system for disease development and characterization of juvenile susceptibility to optimize deployment of control measures.

2. PUBLICATIONS

Contributions to Publications When Not Sole Author

¹ **First author:** *Primary person responsible for conception and development of project, collection of data, implementation of analysis, writing, and preparation of manuscript. Most the work was conducted under my direction.*

² **Co-first author:** *Shared responsibility for conception and development of project, collection of data, implementation of analysis, writing, and preparation of manuscript. A substantial portion of the work was conducted under my direction.*

³ **Senior or corresponding author:** *Primary responsibility for conception and development of project, collection of data, implementation of analysis, writing, and preparation of manuscript. Most or all of the work was conducted by persons in my laboratory under my direction.*

⁴ **Secondary author with students in my laboratory in which advising was a major component:** *Substantial input on conception and development of a project, collection of data, implementation of analysis, writing, and preparation of manuscript.*

⁵ **Secondary author in collaboration with researchers in other laboratories in which advising was not a major component:** *Substantial contributions to conception and development of project, collection of data, implementation of analysis, writing, and/or preparation of a portion of a manuscript.*

⁶ **Senior editor:** *Primary person responsible for conception and development of project, editing, and coordination with authors.*

⁷ **Co-senior editor:** *Shared responsibility for conception and development of project, editing, and coordination with authors.*

* Graduate student

a. REFEREED JOURNAL ARTICLES

1. Turechek, W. W., Madden, L. V., **Gent, D. H.⁵**, and Xu, X.-M. 2011. Comments regarding the binary power law for heterogeneity of disease incidence. *Phytopathology*. *Accepted pending revision*.
2. Woods, J. L.*, James, D. G., Lee, J. C., and **Gent, D. H.³** 2011. Validation of methyl salicylate as a means to improve conservation biological control in Oregon hop yards. *Experimental and Applied Acarology*. *Accepted pending revision*.
3. Pfender, W. F., **Gent, D. H.⁵**, and Mahaffee, W. F. 2011. Sensitivity of disease management decision aids to temperature input errors associated with out-of-canopy and reduced time-resolution measurements. *Plant Disease*. *In press*.
4. Pethybridge, S. J., **Gent, D. H.⁵**, and Hay, F. S. 2011. Epidemics of ray blight on pyrethrum are linked to seed contamination and overwintering inoculum of *Phoma ligulicola* var. *inoxydabilis*. *Phytopathology*. *In press*.
5. Jones, S., **Gent, D. H.⁵**, Pethybridge, S. J., and Hay, F. 2011. Spatial characteristics of white mould epidemics and the development of sequential sampling plans in Australian bean fields. *Plant Pathology*. Doi: 10.1111/j.1365-3059.2011.02466.x
6. Jones, S., Pethybridge, S. J., **Gent, D. H.⁵**, and Hay, F. S. 2011. Sensitivity of Australian *Sclerotinia sclerotiorum* isolates from bean fields to boscalid. *Journal of Phytopathology*. Doi: 10.1080/01140671.2011.563425
7. **Gent, D. H.¹**, Farnsworth, J. L., and Johnson, D. A. 2011. Spatial analysis and incidence-density relationships for downy mildew on hop. *Plant Pathology*. Doi: 10.1111/j.1365-3059.2011.02491.x
8. Henning, J. A., Townsend, M. S., **Gent, D. H.⁵**, and Bassil, N. 2011. Map-based QTL markers associated with powdery mildew resistance in USDA 19058M hop (*Humulus lupulus* L.). *Euphytica*. 180:411-420
9. Mitchell, M. M., Ocamb, C. M., Grünwald, N. J., and **Gent, D. H.³** 2011. Genetic and pathogenic relatedness of *Pseudoperonospora cubensis* and *P. humuli*. *Phytopathology*. 101:805-818.
10. **Gent, D. H.¹**, De Wolf, E. D., and Pethybridge, S. J. 2011. Perceptions of risk, risk aversion, and barriers to adoption of decision support systems and IPM: An Introduction. *Phytopathology* 101:640-643.
11. Pfender, W. F., **Gent, D. H.⁵**, Mahaffee, W. F., Coop, L. B., and Fox, A. D. 2011. Decision aids for multiple-decision disease management as affected by weather input errors. *Phytopathology*. 101:644-653.
12. Pethybridge, S. J., Hay, F. S., and **Gent, D. H.⁵** 2010. Characterization of the spatiotemporal attributes of *Sclerotinia* flower blight epidemics in a perennial pyrethrum pathosystem. *Plant Disease* 94:1305-1313.
13. Schwartz, H. F., **Gent, D. H.⁵**, Fichtner, S. M., Khosla, R., Mahaffey, L. A., Camper, M. A., and Cranshaw, W. S. 2010. Spatial and temporal distribution of *Iris yellow spot virus* and thrips in Colorado onion fields. Online. *Plant Health Progress* doi:10.1094/PHP-2010-0820-01-RS.
14. **Gent, D. H.¹**, Ocamb, C. M., and Farnsworth, J. L. 2010. Forecasting and management of hop downy mildew. *Plant Disease* 94:425-431.
15. **Gent, D. H.¹**, Nelson, M. E., Farnsworth, J. L., and Grove, G.G. 2009. PCR detection of *Pseudoperonospora humuli* in air samples from hop yards. *Plant Pathology* 58:1081-1091.
16. **Gent, D. H.¹**, and Ocamb, C. M. 2009. Predicting infection risk of hop by *Pseudoperonospora humuli*. *Phytopathology* 99:1190-1198.
17. Schwartz, H. F., **Gent, D. H.⁵**, Fichtner, S. M., Hammon, R., Cranshaw, W. S., Mahaffey, L., Camper, M., Otto, K., and McMillan, M. 2009. Straw mulch and reduced-risk pesticide impacts on thrips and *Iris yellow spot virus* on western-grown onions. *Southwestern Entomologist* 34:13-29
18. **Gent, D. H.¹**, James, D. G., Wright, L. C., Barbour, J. D., Dreves, A. J., Fisher, G. C., and Walton, V. M. 2009. Effects of powdery mildew fungicide programs on twospotted spider mite (Acari: Tetranychidae), hop aphid (Homoptera: Aphididae), and their natural enemies in hop yards. *Journal of Economic Entomology* 102:274-286.

19. Pethybridge, S. J., **Gent, D. H.**⁵, Esker, P. D., Turechek, W. W., Hay, F. S., and Nutter, F. W., Jr. 2009. Site-specific risk factors for ray blight in Tasmanian pyrethrum fields. *Plant Disease* 93:229-237.
20. Peetz, A. B., Mahaffee, W. F., and **Gent, D. H.**⁵ 2009. Effect of temperature on sporulation and infectivity of *Podosphaera macularis* on *Humulus lupulus*. *Plant Disease* 93:281-286.
21. **Gent, D. H.**¹, Turechek, W. W., and Mahaffee, W. F. 2008. Spatial and temporal stability of the estimated parameters of the binary power law. *Phytopathology* 98:1107-1117.
22. Pethybridge, S. J., Hay, F. S., Esker, P. D., **Gent, D. H.**⁵, Wilson, C. R., and Nutter, F. W., Jr. 2008. Diseases of pyrethrum in Tasmania: Challenges and prospects for management. *Plant Disease* 92:1260-1272.
23. **Gent, D. H.**¹, Nelson, M. E., George, A. E., Grove, G. G., Mahaffee, W. F., Ocamb, C. M., Barbour, J. D., Peetz, A., and Turechek, W. W. 2008. A decade of hop powdery mildew in the pacific northwest. Online. *Plant Health Progress* doi:10.1094/PHP-2008-0314-01-RV.
24. **Gent, D. H.**¹, Nelson, M. E., and Grove, G. G. 2008. Persistence of phenylamide insensitivity in *Pseudoperonospora humuli*. *Plant Disease* 92:463-468.
25. Walton, V. M., Dreves, A. J., **Gent, D. H.**⁵, James, D. G., Martin, R. R., Chambers, U., and Skinkis, P. A. 2007. Relationship between rust mites *Calepitrimerus vitis* (Nalepa), bud mites *Colomerus vitis* (Pagenstecher) (Acari: Eriophyidae) and short shoot syndrome in Oregon vineyards. *International Journal of Acarology* 33:307-318.
26. **Gent, D. H.**¹, Turechek, W. W., and Mahaffee, W. F. 2007. Sequential sampling for estimation and classification of the incidence of hop powdery mildew I: Leaf sampling. *Plant Disease* 91:1002-1012.
27. **Gent, D. H.**¹, Turechek, W. W., and Mahaffee, W. F. 2007. Sequential sampling for estimation and classification of the incidence of hop powdery mildew II: Cone sampling. *Plant Disease* 91:1013-1020.
28. Lang, J. M., **Gent, D. H.**⁵, and Schwartz, H. F. 2007. Management of *Xanthomonas* leaf blight of onion with h-mutant bacteriophages and a plant activator. *Plant Disease* 91:871-878
29. **Gent, D. H.**¹, Martin, R. R., and Ocamb, C. M. 2007. First report of *Iris yellow spot virus* on onion and leek crops in western Oregon. *Plant Disease* 91:468.
30. **Gent, D. H.**¹, du Toit, L. J., Fichtner, S. F., Mohan, S. K., Pappu, H. R., and Schwartz, H. F. 2006. *Iris yellow spot virus*: An emerging threat to onion bulb and seed production. *Plant Disease* 90:1469-1480.
31. **Gent, D. H.**¹, Mahaffee, W. F., and Turechek, W. W. 2006. Spatial heterogeneity of the incidence of powdery mildew in hop cones. *Plant Disease* 90:1433-1440.
32. **Gent, D. H.**², and Schwartz, H. F. 2005. Effect of nitrogen fertilization and seed contamination on epiphytic populations of *Xanthomonas axonopodis* pv. *allii* and development of *Xanthomonas* leaf blight of onion. Online. *Plant Health Progress* doi:10.1094/PHP-2005-0331-01-RS.
33. **Gent, D. H.**², and Schwartz, H. F. 2005. Management of *Xanthomonas* leaf blight of onion with a plant activator, biological control agents, and copper bactericides. *Plant Disease* 89:631-639.
34. **Gent, D. H.**², Lang, J. M., and Schwartz, H. F., 2005. Epiphytic survival of *Xanthomonas axonopodis* pv. *allii* and *X. axonopodis* pv. *phaseoli* on onion and dry bean. *Plant Disease* 98:558-564.
35. **Gent, D. H.**², Lang, J. M., Bartolo, M. E., and Schwartz, H. F. 2005. Inoculum sources of *Xanthomonas axonopodis* pv. *allii* in Colorado. *Plant Disease* 89:507-514.
36. **Gent, D. H.**², Al-Saadi, A., Gabriel, D. W., Louws, F. J., Ishimaru, C. A., and Schwartz, H. F. 2005. Pathogenic and genetic relatedness among *Xanthomonas axonopodis* pv. *allii* and other pathovars of *X. axonopodis*. *Phytopathology* 95:918-925.
37. **Gent, D. H.**², Schwartz, H. F., and Khosla, R. 2004. Distribution and incidence of *Iris yellow spot virus* in Colorado and its relation to onion plant population and yield. *Plant Disease* 88:446-452.
38. **Gent, D. H.**², Schwartz, H. F., Ishimaru, C. A., Louws, F. J., Cramer, R. A., and Lawrence, C. B. 2004. Polyphasic characterization *Xanthomonas* strains from onion. *Phytopathology* 94:184-195.

39. **Gent, D. H.²**, Schwartz, H. F., and Nissen, S. J. 2003. Effect of commercial adjuvants on vegetable crop fungicide coverage, absorption, and efficacy. *Plant Disease* 87:591-597.
40. Schwartz, H. F., Otto, K. J., and **Gent, D. H.⁵** 2003. Relation of temperature and rainfall to development of *Xanthomonas* and *Pantoea* leaf blights of onion in Colorado. *Plant Disease* 87:11-14.
41. **Gent, D. H.²**, and Schwartz, H. F. 2003. Validation of potato early blight disease forecast models for Colorado using various sources of meteorological data. *Plant Disease* 87:78-84.
42. Schwartz, H. F., Brown, W. M., Blunt, T., and **Gent, D. H.⁵** 2002. *Iris yellow spot virus* on onion in Colorado. *Plant Disease* 85:838.

b. BOOKS AND BOOK CHAPTERS (peer reviewed)

1. **Gent, D. H.¹**, and Turechek, W. W. 2011. Evaluation of Disease Predictors by Receiver Operating Characteristic Curve Analysis. Submitted chapter for *Exercises in Plant Disease Epidemiology*, 2nd Edition. Stevenson, K. and Jeger, M. (eds.), APS Press, St. Paul, MN.
2. Turechek, W. W., and **Gent, D. H.⁵** 2011. Sequential Sampling for Disease Incidence. Submitted chapter for *Exercises in Plant Disease Epidemiology*, 2nd Edition. Stevenson, K. and Jeger, M. (eds.), APS Press, St. Paul, MN.
3. Mahaffee, W. F., Pethybridge, S. J., and **Gent, D. H.⁷** (eds.) 2009. *Compendium of Hop Diseases and Pests*, APS Press, St. Paul, MN.
4. Beatson, R. A., Kenny, S. T., Pethybridge, S. J., and **Gent, D. H.⁵** 2009. Hop production. Pages 5-8 in: Mahaffee, W. M., Pethybridge, S. J., and **Gent, D. H.** (eds.), *Compendium of Hop Diseases and Pests*, APS Press, St. Paul, MN.
5. Henning, J. A., Pethybridge, S. J., and **Gent, D. H.⁵** 2009. Hop Cultivars and Breeding. Pages 11-14 in: Mahaffee, W. M., Pethybridge, S. J., and **Gent, D. H.** (eds.), *Compendium of Hop Diseases and Pests*, APS Press, St. Paul, MN.
6. **Gent, D. H.** 2009. Alternaria Cone Disorder. Page 15 in: Mahaffee, W. M., Pethybridge, S. J., and **Gent, D. H.** (eds.), *Compendium of Hop Diseases and Pests*, APS Press, St. Paul, MN.
7. **Gent, D. H.** 2009. Armillaria Root Rot. Page 16 in: Mahaffee, W. M., Pethybridge, S. J., and **Gent, D. H.** (eds.), *Compendium of Hop Diseases and Pests*, APS Press, St. Paul, MN.
8. **Gent, D. H.** 2009. Ascochyta Leaf Spot. Page 16 in: Mahaffee, W. M., Pethybridge, S. J., and **Gent, D. H.** (eds.), *Compendium of Hop Diseases and Pests*, APS Press, St. Paul, MN.
9. Johnson, D. A., Engelhard, B., **Gent, D. H.⁵** 2009. Downy Mildew. Pages 18-22 in: Mahaffee, W. M., Pethybridge, S. J., and **Gent, D. H.** (eds.), *Compendium of Hop Diseases and Pests*, APS Press, St. Paul, MN.
10. Mahaffee, W. F., Engelhard, B., **Gent, D. H.⁵**, and Grove, G. G. 2009. Powdery Mildew. Pages 25-31 in: Mahaffee, W. M., Pethybridge, S. J., and **Gent, D. H.** (eds.), *Compendium of Hop Diseases and Pests*, APS Press, St. Paul, MN.
11. **Gent, D. H.** 2009. Septoria Leaf Spot. Page 32 in: Mahaffee, W. M., Pethybridge, S. J., and **Gent, D. H.** (eds.), *Compendium of Hop Diseases and Pests*, APS Press, St. Paul, MN.
12. **Gent, D. H.** 2009. Sclerotinia Wilt. Pages 32-33 in: Mahaffee, W. M., Pethybridge, S. J., and **Gent, D. H.** (eds.), *Compendium of Hop Diseases and Pests*, APS Press, St. Paul, MN.
13. **Gent, D. H.** 2009. Sooty Mold. Page 33 in: Mahaffee, W. M., Pethybridge, S. J., and **Gent, D. H.** (eds.), *Compendium of Hop Diseases and Pests*, APS Press, St. Paul, MN.
14. **Gent, D. H.** 2009. Sclerotinia Wilt. Pages 32-33 in: Mahaffee, W. M., Pethybridge, S. J., and **Gent, D. H.** (eds.), *Compendium of Hop Diseases and Pests*, APS Press, St. Paul, MN.
15. **Gent, D. H.¹** and Radisek, S. 2009. Fungal Diseases and Pathogens of Minor Importance. Pages 36-38 in: Mahaffee, W. M., Pethybridge, S. J., and **Gent, D. H.** (eds.), *Compendium of Hop Diseases and Pests*, APS Press, St. Paul, MN.
16. **Gent, D. H.¹** and Bull, C. T. 2009. Crinkle Disease. Pages 54-55 in: Mahaffee, W. M., Pethybridge, S. J., and **Gent, D. H.** (eds.), *Compendium of Hop Diseases and Pests*, APS Press, St. Paul, MN.
17. **Gent, D. H.¹** and Bull, C. T. 2009. Crown Gall. Pages 55-56 in: Mahaffee, W. M., Pethybridge, S. J., and **Gent, D. H.** (eds.), *Compendium of Hop Diseases and Pests*, APS Press, St. Paul, MN.

18. **Gent, D. H.**¹ and Bull, C. T. 2009. Bacterial Diseases of Minor Importance. Pages 56-57 in: Mahaffee, W. M., Pethybridge, S. J., and **Gent, D. H.** (eds.), Compendium of Hop Diseases and Pests, APS Press, St. Paul, MN.
19. Solarska, E., Sliwa, H., Gudzinska-Sterno, M., Kaminska, M., and **Gent, D. H.**⁵ 2009. Hop Shoot Proliferation. Pages 57-58 in: Mahaffee, W. M., Pethybridge, S. J., and **Gent, D. H.** (eds.), Compendium of Hop Diseases and Pests, APS Press, St. Paul, MN.
20. Mahaffee, W.F., Pethybridge, S. J., and **Gent, D. H.**⁵ 2009. Nutrient Imbalances. Pages 75-77 in: Mahaffee, W. M., Pethybridge, S. J., and **Gent, D. H.** (eds.), Compendium of Hop Diseases and Pests, APS Press, St. Paul, MN.
21. Mahaffee, W.F., Pethybridge, S. J., and **Gent, D. H.**⁵ 2009. Injuries Caused by Environmental Factors. Pages 77-78 in: Mahaffee, W. M., Pethybridge, S. J., and **Gent, D. H.** (eds.), Compendium of Hop Diseases and Pests, APS Press, St. Paul, MN.
22. **Gent, D. H.**¹, Pethybridge, S. J., and Mahaffee, W. F. 2009. Chemical Injury. Pages 78-80 in: Mahaffee, W. M., Pethybridge, S. J., and **Gent, D. H.** (eds.), Compendium of Hop Diseases and Pests, APS Press, St. Paul, MN.
23. **Gent, D. H.**², and Schwartz, H. F. 2008. Xanthomonas leaf blight. Pages 56-58 in: Schwartz, H. F. and Mohan, S. K., (eds.), Compendium of Onion and Garlic Diseases and Pests, APS Press, St. Paul, MN.
24. **Gent, D. H.**², and Schwartz, H. F. 2008. Leaf streak and bulb rot. Pages 58-59 in: Schwartz, H. F. and Mohan, S. K., (eds.), Compendium of Onion and Garlic Diseases and Pests, APS Press, St. Paul, MN.
25. **Gent, D. H.**², and Schwartz, H. F. 2008. Center rot. Pages 64-66 in: Schwartz, H. F. and Mohan, S. K., (eds.), Compendium of Onion and Garlic Diseases and Pests, APS Press, St. Paul, MN.
26. **Gent, D. H.**², and Schwartz, H. F. 2008. Bacterial stalk and leaf necrosis. Pages 66-67 in: Schwartz, H. F. and Mohan, S. K., (eds.), Compendium of Onion and Garlic Diseases and Pests, APS Press, St. Paul, MN.
27. **Gent, D. H.** 2008. Enterobacter bulb decay. Pages 67-68 in: Schwartz, H. F. and Mohan, S. K., (eds.), Compendium of Onion and Garlic Diseases and Pests, APS Press, St. Paul, MN.
28. **Gent, D. H.**², and Schwartz, H. F. 2008. *Iris yellow spot virus*. In Schwartz, H. F. and Mohan, S. K., (eds.), Compendium of Onion and Garlic Diseases and Pests, APS Press, St. Paul, MN.

c. EXTENSION PUBLICATIONS (peer reviewed)

1. **Gent, D. H.**⁶, Barbour, J. D., Dreves, A. J., James, D. G., Parker, R., and Walsh, D. B. (eds) 2009. Field Guide for Integrated Pest Management in Hops: Pocket Version. Core Communications, Corvallis, OR. I authored most of the disease management sections in this publication.
2. **Gent, D. H.**⁶, Barbour, J. D., Dreves, A. J., James, D. G., Parker, R., and Walsh, D. B. (eds) 2009. Field Guide for Integrated Pest Management in Hops. Washington State University Extension Bulletin. Washington State University, Pullman, WA. I authored most of the disease management sections in this publication.
3. Schwartz, H., and **Gent, D.**² 2005. Xanthomonas Leaf Blight. Colorado State University Cooperative Extension Publication no. 2.951, Fort Collins, CO.

d. TECHNICAL REPORTS (peer reviewed)

1. Lang, J. M., **Gent, D. H.**⁵, and Schwartz, H. F. 2004. Differential response of onion cultivars to onion Xanthomonas leaf blight. Allium Improvement Newsletter 14:15-17.
2. **Gent, D. H.**², McMillian, M. S., and Schwartz, H. F. 2005. Evaluation of potato early blight control using various forecasting systems operated with regional weather data, 2002 and 2003. Fungicide and Nematicide Tests 60:V062.
3. **Gent, D. H.**², Fitchner, S., and Schwartz, H. F. 2002. Evaluation of AgBio 222 in managing major foliar diseases of potato in northeastern Colorado, 2001. Fungicide and Nematicide Tests 57:V137.

4. **Gent, D. H.²**, Fitchner, S., and Schwartz, H. F. 2002. Evaluation of fungicide spray intervals for management of early blight of potato in northeastern Colorado, 2001. *Fungicide and Nematicide Tests* 57:V138.
5. **Gent, D. H.²**, Fitchner, S., and Schwartz, H. F. 2002. Evaluation of fungicides for dry bean rust, 2001. *Fungicide and Nematicide Test* 57:FC02.
6. McMillan, M.S., **Gent, D.H.⁵**, and Schwartz, H.F. 2000. Fungicide screening for early blight control in potato, 2000. *Fungicide and Nematicide Tests* 56:V46.

e. EXTENSION PUBLICATIONS (non-peer reviewed)

1. Ocamb, C. M., and **Gent, D. H.⁵** 2006. Hop Diseases (selected diseases). In: Pscheidt, J. W., and C. M. Ocamb (eds), *Pacific Northwest Plant Disease Management Handbook*. Oregon State Extension Service. 593 pp.
2. Ocamb, C. M., and **Gent, D. H.⁵** 2006. Bean Diseases (selected diseases). In: Pscheidt, J. W., and C. M. Ocamb (eds), *Pacific Northwest Plant Disease Management Handbook*. Oregon State Extension Service. 593 pp.
3. Ocamb, C. M., and **Gent, D. H.⁵** 2006. Onion Diseases (selected diseases). In: Pscheidt, J. W., and C. M. Ocamb (eds), *Pacific Northwest Plant Disease Management Handbook*. Oregon State Extension Service. 593 pp.
4. Ocamb, C. M., and **Gent, D. H.⁵** 2006. Tomato Diseases (selected diseases). In: Pscheidt, J. W., and C. M. Ocamb (eds), *Pacific Northwest Plant Disease Management Handbook*. Oregon State Extension Service. 593 pp.
5. Schwartz, H. F. and **Gent, D. H.²** 2005. High Plains Integrated Pest Management Guide for Colorado-Western Nebraska-Wyoming-Montana. Online at <http://highplainsipm.org/>. (I developed numerous disease sections.)
6. Vegetable Pathology Results, 2004. Colorado State University Cooperative Extension Publication, Fort Collins, CO.⁵
7. Vegetable Pathology Results, 2003. Colorado State University Cooperative Extension Publication, Fort Collins, CO.⁵
8. Vegetable Pathology Results, 2002. Colorado State University Cooperative Extension Publication, Fort Collins, CO.⁵
9. Vegetable Pathology Results, 2001. Colorado State University Cooperative Extension Publication, Fort Collins, CO.⁵
10. Vegetable Pathology Results, 2000. Colorado State University Cooperative Extension Publication, Fort Collins, CO.⁵

f. TECHNICAL REPORTS (non-peer reviewed)

1. Schwartz, H. F., and **Gent, D. H.⁵** 2004. Disease forecast modeling of *Uromyces appendiculatus* in the High Plains bean production region. *Annual Report of the Bean Improvement Cooperative* 47:109-110.
2. **Gent, D. H.²**, and Schwartz, H. F. 2002. Effect of adjuvants on coverage, absorption, and efficacy of bean fungicides. *Annual Report of the Bean Improvement Cooperative* 45:92.
3. Otto, K., Schwartz, H. F., Wickliff, E. R., and **Gent, D. H.⁵** 2002. Development of an inoculum production method for *Sclerotinia sclerotiorum*. *Annual Report of the Bean Improvement Cooperative* 45:66.

g. TRADE JOURNAL PUBLICATIONS (non-peer reviewed)

1. Schwartz, H., **Gent, D.⁵**, and Fichtner, S. 2005. More on Iris Yellow Spot. *Onion World*, December:6-9. (invited).
2. Schwartz, H., and **Gent, D.⁵** 2005. An Update on Xanthomonas Leaf Blight. *Onion World*, December:26-28.

3. Schwartz, H. F., Brown, W. M., Blunt, T., and **Gent, D. H.**⁵ 2001. *Iris yellow spot virus* attacks western onions in 2001. *Onion World*, December:14.

h. ABSTRACTS OF PAPERS PRESENTED AT PROFESSIONAL MEETINGS

1. Pethybridge, S. J., **Gent, D.**⁵, and Hay, F. S. 2011. Effects of seedborne and overwintering inoculums on ray blight severity in pyrethrum. *Phytopathology* 101:S141.
2. **Gent, D. H.**¹, Nelson, M. E., and Grove, G. G. 2010. Risk factors and modeling of powdery mildew occurrence on hop cones. *Phytopathology* 100:S40.
3. Farnsworth, J. L.*², Nelson, M. E., Grove, G. G., and **Gent, D. H.**³ 2010. Ontogenic resistance to powdery mildew in hop cones: Implications for disease management. *Phytopathology* 100:S138.
*Graduate student in my lab
4. Mitchell, M. N.*², and **Gent, D. H.**³ 2010. Addressing the relationship between *Pseudoperonospora cubensis* and *P. humuli* using multigenic and host specificity assays. *Phytopathology* 100:S84.
*Graduate student in my lab
5. Woods, J. L.*², James, D. G., Lee, J. C., and **Gent, D. H.**³ 2010. Validation of methyl salicylate as a means to improve conservation biological control in Oregon hop yards. Pacific Branch Entomological Society of America's 2010 meeting, Boise, Idaho. April 11-14. *Graduate student in my lab
6. Coop, L., Fox, A., Mahaffee, W., **Gent, D.**⁵, Pfender, W., Thomas, C., and Jepson, P. 2009. Forecast and virtual weather driven plant disease risk modeling system. *Phytopathology* 99:S24.
7. Farnsworth, J. L.*², Nelson, M. E., Grove, G. G., and **Gent, D. H.**³ 2009. PCR detection of *Pseudoperonospora humuli* in air samples from hop yards. *Phytopathology* 99:S33.
8. **Gent, D. H.**¹, Farnsworth, J. L., and Ocamb, C. M. 2009. Forecasting and management of hop downy mildew. *Phytopathology* 99:S42.
9. Liu, Q., Harbertson, E., Nelson, M. E., Grove, G. G., Chilvers, M. I., and **Gent, D. H.**⁵ 2009. Development of quantitative PCR assays for *Podosphaera macularis* and *Podosphaera clandestina*, the causal agents of hop and cherry powdery mildew. *Phytopathology* 99:S75.
10. Pfender, W. F., **Gent, D. H.**⁵, Thomas, C., Mahaffee, W. F., Coop, L. B., and Fox, A. 2009. The challenge of assessing uncertainty and risk in weather-based decision support tools. *Phytopathology* 99:S174.
11. Pethybridge, S., Hay, F., **Gent, D.**⁵, Esker, P., Nutter, F., Jr., Wilson, C., and Groom, T. 2009. Development of management strategies for ray blight of pyrethrum: A case study of successful diffusion. *Phytopathology* 99:S174.
12. Hummer, K., **Gent, D.**⁵, Henning J., Mahaffee, W., and Ocamb, C. 2009. Powdery mildew resistant hop germplasm release: 'Kazak 2000'. Page 59 in: Abstract Book of the 2nd ISHS International Humulus Symposium.
13. Schwartz, H. F., **Gent, D. H.**⁵, Fichtner, S. M., Cranshaw, W. S., Mahaffey, L., Camper, M., Otto, K., and McMillan, M. 2008. Management of onion thrips and IYSV with straw mulch and biopesticides. Proc. 2008 National Allium Res. Conf., Savannah, Georgia, Dec. 10-13, 2008.
14. Schwartz, H. F., Fichtner, S. M., **Gent, D. H.**⁵, Khosla, R., Inman, D. J., Cranshaw, W. S., Camper, M. A., and Mahaffey, L. A. 2008. Spatial and temporal distribution of thrips and IYSV of onion in Colorado. Proc. 2008 National Allium Res. Conf., Savannah, Georgia, Dec. 10-13, 2008.
15. **Gent, D. H.**¹ 2008. Next Steps on the Horizon for Weather and Climate-Based Decision Support Systems. APS Pacific Division Meeting, Jackson Hole, Wyoming, June 25.
16. **Gent, D. H.**¹, Nelson, M. E., and Grove, G. G. 2007. Persistence of metalaxyl insensitivity in *Pseudoperonospora humuli*. *Phytopathology* 97:S40.
17. Pfender, W., Mahaffee, W., Coop, L., Fox, A., Daly, C., Thomas, C., Gubler, W., Grove, G., **Gent, D.**⁵, Strand, J., Taylor, G., Jepson, P., and Graw, R. 2007. Western Weather Systems Workgroup: A collaborative effort to improve weather information for IPM. *Phytopathology* 97:S92.
18. **Gent, D. H.**¹, Mahaffee, W. F., and Turechek, W. W. 2006. Spatial heterogeneity and sampling of hop powdery mildew in cones. *Phytopathology* 96:S39.

19. **Gent, D. H.¹**, du Toit, L. J., Mohan, S. K., Pappu, H. R., and Schwartz, H. F. 2006. Emergence of *Iris yellow spot virus* in the western U.S. *Phytopathology*.
20. Peetz, A., Mahaffee, W. F., Turechek, W. W., Thomas, C. S., Nelson, M., Ocamb, C. M., **Gent, D. H.¹**, and Grove, G. G. 2006. Hop powdery mildew in the Pacific Northwest. *Phytopathology*.
21. **Gent, D. H.²**, Schwartz, H. F., Lang, J. M., and Ishimaru, C. A. 2004. Xanthomonas leaf blight of onion: biology, epidemiology, and management. Proc. 2004 National Allium Res. Conf., Grand Junction, Colorado, Dec. 8-10, 2004. pp. 153-162.
22. **Gent, D. H.²**, and Schwartz, H. F. 2004. Inoculum sources of *Xanthomonas axonopodis* pv. *allii* in Colorado. *Phytopathology* 94:S33.
23. **Gent, D. H.²**, and Schwartz, H. F. 2004. Managing *Iris yellow spot virus* of onion with cultural practices, host genotype, and novel chemical treatments. *Phytopathology* 94:S34.
24. **Gent, D. H.²**, and Schwartz, H. F. 2004. Managing Xanthomonas leaf blight of onion with copper bactericides and acibenzolar. *Phytopathology* 94:S34.
25. Lang, J. M., **Gent, D. H.⁵**, and Schwartz, H. F. 2004. Alternative strategies for onion Xanthomonas leaf blight management. *Phytopathology* 94:S57.
26. **Gent, D. H.²**, Schwartz, H. F., and Ishimaru, C. A. 2003. Population dynamics of *Xanthomonas campestris* pv. *allii* on leaves of pulse crops and weeds. *Phytopathology* 93:S29.
27. **Gent, D. H.²**, and Schwartz, H. F. 2003. Screening of onion germplasm for resistance to Xanthomonas leaf blight. *Phytopathology* 93:S29.
28. **Gent, D. H.²**, and Schwartz, H.F. 2001. Effects of adjuvant chemistry on coverage, absorption, and efficacy of fungicides. *Phytopathology* 91:S31.

i. NON-PEER REVIEWED PROCEEDINGS

1. Woods, J. L.*, Dreves, A. J., Fisher, G. C., James, D. G., and **Gent, D. H.³** 2010. Effect of fungicide timing on two-spotted spider mite and hop aphid management in hops. Proceedings of the Pacific Northwest Insect Management Conference, January 13-14 2010, Portland, Oregon. *Graduate student in my lab
2. **Gent, D. H.¹**, Nelson, M. E., Farnsworth, J. L., Ocamb, C. M., and Grove, G. G. 2009. Systems approaches to management of hop downy mildew. Proc. Scientific Commission of the International Hop Growers Convention. June 21-25 2009, Leon, Spain.
3. James, D., **Gent, D.²**, and Prischmann, D. 2008. The impact of sulfur on spider mite and predatory mite populations on grapes and hops in the Pacific Northwest of the United States. XXIII International Congress of Entomology, July 7-July 12, 2008, Durban, South Africa.
4. Pethybridge, S. J., Mahaffee, W., and **Gent, D.²** 2007. The compendium of hop diseases, arthropod pests and other disorders. Proc. Int. Hop Growers Sci. Comm. Meeting, Tettngang, Germany, 24 - 28 June 2007. ISSN 1814-2192, Page 116.
5. Fichtner, S. M., **Gent, D. H.⁵**, Schwartz, H. F., Cranshaw, W. S., Mahaffey, L., and Khosla, R. 2004. Geospatial relationships of *Iris yellow spot virus* and thrips to onion production in Colorado. Proc. 2004 National Allium Res. Conf., Grand Junction, Colorado, Dec. 8-10, 2004. pp. 149-151.
6. Lang, J. M., Schwartz, H. F., and **Gent, D. H.⁵** 2004. Alternative strategies for managing onion Xanthomonas leaf blight. Proc. 2004 National Allium Res. Conf., Grand Junction, Colorado, Dec. 8-10, 2004.
7. Oman, C., **Gent, D. H.⁵**, Fichtner, S.M, and Schwartz, H. F. 2004. Distribution of *Iris yellow spot virus* in weeds and onion transplants in Colorado. Proc. 2004 National Allium Res. Conf., Grand Junction, Colorado, Dec. 8-10, 2004.
8. Schwartz, H. F., **Gent, D. H.⁵**, Fichtner, Hammon, R. W., and Khosla. 2004. Integrated management of *Iris yellow spot virus* in onion. Proc. 2004 National Allium Res. Conf., Grand Junction, Colorado, Dec. 8-10, 2004. pp. 207-212.

9. **Gent, D. H.¹**, Stushnoff, C., and Schwartz, H. F. 2002. Thermal and UV tolerance of onion seed: Implications for bacterial disease management. Proc. Of the 2002 National *Allium* Research Conference, Dec. 11- 14, 2002, Pasco, WA.
10. **Gent, D. H.¹**, Schwartz, H. F., Ishimaru, C. A., Cramer, R. A., and Lawrence, C. B. 2002. Polyphasic characterization of *Xanthomonas campestris* from onion. Proc. of the 2002 National *Allium* Research Conference, Dec. 11- 14, 2002, Pasco, WA.
11. **Gent, D. H.¹**, and Schwartz, H. F. 2002. Epidemiology of *Xanthomonas* leaf blight in relation to the critical period for bactericide applications Proc. of the 2002 National *Allium* Research Conference, Dec. 11- 14, 2002, Pasco, WA.

3. PROFESSIONAL MEETINGS AND SEMINARS

a. INTERNATIONAL AUDIENCES

1. **Gent, D. H.** 2010. Ontogenic Resistance: A Key Aspect in Managing Powdery Mildew on Hop Cones. Tasmanian Institute of Agricultural Research, University of Tasmania, Burnie, Australia.
2. **Gent, D. H.** 2009. Systems Approaches to Management of Hop Downy Mildew. Scientific Commission of the International Hop Growers Convention, Leon, Spain.
3. **Gent, D. H.** 2007. U.S. Hop Production and Pest Management. Tasmanian Institute of Agricultural Research, University of Tasmania, Burnie, Australia.
4. **Gent, D. H.** 2007. *Iris yellow spot virus*: Biology and Management, Botanical Resources Australia Pty. Ltd., Ulverstone, Australia.

b. NATIONAL AUDIENCES

1. **Gent, D. H.** 2010. Biology and management of hop diseases and pests. Great Lakes Fruit and Vegetable Expo, December 8, Grand Rapids, MI.
2. **Gent, D. H.** 2010. Systems approaches for managing priority disease issues affecting the U.S. hop industry. USDA-ARS Leadership Conference, August 23-26, Meridian, ID.
3. **Gent, D. H.**, George, A., Frketch, N. 2010. Hop production and IPM. U.S. EPA, February 18, Arlington, VA.
4. Woods, J. L.*, and **Gent, D. H.** 2009. Diseases and pests of hop: identification and management. Michigan State University Sustainable Hops Production Workshop, October 2, Traverse City, Michigan. *Graduate student in my lab
5. **Gent, D. H.**, Mitchell, M. N., and Holmes, G. J. 2009. Genetic and pathogenic relatedness of *Pseudoperonospora cubensis* and *P. humuli*: Implications for detection and management. 2009 APS Annual Meeting, July 31-August 5, Portland, Oregon.
6. **Gent, D. H.**, and Schwartz, H. F. 2004. *Iris yellow spot virus*: Biology, Epidemiology, and Management. 2004 National Onion Association Annual Meeting, July 22, Denver, Colorado.

c. DEPARTMENTAL SEMINARS

1. *Pseudoperonospora humuli*: Biology and Management of a Systemic Downy Mildew, Department of Botany and Plant Pathology, Oregon State University, 3 June, 2010.
2. Weather, Climate, and Systems Approaches to Multi-Scale Plant Disease Risk Assessment, Department of Plant Pathology, UC Davis, 26 January 2009.

4. GRANTS AND CONTRACT SUPPORT

a. RESEARCH GRANTS

1. Grove, G. G., and **Gent, D. H.** Washington State Department of Agriculture, 2011. Improved management of hop powdery mildew to preserve the economic viability of the U.S. hop industry. \$250,000 (3 years).
2. **Gent, D. H.** Washington State Commission on Pesticide Registration, 2010. Identification of the critical period for management of powdery mildew cone browning. \$21,171 (1 year)

3. Walsh, D. B., Marsh, T., Sherman, J., and **Gent, D. H.** Western Region IPM, 2010. IPM adoption: motivations, barriers, and subjective risk assessments in contract agriculture. \$179,168 (3 years; Led efforts to develop objectives and wrote the proposal. Co-managed and assisted in implementation of focus groups and elicitation surveys; lead field experiments and extension components)
4. Coop, L., Daly, C., Fox, A., **Gent, D.**, Gubler, W., Jepson, P., Johnson, D., Lybbert, T., Mahaffee, W., and Pfender, W. Agriculture and Food Research Initiative, 2010. Automated mesoscale pest risk forecast maps for agricultural production and potential plant biosecurity threats. \$996,112 (3 years; Contributed to field plot design and analysis procedures; co-managed technician)
5. **Gent, D. H.** Hop Research Council, 2010. Forecasting and managing powdery mildew on cones. \$41,397 (1 year)
6. Hay, F., Pethybridge, S. J., and **Gent, D. H.** Australia Research Council, 2009. Meeting the challenges of Sclerotinia crown rot in a perennial production system-pyrethrum. \$366,000 (3 years; Co-conceived project objectives and experimental design. Led disease modeling components.)
7. Oregon Hop Commission, and **Gent, D. H.** Oregon Department of Agriculture, 2009. Marketing IPM and sustainable production: developing and accessing value-added markets for Pacific Northwest hops. \$83,750 (2 years; Conceived and wrote grant. Managed \$48,000 OSU subcontract and graduate student for technical aspects of project.)
8. Walsh, D. B., Barbour, J., Boydston, R., **Gent, D. H.**, Parker, R., Grove, G., Peters, R. T., Ringer, K., Ross, C. F., Gallardo, K., Marsh, T., Sherman, J., O'Neal, S., and Waters, T. CSREES Specialty Crops Research Initiative, 2009. Agronomic, biochemical, social, and economic impacts of biotic and abiotic stress on Pacific Northwest flavor crops. \$1,182,721 (3 years; Contributed to defining project objectives for pathology components. Managed \$110,000 OSU subcontract.)
9. **Gent, D. H.** Oregon Hop Commission, 2009. Managing downy mildew and powdery mildew with delayed spring pruning. \$10,000 (1 year)
10. Coop, L. B., **Gent, D. H.**, Grove, G. G., Jepson, P. A. Western Region IPM, 2009. IPM disease risk forecasts and virtual weather for western states. \$179,277 (2 years; Led efforts to develop objectives and wrote the proposal. Managed field and extension components and \$24,000 of budget for these activities.)
11. **Gent, D. H.** Hop Research Council, 2009. Pre-harvest detection and quantification of powdery mildew in cones. \$41,701 (1 year)
12. **Gent, D. H.** Washington State Commission on Pesticide Registration, 2009. Identification of the critical period for management of powdery mildew cone browning. \$16,999 (1 year)
13. George, A., **Gent, D. H.**, Barbour, J. D., Dreves, A. J., James, D. G., Parker, R., and Walsh, D. EPA Pesticide Environmental Stewardship Program, 2008. Pacific Northwest IPM Handbook for Hops: A public-private partnership for IPM education and training. \$50,310 (2 years; Led efforts to develop objectives and wrote the proposal. Provided overall project management. Managed \$26,000 of budget for survey and publication components of project.)
14. **Gent, D. H.** Agricultural Research Foundation, 2008. Genetic and pathogenic diversity of downy mildew pathogens on hops and cucurbits. \$12,100 (1 year)
15. **Gent, D. H.** Agricultural Research Foundation, 2008. Managing hop downy mildew and powdery mildew with delayed spring pruning. \$12,482 (1 year)
16. **Gent, D. H.** Oregon Hop Commission, 2008. Managing downy mildew and powdery mildew with delayed spring pruning. \$6,000 (1 year)
17. **Gent, D. H.** Washington State Commission on Pesticide Registration, 2008. Predicting and managing cone infection by hop powdery mildew. \$18,000 (1 year)
18. **Gent, D. H.** Washington State Commission on Pesticide Registration, 2008. IPM tactics to enhance biological control of spider mites on hops. \$11,391 (1 year)
19. Fisher, G. C., Walton, V. M., Dreves, A. J., **Gent, D. H.**, and James, D. G. Western Region IPM, 2007. Integrated management of mite pests and powdery mildew diseases on perennial hosts. \$158,900 (3 years; Led efforts to develop objectives and wrote the proposal. Managed field and

extension components related to hop, and provided input on other aspects of project. Co-managed \$114,000 portion of OSU budget for these activities.)

20. **Gent, D. H.** Washington State Commission on Pesticide Registration, 2007. Detection, diagnosis, and management of hop downy mildew. \$14,033 (1 year)
21. Ocomb, C. M., and **Gent, D. H.** Western Region IPM, 2005. Reduced fungicide use for management of hop downy mildew. \$40,000 (3 years; Led efforts to develop objectives and wrote the proposal. Provided overall project management. Managed entire budget.)
22. **Gent, D. H.** Agricultural Research Foundation, 2005. Molecular detection of the hop downy mildew pathogen. \$10,000 (1 year)
23. **Gent, D. H.** Washington State Commission on Pesticide Registration, 2005. Integrated management of hop diseases and pests. \$10,000 (1 year)
24. Schwartz, H. F., and **Gent, D. H.** Western Region IPM, 2003. Seed transmission and ecology of *Xanthomonas campestris* of onion. \$53,176 (2 years; As a graduate student, led efforts to develop objectives and wrote the proposal. Provided overall project management or co-management of technical components.)
25. Schwartz, H. F., Ishimaru, C. A., Khosla, R., Franc, G., and **Gent, D. H.** USDA CAR, 2002. Integrated management of *Xanthomonas* leaf blight of onion by cultural practices, disease forecasting, and biologically-based pesticides. \$440,741 (3 years; As a graduate student, led efforts to develop objectives and wrote the proposal. Provided overall project management or co-management of technical components.)
26. Schwartz, H. F., and **Gent, D. H.** South Platte Farms/Colorado Onion Association, 2002. The effect of irrigation method and crop rotation on bacterial and fungal disease development in onion. \$3,000 (1 year; As a graduate student, led efforts to develop objectives and wrote the proposal. Provided overall project management of technical components.)

b. OUTREACH GRANTS

1. **Gent, D. H.** USDA-ARS Pacific West Area Summer Teacher Research Fellowship Program, 2007. \$2,500 (1 year)
2. **Gent, D. H.** Oregon Hop Commission, 2007. Apprenticeships in Science and Engineering sponsorship. \$2,700 (1 year)
3. **Gent, D. H.** USDA-ARS Pacific West Area Summer Student Intern Program, 2005. \$2,500 (1 year)

5. PATENTS, CULTIVAR RELEASES, AND INVENTIONS

1. Smith, J. A.*, **Gent, D. H.**², Henning, J. A., Mahaffee, W. F., Ocamb, C. M., and Hummer, K. E. 2009. Notice of release of powdery mildew resistant *Humulus lupulus* var. *lupulus* germplasm accession 'Kazak 2000'. USDA-ARS Germplasm Release.
2. Henning, J. A., Townsend, M. S., **Gent, D. H.**⁵, Kenny, S., and Haunold, A. 2009. Notice of release of aroma hop variety, 'Mt. Rainer', Germplasm Release. USDA-ARS Variety Release Notice. US Government Publication.
3. Henning, J. A., Haunold, A., Townsend, M. S., **Gent, D. H.**⁵, and Parker, T. P. 2008. Registration of 'Teamaker' hop. *Journal of Plant Registrations* 2:13–14.

D. SERVICE

1. USDA AGRICULTURAL RESEARCH SERVICE

USDA-ARS Corvallis Location Equal Employment Opportunity and Outreach Committee, 2007 to present
USDA-ARS HCRU selection committee for a Research Plant Pathologist, 2007

2. UNIVERSITY--

Department of Botany and Plant Pathology

Curriculum Committee, 2010-present
Awards Committee, 2010
Graduate Studies Committee, 2008-2010
Seminar series coordination, Winter 2007

3. PROFESSION

a. PROFESSIONAL SOCIETIES

2011 Served as judge for APS Annual Meeting 11th I. E. Melhus Graduate Student Symposium: "Today's Students Making a Difference in the Field of Plant Disease Epidemiology and Disease Management."
2010 to present APS Nominations Committee
2009 Organized APS Annual Meeting Symposium 'Perceptions of Risk, Risk Aversion, and Barriers to Adoption of Decision Support Systems and IPM'
2009 Co-organized APS Annual Meeting Symposium 'Cucurbit Downy Mildew: Re-emergence of a Historical Disease'
2009 Co-organized APS Annual Meeting 9th I. E. Melhus Graduate Student Symposium: 'Integrating Pre- and Postharvest Views of Yield and Quality Loss'
2008 to 2009 chair APS Crop Loss Assessment and Risk Evaluation Committee
2008 to present, member APS Integrated Plant Disease Management Committee
2008 Coordinated judging of student paper competition at APS Pacific Division Meeting.
2007 to 2008 vice-chair APS Crop Loss Assessment and Risk Evaluation Committee
2006 to present, member APS Epidemiology Committee
2001 to present, American Phytopathological Society
1996 to 1999 Soil Science Society of America

b. PANELS, REVIEW AND PLANNING TEAMS

Provided requested interval review of USDA-ARS CRIS plan of work, 2011
Provided post-project review of a USDA Risk Management Agency grant project, 2009
Provided external review of a proposal for the International Marketing Program for Agricultural Commodities and Trade Center, Washington State University, 2006
Reviewed project plan for USDA-CSREES CRIS plan of work, 2006

c. EDITORSHIPS

Associate Editor Plant Disease, 2011-2013
Senior Editor Phytopathology, 2009-2011
Associate Editor Asian Journal of Plant Pathology, 2006-2008
Associate Editor International Journal of Agricultural Research, 2006-2008

d. MANUSCRIPT REVIEWS (as ad hoc reviewer; year - # manuscripts reviewed)

Functional Plant Biology 2008-1
Fungicide and Nematicide Tests 2006-3; 2005 - 2
Hort. Technology 2007-1
International Journal of Pest Management 2008-1
Journal of Phytopathology 2007-1; 2006-1; 2005 - 3
Journal of the American Society of Horticultural Science 2006-1
Mycopathologia 2010-2
New Zealand Journal of Crop and Horticultural Science 2007-1
Phytopathology 2010-3; 2008-2; 2007-1; 2006- 4
Plant Disease 2010-6; 2009-6; 2008-5; 2007-8; 2006-1; 2005 - 2
Plant Health Progress 2010-1; 2009-2; 2008-1;
Plant Pathology 2009-1; 2008-2

4. SERVICE TO PUBLIC (professionally related)

Community service

Interviewer for Wilson Elementary School Art and Science Fair, 10 March 2010, 10 March 2009, 11 March 2008, Corvallis, Oregon

Presentations

Presented on microbes, infection, and disease spread to first grade class at Harrisburg Elementary School, 7 April 2011, Harrisburg, Oregon.

Breakout session presentations on agricultural biotechnology and environmental research, Confederated Tribes of the Grand Ronde College and Career Fair, 6 May 2009, 9 April 2008, and 25 April 2007, Grand Ronde, Oregon. Grand Ronde, Oregon.

Presented "Careers with USDA-ARS," Confederated Tribes of the Grand Ronde College and Career Fair, 6 May 2009, 9 April 2008, 25 April 2007, and April 2006, Grand Ronde, Oregon.

"Biotechnology in Agriculture: A Case Study with a Plant Pathogen." Oregon State University Science Education PartnershipS (SEPS) Molecular Biology Workshop for high school teachers, 23 June 2008, Corvallis, Oregon

"USDA-ARS Teacher Research Fellowships," Junction City School District 69 School Board Meeting, 28 April 2008, Junction City, Oregon.

"PCR and Biotechnology," Junction City-Harrisburg area homeschooled children, 18 April 2008, Junction City, Oregon.

"Genes, Forensics, and Mold: Genetic Diversity and Management of Plant Diseases." Apprenticeships in Science and Engineering Mid-Summer Conference, Corvallis, Oregon, 12 July, 2007.

“Molecular Detection of Plant Pathogens: Crime Scene Investigation for Plants.” Apprenticeships in Science and Engineering Mid-Summer Conference, Corvallis, Oregon, 21 July, 2006.

5. SERVICE TO PUBLIC (non-professionally related)

High school and middle school youth pastor with a local church in Junction City, Oregon, 2009 - 2010.
City Council for Harrisburg, Oregon and Harrisburg Redevelopment Agency board, 2007-2008.

E. AWARDS

a. INTERNATIONAL

2007 Organisation for Economic and Cooperative Development Fellowship

b. NATIONAL

2009 ARS Pacific West Area Early Career Scientist, USDA-ARS

2008 Early Career Award, American Phytopathological Society Pacific Division

c. OTHER

2010 Outstanding Performance Award, USDA-ARS

2009 Outstanding Performance Award, USDA-ARS

2008 Outstanding Performance Award, USDA-ARS

2007 Outstanding Performance Award, USDA-ARS

2006 Outstanding Performance Award, USDA-ARS

2003 Bert Bohmont Award for Excellence in Extension Education, Department of Bioagricultural Sciences and Pest Management, Colorado State University

2002 R. Ralph Baker Award for Research Excellence, Department of Bioagricultural Sciences and Pest Management, Colorado State University

2002 University Graduate Fellowship, Colorado State University

1995-1999 Ford Family Foundation Ford Scholars Scholarship