

WENPING QIU

Center for Grapevine Biotechnology
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EDUCATION

Ph.D., Plant Pathology/Biotechnology (minor)
North Carolina State University
Advisor: Dr. James W. Moyer 1993.8-1997.12
M.S., Virology. Wuhan Institute of Virology,
Chinese Academy of Science 1985.9-1988.7
B. S., Biology. Henan Teacher's University, P. R. China 1981.9-1985.7

PROFESSIONAL EXPERIENCE

Clif & Gail Smart Professor, Nov. 2012-present
Professor, Plant Virology and Molecular Biology
Aug. 2010-present
Director, Plant Science Graduate Program, Missouri State University
Jan. 2011-2017
Director, Center for Grapevine Biotechnology, Missouri State University
Aug. 2009-present
Associate Research Professor, Plant Virology and Molecular Biology
Aug. 2005-Jul. 2010
Assistant Research Professor, Plant Virology and Molecular Biology
Missouri State University Oct. 2000-Jul. 2005
Adjunct Professor (doctoral faculty)
Department of Fruit Sciences, China Agricultural University
Oct. 2005-present
Adjunct Professor (doctoral faculty)
Division of Plant Sciences
University of Missouri Apr. 2011-present
Postdoctoral Research Assoc., Plant Virology
Texas A&M University Nov. 1997-Sept. 2000
Research Assistant, Plant Virology
North Carolina State University Aug. 1993-Oct. 1997
Quarantine Officer, Haikou Animal & Plant Quarantine Bureau,
P. R. China Oct. 1990-Jul. 1993
Research Assistant and Lab Secretary, Wuhan Institute of Virology,
China Academy of Science Aug. 1985-Sep. 1990

HONORS & AWARDS

Associate Editor, Phytopathology, 2017-2020
Professor Salary Incentive Program Award, 2016
Catalyst Award, ALOT, the State of Missouri, 2014
Featured Story, Mind's Eyes, MSU, 2014
Clif & Gail Smart Endowed Professorship, 2012
One of the 100 Talents, Ningxia Hui Autonomous Region, China, 2010
University Award for Excellence in Research
Missouri State University, 2006
Excellence in Research Award, College of Natural and Applied Sciences
Southwest Missouri State University, 2003

American Society for Virology Travel Award
for Postdoctoral Associate, 1999
Nusbaum Scholar Award for Outstanding Research
Dept. Plant Pathology, North Carolina State University, 1998
(<http://www.cals.ncsu.edu/plantpath/activities/awards/nusbaum/1997.html>)

BOOK CHAPTERS

Singh K, Kaur R, **Qiu W.** (2012) New Virus discovery by deep sequencing of small RNAs. In *RNA Abundance Analysis: Methods and Protocols, Methods in Molecular Biology*, 883:177-191. Humana Press,
W. P. Qiu and H. B. Scholthof (2007) TBSV Gene Vectors, Unit 161.4.1-161.4.16, in “*Current Protocols in Microbiology*” (Editor: Anne Simon). John Wiley & Sons, Inc. Hoboken, New Jersey, USA ([online abstract](#))
A.N. Shi and **W. P. Qiu** (1998). Molecular biology and techniques of plant resistance to fungi and bacteria (**in Chinese**). Pages 70-100 In “*Biotechnology and Sustainable Agriculture*” (Eds: Z. P. Yang, S. J. Hu and X. L. Zhou). Shanghai Scientific and Technological Literature Publishing House, Shanghai, China.

REVIEW PAPER BY INVITATION

Qiu W, Feechan, A., Dry, I. (2015) Current understanding of grapevine defense mechanisms against the biotrophic fungus (*Erysiphe necator*), the causal agent of powdery mildew disease. *Horticulture Research* 2: 15020 ([10.1038/hortres.2015.20](http://dx.doi.org/10.1038/hortres.2015.20))

RESEARCH PUBLICATIONS (PEER REVIEWED, student authors underlined)

Beach, S., Kovens, M., Hubbert, L., Honesty, S., Guo, Q., Pap, D., Dai, R., Kovacs, L. and Qiu, W. P. 2017, Genetic and phenotypic characterization of Grapevine vein clearing virus from wild *Vitis rupestris*. *Phytopathology*, 107:138-144 (<http://dx.doi.org/10.1094/PHYTO-04-16-0173-R>)
Howard, S. and **Qiu W.** 2017 Viral small RNAs reveal the genomic variations of three grapevine vein clearing virus quasispecies populations. *Virus Res.* 229:24-27.
(<http://www.sciencedirect.com/science/article/pii/S016817021630750X>)
Howard, S., Bouck, J. and **Qiu, W.** 2016 Assembly and analysis of the chloroplast genome of the North American hybrid grape 'Norton'. *Vitis* 55, 95-98 (<http://pub.jki.bund.de/index.php/VITIS/article/view/5743>)
Zhang Y, Angel CA, Valdes S, **Qiu W**, Schoelz JE (2015) Characterization of the Promoter of Grapevine vein clearing virus. *Journal of General Virology* 96:165-169
(<http://vir.sgmjournals.org/content/early/2014/10/02/vir.0.069286-0.long>)
Gao F, Dai R., Pike S. M., **Qiu W.**, Gassmann W. (2014) Functions of EDS1-like and PAD4 genes in grapevine defenses against powdery mildew. *Plant Molecular Biology* 86: 381-393.
(<http://link.springer.com/article/10.1007%2Fs11103-014-0235-4>)
Guo Q, Honesty S, Xu M, Zhang Y, Schoelz J, Qiu W (2014) Genetic diversity, tissue and host specificity of Grapevine vein clear virus. *Phytopathology* 104:539-547
(<http://apsjournals.apsnet.org/doi/pdfplus/10.1094/PHYTO-03-13-0075-R>).
Dai R, Ge, H. Howard, S., and **Qiu, W.** (2012) Transcriptional expression of stilbene synthase genes are regulated developmentally and differentially in response to powdery mildew in Norton and Cabernet Sauvignon grapevine. *Plant Science* 197:70-76(<http://www.ncbi.nlm.nih.gov/pubmed/23116673>)
Singh, K., Talla, A., and **Qiu, W.** (2012) Small RNA profiling of virus-infected grapevines: evidences for virus infection-associated and variety-specific miRNAs. *Funct Integr Genomics* 12:659-669.
(<http://www.springerlink.com/content/a5v173768630714w/>)
Lunden, S. and **Qiu, W.** (2011) First report of Grapevine leafroll-associated virus 2 in a hybrid grape 'Vidal Blanc' in Missouri. *Plant Disease* 96:462 (<http://apsjournals.apsnet.org/doi/pdfplus/10.1094/PDIS-10-11-0834>)
Zhang Y., Singh, K., Kaur, R. **Qiu, W.** (2011) Association of a new grapevine DNA virus with the vein-clearing and vine decline in grapevine. *Phytopathology* 101:1081-1090.
(<http://apsjournals.apsnet.org/doi/pdfplus/10.1094/PHYTO-02-11-0034>)
Ali M, Howard S, Chen S, Wang Y, Yu O, Kovacs L, **Qiu W.** (2011) Berry skin development in Norton grape: Distinct patterns of transcriptional regulation and flavonoid biosynthesis. *BMC Plant Biology* 11: 7(<http://www.biomedcentral.com/1471-2229/11/7>)
Marsh E, Alvarez S, Hicks LM, Barbazuk WB, **Qiu W**, Kovacs L, Schachtman D., (2010) Changes in Protein Abundance During Powdery Mildew Infection of Leaf Tissues of Cabernet Sauvignon Grapevine (*Vitis vinifera* L.). *Proteomics*, 10:2057-2064 <http://onlinelibrary.wiley.com/doi/10.1002/pmic.200900712/pdf>

Fei Gao, Xiaomei Shu, Mohammad Babar Ali, Susanne Howard, **Nan Li,** Patrick Winterhagen, **Wenping Qiu,** Walter Gassmann, (2010) A functional EDS1 ortholog is differentially regulated in powdery mildew resistant and susceptible grapevines and complements an Arabidopsis eds1 mutant, **Planta**, 231:1037-1047 (<http://www.springerlink.com/content/lh5375414r2374x4/fulltext.pdf>)

S. Lunden, B. Z. Meng, J. Avery and **W. P. Qiu** (2010) Association of Grapevine fanleaf virus, Tomato ringspot virus and Grapevine rupestris stem pitting-associated virus with a grapevine vein-clearing complex on var. Chardonnay. **European Journal of Plant Pathology** 126:135-144. doi: 10.1007/s10658-009-9527-y (<http://www.springerlink.com/content/10673q366q207181/fulltext.pdf>)

C. Fekete, R. W. M. Fung, Z. Szabó, **W. P. Qiu,** Le Chang, D. P. Schachtman, and L. G. Kovács, (2009) Up-regulated transcripts in a compatible powdery mildew-grapevine interaction. **Plant Physiology and Biochemistry** 47:732-738. [Online abstract](#)

Patrick Winterhagen, Susanne F. Howard, **W. P. Qiu,** and László G. Kovács (2008) Transcriptional up-regulation of grapevine MLO genes in response to powdery mildew infection. **American Journal of Viticulture and Enology**, 59:159-168(<http://www.ajevonline.org/cgi/content/abstract/59/2/159>)

Fung RWM, Gonzalo M, Fekete C, Kovacs LG, He Y, Marsh E, McIntyre LM, Schachtman DP, **Qiu W. P.** (2008) Powdery mildew induces defense-oriented reprogramming of the transcriptome in a susceptible but not in a resistant grapevine. **Plant Physiology**, 146: 236-249(<http://www.plantphysiol.org/cgi/content/abstract/146/1/236>)
Commentator's: <http://www.plantphysiol.org/cgi/content/full/146/1/1>

Qiu, W. P., Avery, JD, Jr. Lunden S (2007) Characterization of a severe virus-like disease in Chardonnay grapevines in Missouri (Brief). **Plant Health Progress**doi:10.1094/PHP-2007-1119-01-BR
http://www.plantmanagementnetwork.org/php/search/search_action.asp

Fung RWM, **Qiu W. P.,** Su YC, Schachtman D, Huppert K, Fekete C, Kovacs LG (2007) Gene expression variation in grapevine species *Vitis vinifera* L. and *Vitis aestivalis* Michx. **Genetic Resources and Crop Evolution** 54: 1541-1553(<http://www.springerlink.com/content/3447327j3670x736/?p=834b8fb1ca7b400496e91bd2103a8aec&pi=0>)

X. Y. Zhong, H. S. Hou and **W. P. Qiu** (2005) The integrity of nonviral fragments in a recombinant Tomato bushy stunt virus and defective interfering RNA is influenced by silencing and the type of inserts. **Molecular Plant-Microbe Interactions** 18:800-807([online abstract](#))

J. Cawly, A. B. Cole, L. Kiraly, **W. P. Qiu** and J. E. Schoelz (2005) Genetic suppression of cell death during the hypersensitive response to Cauliflower mosaic virus infection. **Molecular Plant-Microbe Interactions** 18:212-219 ([online abstract](#))

W.P. Qiu and K.-B. G. Scholthof (2004). Satellite panicum mosaic virus capsid protein elicits symptoms on a non-host plant and interferes with a suppressor of virus-induced gene silencing. **Molecular Plant-Microbe Interactions** 17:263-271([online abstract](#))

W. P. Qiu, Sándor Fekete, Tabitha Todd and K. G. Laszlo (2004). Facilitation of microshoot tip propagation of *Vitis aestivalis* var. Norton by combined application of an antioxidant and cytokinins. **American Journal of Enology and Viticulture** 55:112-114(<http://www.ajevonline.org/cgi/content/abstract/55/1/112>)

H. S. Hou and **W. P. Qiu** (2003). A novel co-delivery system consisting of a Tomato bushy stunt virus and a defective interfering RNA for studying gene silencing. **Journal of Virological Methods** 111, 37-42([online abstract](#))

W. P. Qiu, J.-W. Park, and H. B. Scholthof, (2002). Tombusvirus P19-suppression of virus induced gene silencing is controlled by genetic and dosage features that influence pathogenicity. **Molecular Plant-Microbe Interactions** 15, 269-280([online abstract](#))

W. P. Qiu and H. B. Scholthof (2001). Effects of inactivation of the coat protein and movement genes of Tomato bushy stunt virus on early accumulation of genomic and subgenomic RNAs. **Journal of General Virology**. 82:3107-3114 ([online article](#))

W. P. Qiu and K.-B. G. Scholthof, (2001). Defective interfering RNAs of Satellite panicum mosaic virus accumulate to high levels without affecting replication of the helper virus or satellite RNAs. **The Journal of Virology**, 75:5429-5432 ([online article](#))

W. P. Qiu and K. -B. G. Scholthof, (2001). Genetic identification of multiple biological roles associated with the capsid protein of Satellite panicum mosaic virus. **Molecular Plant-Microbe Interactions**, 14:21-30 ([online abstract](#))

W. P. Qiu and H. B. G. Scholthof, (2001). Retention of a small replicase gene segment in Tomato bushy stunt virus defective RNAs inhibits their trans-replication by the helper virus. **Virology**, 281, 51-60 ([online abstract](#))

W. P. Qiu and K. -B. G. Scholthof, (2000). In vitro and in vivo generated defective RNAs of satellite panicum mosaic virus define cis-acting RNA elements required for replication and movement. **Journal of Virology**. 74:2247-2254 ([online article](#))

W. P. Qiu and J. W. Moyer. (1999). Tomato spotted wilt Tospovirus adapts to the TSWV N gene-derived resistance by genome reassortment. *Phytopathology* 89:575-582.

(<http://apsjournals.apsnet.org/doi/pdfplus/10.1094/PHTO.1999.89.7.575>)

W. P. Qiu, S. M. Geske, C. M. Hickey and J.W. Moyer. (1998). Tomato spotted wilt Tospovirus genome reassortment and genome segment-specific adaptation. *Virology* 244: 186-194.([online abstract](#))

W. P. Qiu, Y. Z. Zhou, and D. M. Ding. (1990). Changes of isoenzymes from citrus trees infected by citrus exocortis viroid. *Chinese. J. Virol.* 6(2): 196-198

K. Hoffmann, W. P. Qiu, and J. W. Moyer (2001). Overcoming host- and pathogen- mediated resistance in tomato and tobacco maps to the M RNA of Tomatospotted wilt virus (TSWV). *Molecular Plant-Microbe Interactions* 14, 242-249([online abstract](#))

G. Thottappilly, W. P. Qiu, J. S. Batten, J. N. Hughes and K. -B. G. Scholthof. (1999). A new virus on Maize in Nigeria: Maize Mild Mottle Virus. *Plant Diseases* 83:302.

REVIEW PAPER

W.P. Qiu, H.S. Hou and L. G. Kovacs (2005). Defense-related candidate genes in *Vitis* species. *Acta Horticulturae* number 689:447-457(http://www.actahort.org/books/689/689_53.htm)

J. W. Moyer and W. P. Qiu. (1996). Molecular and genetic determination of diversity in the genus Tospovirus. *Acta Horticulturae* 431:219-227.

W. P. Qiu and H. Q. Tan. (1990). The control of viroid. *Nature J. China* 14:46-50.

PUBLICATION EDITED

Proceedings of International Grapevine Genomics Symposium, St. Louis, Missouri, USA July12-14, 2005 (ISBN09748190-0-X) Editors: W. P. Qiu and L. Kovacs, Missouri State University, Springfield, Missouri, USA.

PUBLICATIONS (NON-PEER REVIEWED)

Fact Sheet (2013): Grapevine vein clearing and vine decline disease, contributed first-hand knowledge and four Photos, National Clean Plant Network-Grape Publication

W. P. Qiu (2012) White Paper: The Grape and Wine Research Alliance of Missouri. *The Midwest Winegrower* page 3-4, Vol. 4, Fall/Winter, 2012-2013

W. P. Qiu and J. Avery, Jr. (2007) Symptoms and prevention of grapevine virus-like diseases. *Wine East*, September, 12-16

R. W. M. Fung, W. P. Qiu and L. G. Kovacs (2005) Characterization of two class III ethylene response factors (ERF) genes from the disease-resistant grapevine *Vitis aestivalis* 'Norton'. *Proceedings of International Grape Genomics Symposium* (St. Louis, Missouri, July 12-14, 2005), pp. 42-46. Editors: W.P. Qiu and L. Kovacs, Missouri State University, Springfield, Missouri

E. E. Jarvis, W. P. Qiu, L. G. Kovacs and J. C. Polacco (2005) Pathogen response in *Vitis*. *Proceedings of International Grape Genomics Symposium* (St. Louis, Missouri, July 12-14, (2005) page70-72. Editors: W. P. Qiu and L. Kovacs, Missouri State University, Springfield, Missouri

B. B. Karakkat and W. P. Qiu (2005) The genomic identity of two ethylene response factor genes in selected *Vitis* species. *Proceedings of International Grape Genomics Symposium*, page73-78, Editors: W. P. Qiu and L. Kovacs, Missouri State University, Springfield, Missouri

L. G. Kovacs, W. P. Qiu, Y. C. Su and C. Feketa (2005) Applicability of the *Vitis* GeneChip for transcriptome analysis in heterologous grapevine species. *Proceedings of International Grape Genomics Symposium*. page 88-91. Editors: W. P. Qiu and L. Kovacs, Missouri State University, Springfield, Missouri

W. P. Qiu (2005). Stressed Out Plant, *The Berry Basket* 8, 7-9, 2005

W. P. Qiu, L. G. Kovacs and Pamela Mayer (2003) Brochure: *Vitis* Gene Discovery program

W. P. Qiu and L. G. Kovacs (2003). Do we need to be concerned about genetically modified grapevine. *Vineyard and Vintage View*, 18(4)

W. P. Qiu, L. G. Kovacs and Marilyn Odneal (2003). Website: *Vitis* Gene Discovery Program:

<http://mtngqv.smsu.edu/vgdp>

Laszlo Kovacs and W. P. Qiu (2002) Latent viruses in Eastern hybrid grapevines *Wine East*, 29 (1): 12-1.

W. P. Qiu (2001) New Trends Part I: Plant Defensins: New Antifungal Proteins from Natural Crop Plants. *Vineyard and Vintage View*, 16(2).

W. P. Qiu (2001) New Trends Part II: Plant viral vectors: New Ways of Producing High Yields of Proteins. Vineyard and Vintage View, 16(3).

W. P. Qiu (2000) Research program description, Vineyard and Vintage View, 15 (5).

PROFESSIONAL MEMBERSHIP

American Association for the Advancement of Science
American Phytopathological Society
International Council for the Study of Virus and Virus-like Diseases of Grapevine (ICVG)

COMMITTEE MEMBER

National Clean Plant Network-Grape Tier II Board Member
Virology Subcommittee, American Phytopathological Society, 2001-2004
2013-2016
MSU Graduate College Council, 2011-present
NSF-funded Grapevine Research Coordination Network, 2008-2013
Board of Directors, Springfield Discovery Center, 2004-2005
MSU Faculty Senate, 2005-2006, 207-2008
MSU Mountain Grove Task Force, 2006
Academic Committee for the State Key Laboratory of Seedling Engineering, China 2007-2012

STUDENTS ADVISED

Li Su, 2016-2017
Cory Keith, 2016-2017
Kaylie Austin, 2016-2017
Sylvia Peterson, 2015-2016
Lihua Xu, 2015-2016
Steven Beach, graduate student, 2013-2015
Michael Kovens, graduate student, 2013-2015
LeAnn Hubbert, graduate student, 2013-2014
Shae Honesty, graduate student, 2012-2014
Ru Dai, coop. Ph. D. student, 2011-2016
Heather McCallister, graduate student, 2012-2013
Aaron Exner, graduate student, 2012-2013
Hui Ge, graduate student in plant science, 2011-2013
Qiang Guo, graduate student in plant science, 2011-2013
Nicole Doerr, graduate student of MU, 2012-2013
Shae Honesty, undergraduate student,
Ru Dai, graduate student in plant science, 2009-2011
Yu Zhang, graduate student in plant science, 2009-2011
Yinming Zhang, visiting doctoral student
Xiaomei Shu, graduate student in plant science
Appalanaidu Sasapu, graduate student in Plant Science
Nan Li, graduate student in Plant Science
Qiang Chen, graduate student in Plant Science
Tabitha M. Todd, graduate student in Plant Science
Brijesh Karakkat, graduate Student in Plant Science
Yan He, graduate student in Plant Science
Xueyang Zhong, graduate student in Plant Science
Henry Johnson, High school student
MacKenzie Keller, undergraduate
Kayla Buchholz, undergraduate
Shawna Deeds, undergraduate

Christina Broos, undergraduate
Sherry Ogletree, undergraduate

POSTDOCS SUPERVISED

Dr. Kashmir Singh, Dr. Mohammad B. Ali, Dr. Patrick Winterhagen
Dr. Raymond Fung, Dr. Hesheng Hou, Dr. Sándor Fekete

TEACHING EXPERIENCE

Plant Biotechnology AGP469 and AGP730-025, 2013-present
Advanced Topics in Plant Science, FRS 630/AGP730, 2002-present
Guest Lecturer
Lectures on “China: Challenges in Agriculture” in AGR100
Lectures on plant viral disease diagnosis in the course AGP 483,
Missouri State University, 2001-2007, 2009-2014
Lecture on plant virus in the course: Introductory Plant Pathology
(PLPA308): Texas A&M University, 1999
Lectures on plant viruses with negative-sense or ambisense genomic
RNAs and on Virus Purification and Characterization in “Plant
Virology” (PLPA620), Texas A&M University, 1999
Lectures on DNA sequencing, Genetic Markers (RFLP, RAPD, AFLP)
Positional cloning in “Molecular Biology of Plant-Microbe
Interactions” (PLPA689), Texas A&M University, 1998

INVITED SPEAKER *Advanced Topics in Current Biology, Hainan University, Haikou, Hainan, China. November 29, 2015*
Advanced Topics in Current Biology, Hainan University, Haikou, Hainan, China. December 17, 2014
Transcriptomics and functional components of grapevine basal defense against fungal pathogens, Fruit Tree Omics and Biotechnology, Wuhan, HuBei, P. R. China, October 20, 2014.
Transcriptomics and functional components of grapevine basal defense against fungal pathogens, Horticulture Research, Nanjing, Jianshu, P. R. China, October 16, 2014

REVIEWER

Associate Editor, *Phytopathology*, 2017-2020
Journals:
Virology; Phytopathology; Journal of General Virology, Plant Molecular Biology, Planta, BMC Plant Biology, Journal of Experimental Botany, Plant Science, New Phytologist; Journal of RNAi; Molecular Plant-Microbe Interactions; Plant Cell, Tissue & Organ Culture; Tropical Agriculture; Peanut Science; Plant Disease
Funding Agency:
German Research Foundation, Kuwait Science Foundation, NSF-Plant Genome Project, USDA/Viticulture Consortium-East; USDA-NRI Biology of Plant-Microbe Interactions; USDA/Small Business Innovation Research Program (*ad hoc* reviewer); USDA-NRI Developmental Processes of Agricultural Plant Program (*ad hoc* reviewer)