

Rosemarie W. Hammond, Lead Scientist

Education:

B. S. (Botany)	Miami University, Oxford, OH (1975)
M.S. (Botany)	University of Tennessee, Knoxville, TN (1977)
Ph.D. (Botany)	University of Tennessee, Knoxville, TN (1981)

Employment history:

1981-1983	Postdoctoral Research Fellow, Department of Botany and Plant Pathology, Purdue University, West Lafayette, IN.
1983-1985	Faculty Research Associate, Department of Biology, University of Maryland Baltimore County, Catonsville, Maryland working at the USDA Plant Virology Laboratory, Beltsville, MD.
1985-1988	Research Plant Pathologist (Research Associate), USDA, ARS, Plant Virology Laboratory, Beltsville, MD.
1988-present	Research Plant Pathologist, USDA, ARS, Molecular Plant Pathology Laboratory Beltsville, MD.
1993 -2010	Adjunct Associate Professor/Adjunct Professor, Center for Biosystems Research, University of Maryland Biotechnology Institute, College Park, MD
2016	Jan. 2016 – August 2016. Acting National Program Leader, Plant Health. USDA ARS Office of National Programs, Beltsville, MD

Awards: Elected Fellow of the American Phytopathological Society, 2007

Professional Activities:

1996	Technical expert for International Atomic Energy Agency
1996-present	Chair, BARC Institutional Biosafety Committee
1999-2002	Associate Editor, Plant Disease
2000-present	ICTV Working Group on Family Tymoviridae; Chair, 2017-present
2001	Technical expert for US-AID Bureau of Global Programs, Field Support and Research; on site review in Egypt and Israel
2004	Guest Editor, Vaccine
2008-present	Editorial Board, GM Crops & Food: Biotechnology in Agriculture and the Food Chain
2011	Editorial Board for the Springer Index of Viruses, 2nd Edition.
2014	Panel member, USDA NIFA 2014 National Needs Graduate Fellowships Program
2014-present	Senior Editor, American Phytopathological Society Press
2015-present	Advisory Board, Archives of Virology
2016-present	Selection Committee, AAAS Executive Branch S&T Policy Fellowships

Publications

Peer-Reviewed Journal Articles

1. Henke, R. R. and Wahnbaeck, R.  $\beta$ -aspartokinase from developing endosperm of maize. *Biochem. Biophys. Res. Commun.* 79:38-45. 1977.
2. Henke, R. R. and Wahnbaeck-Spencer, R. Variations in  $\beta$ -aspartate kinase activity during the development of maize endosperm. *FEBS Lett.* 99:113-116. 1979.
3. Wahnbaeck-Spencer, R., Henke, R. R., Mills, W. R., Burdge, E. L., and Wilson, K. G. Intracellular localization of  $\beta$ -aspartate kinase in spinach (*Spinacea oleracea*). *FEBS Lett.* 104:303-308. 1979.
4. Hammond, R. W., Foard, D. E., and Larkins, B. A. Molecular cloning and analysis of a gene coding for the soybean Bowman-Birk protease inhibitor. *J. Biol. Chem.* 259:9883-9890. 1984.
5. Hammond, R. and Ryan, F. J. Partial purification and characterization of ribulose-1,5-bisphosphate carboxylase from the developing endosperm of *Zea mays* L. *J. Plant Physiol.* 119:97-107. 1985.
6. Hammond, J. and Hammond, R. W. A nucleic acid probe for the detection of bean yellow mosaic virus. *Acta Hortic.* 164:373-378. 1985.
7. Owens, R. A., Hammond, R. W., Gardner, R. C., Kiefer, M. C., Thompson, S. M., and Cress, D. E. Site-specific mutagenesis of potato spindle tuber viroid cDNA: Alterations within premelting region 2 that abolish infectivity. *Plant Mol. Biol.* 6:179-192. 1986.
8. Hammond, R. W. and Owens, R. A. Mutational analysis of potato spindle tuber viroid reveals complex relationships between structure and infectivity. *Proc. Natl. Acad. Sci. USA* 84:3967-3971. 1987.
9. Salazar, L. F., Hammond, R. W., Diener, T. O., and Owens, R. A. Analysis of viroid replication following *Agrobacterium*-mediated inoculation of nonhost species with potato spindle tuber viroid cDNA. *J. Gen. Virol.* 69:879-889. 1987.
10. Diener, T. O., Smith, D. R., Hammond, R. W., Albanese, G., La Rosa, R., and Davino, M. Citrus b viroid identified as a strain of hop stunt viroid. *Plant Dis.* 72:691-693. 1988.
11. Lee, I. M., Davis, R. E., Hammond, R., and Kirkpatrick, B. Cloned riboprobe for detection of a mycoplasma-like organism. *Biochem. Biophys. Res. Commun.* 155:443-448. 1988.
12. Hammond, R., Diener, T. O., and Owens, R. A. Infectivity of chimeric viroid transcripts reveals the presence of alternative processing sites in potato spindle tuber viroid. *Virology*, 170: 486-495. 1989.
13. Hammond, R., Smith, D. R., and Diener, T. O. Nucleotide sequence and proposed secondary structure of *Columnea latent viroid*: A natural mosaic of viroid sequences. *Nucl. Acids Res.* 17:10083-10094. 1989.

14. Hammond, J. and Hammond, R. W. Molecular cloning, sequencing and expression in *Escherichia coli* of the bean yellow mosaic virus coat protein gene. *J. Gen. Virol.* 70:1961-1974. 1989.
15. Hadidi, A. and Hammond, R. W. Construction of molecular clones for identification and detection of tomato ringspot and arabis mosaic viruses. *Acta Hort.* 235:223-230. 1989.
16. Ramirez, P., Hammond, R. W., Karkashian, J., and Mora, M. Production of biotinylated nucleic acid probes for detection of maize rayado fino virus. *Revista de Invest. Agr.*, 22:50-55. 1990.
17. Hadidi, A., Huang, C., Hammond, R. W., and Hashimoto, J. Close homology between the causal agent of dapple apple disease and apple scar skin viroid. *Phytopathology*, 80:263-268. 1990.
18. Owens, R. A. and Hammond, R. W. Mutational analysis of viroids. *Seminars in Virology*, 1:101-106. 1990.
19. Mishra, M. D., Hammond, R. W., Owens, R. A., Smith, D. R., and Diener, T. O. Indian bunchy top disease of tomato is caused by a distinct strain of citrus exocortis viroid. *J. Gen. Virol.* 72: 1781-1785. 1991.
20. Crosslin, J. M., Hammond, R. W., and Hammerschlag, F. A. Detection of prunus necrotic ringspot virus serotypes in herbaceous and Prunus hosts with a complementary RNA probe. *Plant Dis.* 76: 1132-1136. 1992.
21. Hammond, R. W. Analysis of the virulence modulating region of potato spindle tuber viroid (PSTVd) by site-directed mutagenesis. *Virology* 187: 654-662. 1992.
22. Sano, T., Candresse, T., Hammond, R. W., Diener, T. O., and Owens, R. A. Identification of multiple structural domains regulating viroid pathogenicity. *Proc. Natl. Acad. Sci. USA.* 89: 10104-10108. 1992.
23. Davis, R. E., Prince, J. P., Hammond, R. W., Dally, E. L., and Lee, I.-M. Polymerase chain reaction detection of Italian periwinkle virescence mycoplasma-like organism (MLO) and evidence for relatedness with aster yellows MLOs. *Petria* 2: 184-193. 1992.
24. Bertaccini, A., Davis, R. E., Hammond, R. W., Vibio, M., Bellardi, M. G., and Lee-I.-M. Sensitive detection of mycoplasma-like organisms in field-collected and in vitro propagated plants of Brassica, Hydrangea, and Chrysanthemum by polymerase chain reaction. *Ann. Appl. Biol.* 121, 593-599. 1992.
25. Diener, T. O., Owens, R. A., and Hammond, R. W. Viroids: the smallest and simplest agents of infectious diseases. How do they make plants sick? *Intervirology* 35: 186-195. 1993.

26. Diener, T. O., Hammond, R. W., Black, T., and Katze, M. G. Mechanism of viroid pathogenesis: differential activation of the interferon-induced, double-stranded RNA-activated, Mr 68,000 protein kinase by viroid strains of varying pathogenicity. *Biochemie*. 75, 533-538. 1993.
27. Lee, I.-M., Hammond, R. W., Davis, R. E., and Gundersen, D. E. Universal amplification and analysis of pathogen 16S rDNA for classification and identification of mycoplasma-like organisms. *Phytopathology* 83: 834-842. 1993.
28. Podleckis, E. V., Hammond, R. W., Hurtt, S. S., and Hadidi, A. Chemiluminescent detection of potato and pome fruit viroids by digoxigenin-labeled dot blot and tissue blot hybridization. *J. Virol. Methods*. 43, 147-158. 1993.
29. Lee, I.-M., Gundersen, D.E., Hammond, R. W., and Davis, R. E. Use of mycoplasma-like organism (MLO) group-specific oligonucleotide primers for nested-PCR assays to detect mixed-MLO infections in a single host plant. *Phytopathology* 84, 559-566. 1994.
30. Hammond, R. W. Agrobacterium-mediated inoculation of PSTVd cDNAs onto tomato reveals the biological effect of apparently lethal mutations. *Virology*. 201, 36-45. 1994.
31. Lee, I.-M., Gundersen, D. E., Hammond, R. W., Davis, R. E., Bertaccini, A., and Vibio, M. M. Nested PCR assays detect mixed-MLO infections in a single host plant. *IOM Lett.* 3: 263-264. 1994.
32. Hammond, R. W., and Crosslin, J. M. The complete nucleotide sequence of RNA 3 of a peach isolate of *Prunus necrotic ringspot virus*. *Virology*. 208: 349-353. 1995.
33. Heuss-LaRosa, K., Hammond, R., Crosslin, J. M., Hazel, C., and Hammerschlag, F. A. Monitoring *Prunus necrotic ringspot virus* infection by hybridization with a cRNA probe after in vitro micrografting. *J. Amer. Soc. Hort. Sci.* 120: 928-931. 1995.
34. Zhu, S. F., Hadidi, A., Hammond, R. W., Yang, X., and Hansen, A. J. Nucleotide sequence of dapple apple and pear rusty skin viroids. *Acta Hort.* 386:554-559. 1995.
35. Owens, R. A., Steger, G., Hu, Y., Fels, A., Hammond, R. W., and Riesner, D. Molecular features responsible for potato spindle tuber viroid pathogenicity. *Revista Mexicana de Fitopatologia*. 13: 138-145. 1995.
36. Kogel, R., Hammond, R. W., and Ramirez, P. Incidence and geographic distribution of maize rayado fino virus (MRFV) in Latin America. *Plant Dis.* 80:679-683. 1996.
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40. Ding, B., Kwon, M.-O., Hammond, R., and Owens, R. Cell-to-cell movement of potato spindle tuber viroid. *Plant J.* 12: 931-936. 1997.
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68. Hammond, R. W., Hernandez, E., Mora, F., Ramirez, P. First report of Beet pseudo-yellows virus on *Cucurbita moschata* and *C. pepo* in Costa Rica. *Plant Dis.* 89: 1130. 2005.
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Hammond, R. W. Immunogenicity of a novel, bivalent, plant-based oral vaccine against hepatitis B and human immunodeficiency viruses. *Biotechnol. Lett.* 28: 959-967. 2006.

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86. Salyaev, R. K., Stolbikov, A. S., Rekoslavskaya, N. I., Shchelkunov, S. N., Pozdnyakov, S. G., Chepinoga, A. V., and Hammond, R. W., Obtaining tomato plants transgenic for the pre-S2-S-HDEL gene, which synthesizes the major hepatitis B surface antigen. *Doklady Biochem. Biophys.* 433: 187-190. 2010.
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