

Curriculum Vitae
Dr. Rytas Vilgalys

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Education

Ph.D. in Botany, Virginia Polytechnic Institute and State University, Blacksburg, VA, 1985
Thesis: "Evolutionary genetics and systematics of fungi in the *Collybia dryophila* group".
Ph.D. supervisor: O. K. Miller, Jr.
M.S. in Botany, Virginia Tech, 1982
B.A. in Biology, State University of New York College at Geneseo, 1978

Scientific Positions/Appointments

Professor of Biology, Department of Biology, Duke University, 2000-present
Adjunct Professor, Department of Molecular Genetics and Microbiology, Duke, 1999-present
Professor of Botany, Department of Botany, Duke University, 1999-2000
Associate Professor, Department of Botany, Duke University, 1993-1999
Member, Duke University Program in Genetics and Genomics, 1988-present
Member, Duke University Mycology Research Unit (DUMRU), 1999-present
Member, Duke University Program in Ecology, 2008-present
Visiting Scientist, CSIRO Forestry Division, Canberra, Australia, 1995, 2009
Assistant Professor, Department of Botany, Duke University, 1986-1993
Postdoctoral Associate, Systematic Mycology Laboratory, U.S.D.A., Beltsville, MD, December
1985-August 1986 (A. Rossman, supervisor)

Professional societies

American Society for Advancement of Science	Botanical Society of America
American Society for Microbiology	Society for Systematic Biology
Australasian Mycological Society	Genetics Society of America
Mycological Society of America	Society for the Study of Evolution
British Mycological Society	Society for the Study of Molecular Evolution
American Society of Plant Taxonomists	Sigma Xi Scientific Research Society

Fellowships, Awards

Distinguished Mycologist Award, Mycological Society of America, 2014
ASM Fellow, American Academy of Microbiology, 2012
AAAS Fellow, 2002
MSA Fellow, Mycological Society of America, 2002
Alexopolous Award, Mycological Society of America, 1995
Outstanding Dissertation Award, College of Arts and Sciences, Virginia Tech, 1986
Gertrude S. Burlingham Fellowship, New York Botanical Garden, 1983.

New York State Regents Scholarship, 1975-1978

Courses taught

at Duke University:

General Microbiology (Bio103L)
Microbial Ecology and Evolution (Bio211L)
Mycology (Bio220L)
Systematic Biology (Bio237L, co-taught with P. Manos)
Advanced Mycology (Bot221)
Plant Biosystematics (Bot256), Molecular Systematics and Evolution (Bot257L)

at Mountain Lake Biological Station (Univ. of Virginia):

Field Mycology (1990, 1992, 2004, 2006, 2008, 2010, 2012)
DNA Techniques for Field Biologists (co-taught w/ Doug Taylor, 1996, 97, 99)

other courses/workshops

1st International Fungal Molecular Systematics Workshop, Academia Sinica, Beijing, China, December 1991 (3 week lecture and laboratory course taught to 30+ students)
Duke Continuing Education, Fall Mushroom Course, intermittently
NC Botanical Garden, Mushroom Identification
NC Wildlife Resources Commission, Mushroom Identification

Professional activities

Mycological Society of America

Vice president/President-elect/President/Past-President, 2008-2011
Assoc. editor, *Mycologia* (1993-1998)
Councilor (1989-1992)

Local Arrangements Committee, Chair

Mycological Society of America Annual Meetings, UNC-Asheville, June 2004

Symposium Organizer

XXV Fungal Genetics Conference, Asilomar (2014)
XVI International Botanical Congress, St. Louis (1999)
International Mycological Congress (2010, 2002, 1998, 1994)

Professional societies: Councilor, Mycological Society of America (1991-1993);

Program Committee, MSA (1989-1995, also current);
Endowment Committee, MSA (1989-1992);
Councilor, MSA (1999-2002)

Editorial Boards: *International Journal of Plant Sciences*, associate editor (1997-2007),

Mycological Research, associate editor (1999-2003);
Systematic Biology, assistant editor (1994-1996);

Grant Review Panels:

NSF Systematic Biology, Biotic Surveys, Microbial Ecology
DOE Joint Genome Community Sequencing Program
U.S.D.A. Forest Biology

Standing Committee member, Systematics Agenda 2000, 1991-1992.

University Service at Duke

Duke University Graduate Program in Genetics and Genomics Biology, executive committee (2008-present)
 Duke University Graduate Program in Ecology, faculty member (2008-present)
 Biology Dept Performance Review Committee (2009-present)
 Biology Dept Seminar Committee (2014-present)
 Biology Dept Curriculum Committee (2007-2010)
 Biology Dept Graduate Affairs Committee (2000-2006)
 Biology Dept Faculty Performance Review Committee (2003-2006, 2011)
 Duke University Institute for Genome Sciences and Policy, Steering Committee (2000-2003)
 Arts and Sciences Council, 1997-2000
 Pre-Major Advising Center, 1996-1998
 Director of Graduate Studies, Dept. of Botany, 1995-1998
 University Program in Genetics: admissions committee (1992-93, 1998-99), executive committee (1993-present)
 Continuing Education Program, fall mushroom course (1992-present)
 Search Committees
 Plant systematics searches, Botany Dept., Duke University, 1988-89, and 1994-95
 Plant evolutionary biologist search, Botany Dept., Duke University, 1998-99
 Department Chair search, Dept. of Microbiology, Duke Medical Center (1993-94)
 Library Director Search Committee, Duke University, (Sep-Oct 1993)
 Howard Hughes Fellowship Program, faculty mentor (1991-present)
 Carolinas-Ohio Science Education Network (COSEN), faculty mentor (1991-present)
 Duke Univ. Faculty Council, Botany Department Representative (1988-1990)
 Mentor, Duke Young Scholars Program in Sciences and Mathematics, Summer program (1989-present)
 North Carolina School of Science and Mathematics, Mentorship Program, Academic mentor (1989-1990)

Publications

1. Vilgalys, R. and O. K. Miller, Jr. 1982. Observations on sexuality in *Collybia butyracea* using a simplified cross technique. *Mycotaxon* 14: 305-307.
2. Vilgalys, R. and O. K. Miller, Jr. 1983. Biological species in the *Collybia dryophila* group in North America. *Mycologia* 75: 707-722.
3. Cotter, H.V.T., T.M. Flynn, R. Vilgalys and A. Hankins. 1985. Shiitake Farming in Virginia. *Virginia Cooperative Ext. Serv. Pub.* 438: 1-12.
4. Vilgalys, R. 1986. Phenetic and cladistic relationships in *Collybia* section *Levipedes*. *Taxon* 35: 225-233.
5. Vilgalys, R. and O.K. Miller, Jr. 1987. Mating relationships within the *Collybia dryophila* group in Europe. *Trans. Brit. Mycol. Soc.* 89: 295-300.
6. Vilgalys, R. and O.K. Miller, Jr. 1987. Morphological studies on the *Collybia dryophila* group in Europe. *Trans. Brit. Mycol. Soc.* 88: 461-472.
7. Vilgalys, R. and J. L. Johnson. 1987. Extensive genetic divergence associated with speciation in filamentous fungi. *Proc. Natl. Acad. Sci. U.S.A.* 84: 2355-2358.
8. Vilgalys, R. 1988. Genetic relatedness among anastomosis groups in *Rhizoctonia* as measured by DNA/DNA hybridization. *Phytopathology* 78: 698-702.
9. Vilgalys, R. and D. Gonzalez. 1989. Ribosomal DNA restriction fragment length polymorphisms (RFLPs) in *Rhizoctonia solani*. *Phytopathology* 80: 151-158.
10. Vilgalys, R. and D. Gonzalez. 1990. Organization of ribosomal DNA in the basidiomycete *Thanatephorus praticola*. *Curr. Genet.* 18:277-280.

11. Vilgalys, R. and M. Hester. 1990. Rapid genetic identification and mapping of enzymatically amplified ribosomal DNA from several species of *Cryptococcus*. *J. Bacteriol.* 172:4238-4246.
12. Hibbett, D. S., and R. Vilgalys. 1991. Evolutionary relationships of *Lentinus* to the Polyporaceae: evidence from restriction analysis of enzymatically amplified ribosomal DNA. *Mycologia* 83:425-439.
13. Cubeta, M. A., E. Echanti, T. Abernethy, and R. Vilgalys. 1991. Characterization of anastomosis groups of binucleate *Rhizoctonia* species using restriction analysis of an amplified ribosomal RNA gene. *Phytopathology* 81: 1395-1400.
14. Gowan, S. P., and R. Vilgalys. 1991. Ribosomal DNA length polymorphisms within populations of *Xylaria magnoliae* (Ascomycotina). *Amer. J. Botany* 78:1603-1607.
15. Vilgalys, R. 1991. Speciation and species concepts in the *Collybia dryophila* complex. *Mycologia* 83: 758-773.
16. Kay, E. and R. Vilgalys. 1992. Spatial distribution and genetic relationships among individuals in a natural population of the oyster mushroom *Pleurotus ostreatus*. *Mycologia* 84: 173-182.
17. Mishler, B. D., P. H. Thrall, J. S. Hopple, Jr., E. DeLuna, and R. Vilgalys. 1992. A molecular approach to the phylogeny of bryophytes: cladistic analysis of chloroplast-encoded 16S and 23S ribosomal RNA genes. *The Bryologist*: 95:172-180.
18. Hibbett, D. S., and R. Vilgalys. 1992. Phylogenetic relationships of the Basidiomycete genus *Lentinus* inferred from molecular and morphological characters. *Syst. Bot.* 18: 409-433.
19. Bruns, T. D., R. Vilgalys, S. M. Barns, D. Gonzalez, D. S. Hibbett, D. J. Lane, L. Simon, S. Stickel, T. M. Szaro, W. G. Weisburg, and M. L. Sogin. 1992. Evolutionary relationships within the fungi: analyses of nuclear small subunit rRNA sequences. *Molec. Phylog. Evol.* 1: 231-241.
20. Vilgalys, R., A. Smith, B. L. Sun, and O. K. Miller, Jr. 1993. Intersterility groups in the *Pleurotus ostreatus* complex from the continental United States and adjacent Canada. *Canad. J. Bot.* 71: 113-128.
21. Meyer, W., T. G. Mitchell, E. Z. Freedman, and R. Vilgalys. 1993. Hybridization probes for conventional DNA fingerprinting used as single primers in the PCR to distinguish strain of *Cryptococcus neoformans*. *Jour. Clin. Microbiol.* 31: 2274-2280
22. Moncalvo, J.-M., S. A. Rehner, and R. Vilgalys. 1993. Systematics of *Lyophyllum* section *Difformia* based on evidence from culture studies and ribosomal DNA sequences. *Mycologia* 85: 788-794
23. Cubeta, M. A., R. Briones-Ortega and R. Vilgalys. 1994. Reassessment of heterokaryon formation in *Rhizoctonia solani* anastomosis group 4. *Mycologia* 85: 777-787.
24. Hopple, J. S., Jr., and R. Vilgalys. 1994. Phylogenetic relationship among coprinoid taxa and allies based on data from restriction site mapping of nuclear rDNA. *Mycologia* 86: 96-107.
25. Vilgalys, R., and B. Sun. 1994. Assessment of species distributions in *Pleurotus* based on trapping of airborne basidiospores. *Mycologia* 86: 270-274.
26. Steele, K. P., and R. Vilgalys. 1994. Phylogenetic analyses of Polemoniaceae using nucleotide sequences of the plastid gene *matK*. *Syst. Bot.* 19: 126-142.
27. Vilgalys, R. and B. Sun. 1994. Ancient and recent patterns of geographic speciation in the oyster mushroom *Pleurotus* revealed by phylogenetic analysis of ribosomal DNA sequences. *Proc. Natl. Acad. Sci. USA* 91: 4599-4603, 7832.
28. Vilgalys, R., and M. A. Cubeta. 1994. Molecular systematics and population biology of *Rhizoctonia*. *Ann. Rev. Phytopath.* 32: 135-155.
29. Vilgalys, R., J. S. Hopple and D. Hibbett. 1994. Phylogenetic implications of generic concepts in fungal taxonomy: The impact of molecular systematic studies. *Mycologia Helvetica* 6: 73-91.
30. Lutzoni, F., and R. Vilgalys. 1995. *Omphalina* (Basidiomycota, Agaricales) as a model system for the study of coevolution in lichens. *Crypt. Bot.* 5: 71-81.
31. Spatafora, J., T. G. Mitchell, and R. Vilgalys. 1995. Analysis of genes coding for small-subunit rRNA sequences in studying phylogenetics of dematiaceous fungal pathogens. *J. Clin. Microbiol.* 33: 1322-1326.

32. Lutzoni, F., and R. Vilgalys. 1995. Integration of morphological and molecular data sets in estimating fungal phylogenies. *Can. J. Bot.* 73: S649-S659.
33. Yoder, A. D., M. Cartmill, M. Ruvolo, K. Smith, and R. Vilgalys. 1996. Ancient single origin for Malagasy primates. *Proc. Natl. Acad. Sci., U. S. A.* 93: 5122-5126.
34. Gräser, Y., M. Volovsek, J. Arrington, G. Schönian, W. Presber, T. G. Mitchell, and R. Vilgalys. 1996. Molecular markers reveal that population structure of the human pathogen *Candida albicans* exhibits both clonality and recombination. *Proc. Natl. Acad. Sci., U. S. A.* 93: 12473-12477.
35. Yoder, A. D., R. Vilgalys, and M. Ruvolo. 1996. Molecular evolutionary dynamics of cytochrome b in strepsirrhine primates: the phylogenetic significance of third position transversions. *Mol. Biol. Evol.* 13:1339-1350.
36. Gräser, Y., Tietz, H.-J., Vilgalys, R., Mitchell, T. G., Forche, A., Presber, W., Schönian, G. 1997. Detection and application of DNA polymorphism to identify species and strains of *Candida* and to analyze the population structure of *C. albicans*." *Microbiol. Cult. Coll.* 13:11-20.
37. Lewis, L. A., B. D. Mishler, and R. Vilgalys. 1997. Phylogenetic relationships of the liverworts (Hepaticae), a basal embryophyte lineage, inferred from nucleotide sequence data of the chloroplast gene, *rbcL*. *Mol. Biol. Evol.* 14: 377-393..
38. Cubeta, M. A., and R. Vilgalys. 1997. Population biology of the *Rhizoctonia solani* complex. *Phytopathology* 87:480-484.
39. McPartland, J. M., R. J. Vilgalys, and M. A. Cubeta. 1997. Mushroom Poisoning. *American Family Physician* 55:1797-1809.
40. Xu, J., R. Vilgalys, and T. G. Mitchell. 1998. Colony size can be used to determine the MIC of fluconazole for pathogenic yeasts. *J. Clin. Microbiol.* 36: 2383-2385.
41. Johnson, J., and R. Vilgalys. 1998. Phylogenetic systematics of *Lepiota* sensu lato based on nuclear large subunit rDNA evidence. *Mycologia* 90: 971-979.
42. Xu, J., T. G. Mitchell, and R. Vilgalys. 1999. PCR-restriction fragment length polymorphism (RFLP) analyses reveal both extensive clonality and local genetic differentiation in *Candida albicans*. *Mol. Ecol.* 8: 59-73.
43. Xu, J., R. Vilgalys, and T. G. Mitchell. 1999. Lack of genetic differentiation between two geographic samples of *Candida albicans* isolated from patients infected with HIV. *J. Bact.* 181: 1369-1373.
44. Gräser, Y., M. El Fari, R. Vilgalys, A. F. A. Kuijpers, G. S. De Hoog, W. Presber, and H.-J. Tietz. 1999. Phylogeny and taxonomy of the family Arthrodermataceae (dermatophytes) using sequence analysis of the ribosomal ITS region. *Medical Mycology* 37: 105-114.
45. Baroni, T. J., N. W. Legon, R. Vilgalys, and D. J. Lodge. 1999. *Caolyche cyanea* - a rare and beautiful agaric is discovered in Puerto Rico. *Mycologist* 13: 7-10.
46. Drehmel, D., J.-M. Moncalvo, and R. Vilgalys. 1999. Molecular phylogeny of *Amanita* based on large subunit ribosomal DNA sequences: implications for taxonomy and character evolution. *Mycologia* 91: 610-618.
47. Hopple, J. S., Jr., and R. Vilgalys. (1999). Phylogenetic relationships in the mushroom genus *Coprinus* and dark-spored allies based on sequence data from the nuclear gene coding for the large ribosomal subunit RNA: divergent domains, outgroups and monophyly. *Molec. Phylog. Evol.* 13: 1-19.
48. Forche, A, G. Schönian, T. G. Mitchell, R. Vilgalys and Y. Gräser (1999). Structure of typical and atypical populations of *Candida albicans* from Africa. *Fungal Genetics and Biology* 28: 107-125.
48. James, T. Y., D. Porter, J. L. Hamrick, and R. Vilgalys. 1999. Evidence for limited intercontinental gene flow in the cosmopolitan mushroom, *Schizophyllum commune*. *Evolution* 53: 1665-1677.
49. Moncalvo, J.-M., Lutzoni, F. M., Rehner, S. A., Johnson, J., and R. Vilgalys. 2000. Phylogenetic relationships of agaric fungi based on large ribosomal subunit DNA sequences. *Systematic Biology* 49: 278-305.

50. Isikhuemen, O., J.-M. Moncalvo, and R. Vilgalys (2000). Mating compatibility and phylogeography in *Pleurotus tuberregium* (Fr.) Sing. *Mycological Research* 104: 732-737.
51. Thorn, R. G., J.-M. Moncalvo, C. A. Reddy, and R. Vilgalys. 2000. Phylogenetic analyses and the distribution of nematophagy support a monophyletic Pleurotaceae within the polyphyletic pleurotoid-lentinoid fungi. *Mycologia* 92: 241-252.
52. Pringle, A., J.-M. Moncalvo, and R. Vilgalys. 2000. High levels of variation in ribosomal DNA sequences within and among spores of a natural population of the arbuscular mycorrhizal fungus *Acaulospora colossica*. *Mycologia* 92: 259-268
53. James, T. Y., D. Porter, C. A. Leander, R. Vilgalys, and J. E. Longcore. 2000. Molecular phylogenetics of the Chytridiomycota support the utility of ultrastructural data in chytrid systematics. *Canad. J. Bot.* 78: 336-350.
54. Moncalvo, J.-M., D. Drehmel, and R. Vilgalys. 2000. Variation in modes and rates of evolution in nuclear and mitochondrial ribosomal DNA in the mushroom genus *Amanita* (Agaricales, Basidiomycota): phylogenetic implications. *Molecular Phylogenetics and Evolution* 16:48-63.
55. Xu, J., A. R. Ramos, R. Vilgalys, and T. G. Mitchell. 2000. Clonal and spontaneous origins of fluconazole resistance in *Candida albicans*. *J. Clin. Microbiol.* 38: 1214-1220.
56. Xu, J., R. Y. Ali, D. A. Gregory, D. Amick, S. E. Lambert, H. J. Yoell, R. J. Vilgalys, T. G. Mitchell. 2000. Uniparental mitochondrial transmission in sexual crosses in *Cryptococcus neoformans*. *Curr. Microbiol.* 40: 269-273.
57. Isikhuemhen, O.S., Nerud F., Vilgalys R. 2000. Cultivation studies on wild and hybrid strains of *Pleurotus tuberregium* (Fr.) Sing. on wheat straw substrate. *World J. Microb Biotech.* 16:431-435.
58. Hughes, K.W., Petersen, R.H., Johnson, J.E., Moncalvo, J.-M., Vilgalys, R., Redhead, S., Thomas, T., and McGhee, L.L. 2000. Infrageneric phylogeny of *Collybia* ss. str. based on sequences of ribosomal ITS and LSU regions. *Mycological Research* 105: 164-172.
59. Redhead, S.A., Seifert, K. A., Vilgalys, R. & Moncalvo, J.-M. 2000. Rhacophyllus and *Zerovaemyces* - teleomorphs or anamorphs? *Taxon* 49: 789-798.
60. Redhead, S.A., R. Vilgalys, J.-M. Moncalvo, J. Johnson, and J.S. Hopple, Jr. 2000. *Coprinus* Persoon and the disposition of *Coprinus* species sensu lato. *Taxon* 50:203-241.
61. Xu, J., R. Vilgalys, and T. G. Mitchell. 2000. Multiple gene genealogies reveal recent dispersion and hybridization in the human pathogenic fungus *Cryptococcus neoformans*. *Mol. Ecol.* 9: 1471-1481.
62. Redhead, S.A., Vilgalys, R., Moncalvo, J.-M., Johnson, J. & Hopple, J.S. 2001. (1473-1474) Proposals to conserve the name *Psathyrella* (Fr.) Quel. with a conserved type and to reject the name *Pselliophora* P. Karst. (Basidiomycetes: Psathyrellaceae). *Taxon* 50: 275-277.
63. Forche, A., J. Xu, R. Vilgalys, and T. G. Mitchell. 2001. Development and characterization of a genetic linkage map of *Cryptococcus neoformans* var. *neoformans* using amplified fragment length polymorphisms and other markers. *Fungal Genetics and Biology* 31:189-203
64. James, T. Y., J.-M. Moncalvo, S. Li and R. Vilgalys. 2001. Polymorphism at the ribosomal DNA spacers and its relation to breeding structure of the widespread mushroom *Schizophyllum commune*. *Genetics* 157:149-161.
65. McEwen, J. G., J. W. Taylor, D. Carter, J. Xu, M. S. S. Felipe, R. Vilgalys, T. G. Mitchell, T. Kasuga, T. White, T. Bui, and C. M. A. Soares. 2000. Molecular typing of pathogenic fungi. *Medical Mycology* 38SI: 189-197.
66. Kües, U., T. Y. James, R. Vilgalys, and M. P. Challen. 2001. The chromosomal region containing *pab-1*, *mip*, and the A mating locus of the secondarily homothallic homobasidiomycete *Coprinus bilanatus*. *Curr. Genet.* 39: 16-24.
67. James, T. Y., and R. Vilgalys. 2001. Abundance and diversity of *Schizophyllum commune* spore clouds in the Caribbean detected by selective sampling. *Molecular Ecology* 10: 471-479.
68. Mueller, G. M., Q.-X. Wu, Y.-Q. Huang, S.-Y. Guo, R. Aldana-Gomez and R. Vilgalys. 2001. Assessing biogeographic relationships between North American and Chinese macrofungi. *J. Biogeography* 28: 271-282.
69. Gonzalez, D., D. E. Carling, S. Kuninaga, R. Vilgalys, M. A. Cubeta. 2001. Ribosomal DNA

- systematics of *Ceratobasidium* and *Thanatephorus* with *Rhizoctonia* anamorphs *Mycologia* 93: 1138–1150.
70. Peintner, U., N. L. Bougher, M. A. Castellano, J.-M. Moncalvo, M. M. Moser, J. M. Trappe, and R. Vilgalys. 2001. Multiple origins of sequestrate fungi related to *Cortinarius* (Cortinariaceae). *American Journal of Botany* 88: 2168-2179
 71. Ceresini, P. C., H. D. Shew, R. J. Vilgalys and M. A. Cubeta. 2002. Genetic diversity of *Rhizoctonia solani* AG-3 from potato and tobacco in North Carolina. *Mycologia* 94: 437-449.
 71. Ceresini, P. C., H. David Shew, R. J. Vilgalys, U. L. Rosewich and M. A. Cubeta. 2002. Genetic structure of populations of *Rhizoctonia solani* AG-3 on potato in eastern North Carolina. *Mycologia* 94: 450-460.
 72. Henkel, T. W., J. Terborgh, and R. J. Vilgalys. 2002. Ectomycorrhizal fungi and their leguminous hosts in the Pakaraima Mountains of Guyana. *Mycological Research* 106:515-531
 73. Moncalvo, J. M., R. Vilgalys, S. A. Redhead, J. E. Johnson, T. Y. James, M. C. Aime, V. Hofstetter et al. 2002. One hundred and seventeen clades of euagarics. *Molecular Phylogenetics and Evolution* 23:357-400.
 74. Peintner, U., E. Horak, M. M. Moser, and R. Vilgalys. 2002. Phylogeny of *Rozites*, *Cuphocybe* and *Rapacea* inferred from ITS and LSU rDNA sequences. *Mycologia* 94: 620-629.
 75. Peintner, U., Horak, E., Moser, M. and Vilgalys, R. (2002). *Rozites*, *Cuphocybe* and *Rapacea* are taxonomic synonyms of *Cortinarius*: New combinations and new names. *Mycotaxon* **83**, 447-451.
 76. Peintner, U., M. Moser, and R. Vilgalys. 2002. *Thaxterogaster* is a taxonomic synonym of *Cortinarius*: New combinations and new names. *Mycotaxon* 81:177-184.
 77. Redhead, S. A., J. M. Moncalvo, R. Vilgalys, and F. Lutzoni. 2002. Phylogeny of agarics: Partial systematics solutions for bryophilous omphalinoid agarics outside of the Agaricales (euagarics). *Mycotaxon* 82:151-168.
 78. Xu, J., G. Luo, R. J. Vilgalys, M. E. Brandt and T. G. Mitchell. 2002. Multiple origins of hybrid strains of *Cryptococcus neoformans* with serotype AD. *Microbiology* 148: 203-212.
 79. Hofstetter, V., Clemençon, H., Vilgalys, R. and Moncalvo, J. M. (2002). Phylogenetic analyses of the Lyophylleae (Agaricales, Basidiomycota) based on nuclear and mitochondrial rDNA sequences. *Mycological Research* **106**, 1043-1059.
 80. Redhead, S. A., Lutzoni, F., Moncalvo, J. M. and Vilgalys, R. (2002). Phylogeny of agarics: Partial systematics solutions for core omphalinoid genera in the Agaricales (euagarics). *Mycotaxon* **83**, 19-57.
 81. Morehouse EA, James TY, Ganley ARD, Vilgalys R, Berger L, Murphy PJ, Longcore JE (2003) Multilocus sequence typing suggests the chytrid pathogen of amphibians is a recently emerged clone. *Molecular Ecology* **12**, 395-403
 82. Ceresini, P. C., Shew, H. D., Vilgalys, R. J., Gale, L. R. and Cubeta, M. A. (2003). Detecting migrants in populations of *Rhizoctonia solani* anastomosis group 3 from potato in North Carolina using multilocus genotype probabilities. *Phytopathology* **93**, 610-615.
 83. Davis, E. C., Franklin, J. B., Shaw, A. J. and Vilgalys, R. (2003). Endophytic *Xylaria* (Xylariaceae) among liverworts and angiosperms: Phylogenetics, distribution, and symbiosis. *American Journal of Botany* **90**, 1661-1667.
 84. Pringle, A., Moncalvo, J. M. and Vilgalys, R. (2003). Revisiting the rDNA sequence diversity of a natural population of the arbuscular mycorrhizal fungus *Acaulospora colossica*. *Mycorrhiza* **13**, 227-231.
 85. James, T. Y., Kues, U., Rehner, S. A. and Vilgalys, R. (2004). Evolution of the gene encoding mitochondrial intermediate peptidase and its cosegregation with the A mating-type locus of mushroom fungi. *Fungal Genetics and Biology* **41**, 381-390.
 86. James, T. Y., Liou, S. R. and Vilgalys, R. (2004). The genetic structure and diversity of the A and B mating-type genes from the tropical oyster mushroom, *Pleurotus djamor*. *Fungal Genetics and Biology* **41**, 813-825.
 87. Lutzoni, F., F. Kauff, C. J. Cox, D. McLaughlin, G. Celio, B. Dentinger, M. Padamsee, D. Hibbett, T.

- Y. James, E. Baloch, M. Grube, V. Reeb, V. Hofstetter, C. Schoch, A. E. Arnold, J. Miadlikowska, J. Spatafora, D. Johnson, S. Hambleton, M. Crockett, R. Shoemaker, S. Hambleton, M. Crockett, R. Shoemaker, G. H. Sung, R. Lucking, T. Lumbsch, K. O'Donnell, M. Binder, P. Diederich, D. Ertz, C. Gueidan, K. Hansen, R. C. Harris, K. Hosaka, Y. W. Lim, B. Matheny, H. Nishida, D. Pfister, J. Rogers, A. Rossman, I. Schmitt, H. Sipman, J. Stone, J. Sugiyama, R. Yahr, and R. Vilgalys. 2004. Assembling the fungal tree of life: Progress, classification and evolution of subcellular traits. *American Journal of Botany* 91:1446-1480.
88. Marra, R. E., Huang, J. C., Fung, E., Nielsen, K., Heitman, J., Vilgalys, R. and Mitchell, T. G. (2004). A genetic linkage map of *Cryptococcus neoformans* variety *neoformans* serotype D (*Filobasidiella neoformans*). *Genetics* **167**, 619-631.
 89. Peintner, U., Moncalvo, J. M. and Vilgalys, R. (2004). Toward a better understanding of the infrageneric relationships in *Cortinatius* (Agaricales, Basidiomycota). *Mycologia* **96**, 1042-1058.
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Book chapters, reviews, opinions, popular articles

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Research Awards and Grants:

current

NSF Genealogy of Life Program. Collaborative Research: The Zygomycetes Genealogy of Life (ZyGoLife)- the conundrum of Kingdom Fungi. (Jason Stajich, PI). (\$40,000/yr, Oct, 2014-Oct 2018). This new project will support a postdoc working on genome-based fungal tree of life. Time effort = 10%

NSF Digital Biological Collections: “The Macrofungi Collection Consortium: Unlocking a Biodiversity Resource for Understanding Biotic Interactions, Nutrient Cycling and Human Affairs”, \$32,329, 07/01/12 - 06/30/15. This is a subcontract to Duke University for databasing of fungal herbarium. Time effort = 1%

NSF-DBI-1046052 (with CI's T Bruns, JW Taylor, and K Peay). "Dimensions: Collaborative Research: Deconstructing diversity and ecosystem function at multiple spatial and genetic scales in a keystone plant-microbe symbiosis". 9/2010-9/2015, \$606,365.00

Oak Ridge National Laboratories PRJ 3831916. "DOE Genomics GTL: Plant-Microbe Interfaces" (DOE grant to conduct research on *Populus* ectomycorrhizae), 4/2010-4/2011 (\$144,988)

Duke Center for the Genomics of Microbial Systems (GeMS): "Microbes and Mines: Community-wide genomic and transcriptomic responses to environmental contamination and implications for environmental health" (with Emily Bernhardt and Jennifer Wernegreen). 2013-2014 (\$25,000)

previous

NSF-DEB-0955904: "Pathogen mediated diversity and response to climate change" (together w/ James Clark, PI) 1/2010-12/2014 (\$593,000)

NIH IR21-AI085331-01A1: "Sexual reproduction and virulence of zygomycete fungi" (with Joseph Heitman, PI). (5/2010-4/2012) (\$41,108).

NSF DEB-0732984: "AFTOL: resolving the evolutionary history of the Fungi". (together with F. Lutzoni, PI). 9/2007-9/2011. (\$950,630)

NSF-DEB-0918730: "Collaborative Research: Ectomycorrhizal fungal diversity of the central Guiana Shield", (together with T.W. Henkel, PI) 9/2009-8/2012. (\$260,000)

NSF DEB 0228668: "ATOL: Collaborative Research: Assembling the Fungal Tree of Life". Francois Lutzoni, PI, R. Vilgalys, CI. 1/03-12/06 (\$360,000)

NSF DEB-0710213: "DISSERTATION RESEARCH: Systematics and Phylogeography of Truffles (Tuber)" (DDIG for Greg Bonito) 6/2007-6/2009. (\$12,000)

DEB0641297: "REVSYS: Phylogenetic and Revisionary Systematics of North American Truffles (Tuber, Ascomycota)" 4/2007-4/2010. \$216,480.00

NSF IRCEB - Emerging wildlife diseases: Threats to amphibian diversity. (J. Collins, U. Northern Arizona, PI). 9/02-8/05. \$80,000 subcontract to study population genetics of *Batrachochytrium*

NSF DEB 0235425: "Collaborative Research: Effects of Elevated CO2 on Forest N Cycling: Assessment with Large-Scale 15N Tracers and Modeling". R. Jackson, PI, R. Vilgalys, CI, 3/03-3/05 (\$90,000)

NIH RO1 AI 25783-09A2: "Studies of *Cryptococcus neoformans* associated with AIDS." (R. Vilgalys, CI with T. G. Mitchell, PI) 8/96-8/2004, (\$188,000 first year direct costs).

NSF MCB-0084207: "A Microbial Observatory in the Duke Forest: Exploring fungal diversity in response to environmental change", 9/00-9/03 (\$412,000).

NSF DEB-0076023: "Phylogenetic systematics and diversity of the Agaricales." (R. Vilgalys, PI, with J. M. Moncalvo, CI) 8/00-7/02, (\$225,000).

NIH RO1 AI 28836-05: "Molecular identification of pathogenic fungi." (R. Vilgalys, CI with T. G. Mitchell, PI) 8/96-8/01, (\$175,672, first year direct costs).

NIH RFA AI-44975-01: Mycology Research Unit (J. R. Perfect, PI): "*Cryptococcus neoformans*: a model for pathogenic fungi", 1/99-1/05, subproject I: Genotypic and phenotypic evolution of *Cryptococcus neoformans* (T. G. Mitchell, PI, R. Vilgalys, CI), (\$113,268, first year direct costs)

NSF Systematic Biology: "PEET: Monographic studies in the Cladoniaceae" (subcontract with Smithsonian Institution, Paula DePriest, PI, R. Vilgalys, CI), 9/97-8/99. (\$65,000 to support graduate training Ph.D. training for Becky Yahr in the Vilgalys lab at Duke University).

NSF IID-0098534 An Environmental Scanning Electron Microscope (ESEM) for Duke University, 9/00-9/04, \$143,748.

NSF DEB 0105031, "Dissertation Research: The Evolution of the A Mating Type Genes in the Mushroom Fungi.", 11/00-11/03. (Tim James, R. Vilgalys, co-PIs), \$5066. Andrew W. Mellon Foundation (together with Systematics Faculty in the Duke Botany Department): A. W. Mellon Training Grant for Systematic Botany, 1996-2000, (\$600,000, est.)

NSF DEB-9708035: "The Agaricales: Molecular systematics and evolution of mushrooms." (R. Vilgalys, PI, with J. M. Moncalvo, CI) 8/97-7/2000, (\$200,003); REU supplement (\$5000) awarded in 1999.

NSF ROA supplement to DEB-9708035: "Molecular ecology of parasitic plants and their mycorrhizal fungi." (R. Vilgalys, PI, with Lorne Wolfe, Ga. Southern Univ., CI) 1999, (\$18,000).

NSF Systematic Biology: "Biogeography and speciation in the oyster mushroom *Pleurotus*." (\$205,000), 10/94-10/97

NSF DEB-9615941: "Competition and Coexistence: The Role of Soil Community Feedback." (subcontract from UC-Riverside, James Bever, PI), 2/99-3/2000, (\$11,227).

NSF Systematic Biology (dissertation improvement grant for François Lutzoni): "Phylogeny in the genus *Omphalina* (Basidiomycota, Agaricales) and the evolutionary consequences of mutualism." (\$10,000), 2/94-2/96

NSF Population Biology and Physiological Ecology: "Genetic analysis of population structure in the oyster mushroom, *Pleurotus ostreatus*." (\$207,000), 10/91-10/94.

NSF Systematic Biology: "A molecular approach to the phylogeny of bryophytes using chloroplast DNA." (PI with B. Mishler) (\$290,000), 7/91-6/94

NIH RO1 AI 28836-01A2 BM1: "Molecular identification of pathogenic fungi." (PI with T. G. Mitchell, Duke Medical Center) (approx. \$600,000 total), 12/91-12/94

NSF Systematic Biology SGER/Collaborative Research (PI with K. P. Steele, Appalachian State University, Boone, NC): "Character Weighting of Nucleotide Sequence Data." (\$18,000), 7/91-1/93

USDA National Research Initiative, Competitive Grants Program: "Genetic identification of pathogenic and non-pathogenic species of *Rhizoctonia*." (\$100,000), 9/91-9/93

Duke University Research Council: "Genetic analysis of population structure in the oyster mushroom *Pleurotus ostreatus*." (\$4000), 6/91-11/92.

NSF Systematic Biology (dissertation improvement grant for John Hopple): "Systematic investigations in the Basidiomycete genus *Coprinus*: Phylogeny, Character evolution, and Development." (\$9,400), 3/91-3/93

North Carolina Board of Science and Technology Science and Engineering Development Award (co-PI with B.D. Mishler): "A molecular approach to the phylogeny of Bryophytes using chloroplast DNA." June 1989 - June 1990. (\$4000).

Duke University Research Council Grant Program (co-PI with N. Christensen, Dept. of Botany): "Population genetics of the chestnut blight fungus (*Endothia parasitica*) and its host, the American chestnut (*Castanea dentata*)." July 1988 - June 1989. (\$1000)

N.S.F. BSR-8806655: "Molecular Systematics of Ribosomal RNA Genes in the Tricholomataceae." June 1988 - June 1991. (\$155,000)

U.S.D.A. Competitive Grants Program Grant 88-37234-4038: "Molecular evolution and systematics of the *Rhizoctonia solani* complex" September 1988 - September 1990. (\$80,000)

North Carolina Biotechnology Center Grant 87-6-02129: "Molecular systematics of agriculturally important fungi." May 1987 - Nov 1988. (\$6000)

NSF Dissertation Improvement Grant BSR-8312901: "Evolutionary Biology and Systematics of the *Collybia dryophila* and *Pleurotus ostreatus* species complexes." (O. K. Miller, Jr., PI). Dec. 1, 1983 to Nov. 30, 1985. (\$8000)

R. Vilgalys- Graduate students postdoctoral associates, and visitors

Graduate students

Current:

Ms. Jessie Uehling (2012-), fungi and their endosymbiotic bacteria
Mr. Nicholas Pun (2013-), fungal population genomics
Mr. George Greene (2014-), fungal genomics and evolution

Previous:

- Mr. Eric Kay, M.S., 1991: Population genetics of the oyster mushroom, *Pleurotus ostreatus* (currently a professional musician in NY)
- Ms. Rosario Briones, M.S., 1991: Nuclear migration and mating behavior in *Rhizoctonia solani*. (currently professor at Pontificia Universidad Catolica del Ecuador)
- Dr. David S. Hibbett, Ph.D., 1991: Molecular systematics of the genus *Lentinus*. (currently professor, Clark University)
- Ms. Dolores Gonzalez, M.S., 1992: Molecular systematics of the *Rhizoctonia solani* complex. (currently director, Molecular Systematics Laboratory, Inst. Ecology and Evolution, University of Vera Cruz, Xalapa, Mexico)
- Dr. John Hopple, Ph.D., 1994: Molecular evolution and systematics of *Coprinus* (currently assoc. professor, Ithaca College, NY)
- Dr. François Lutzoni, Ph.D., 1995 (currently assoc. professor, Dept. of Biology, Duke University)
- Dr. Mary Malik, Ph.D. (co-chair with Mark Rausher), 1996. The genetics and evolution of somatic self/nonself recognition in the oyster mushroom *Pleurotus ostreatus* (currently research fellow, UC-Santa Barbara)
- Dr. Peggy Schultz, Ph.D., 1996 (co-chair with Boyd Strain), Community dynamics of arbuscular mycorrhizal fungi from an old field community. (currently lecturer, Indiana Univ.)
- Dr. Jacqui Johnson, Ph.D., 1997, Molecular systematics of the genus *Lepiota* sensu lato. (currently instructor, Fordham University, NY)
- Dr.. Shian-Ren Liou, Ph.D. 2000: Evolutionary genetics of speciation and intersterility in *Pleurotus* (currently research scientist, SUNY-Stony Brook)
- Dr. Anne Pringle, Ph.D., 2001. (co-advisee w/ J. Antonovics): Genetics of arbuscular mycorrhizal (AM) fungi. (Currently asst. professor, Univ. Wisconsin)
- Dr. Terry Henkel, Ph.D., 2001. Ecology and systematics of neotropical fungi (current: professor, Univ. California, Humboldt)
- Dr.. Annette Golonka, Ph.D., 2002 (co-advisee w/ J. Antonovics): ecology of nectar-inhabiting microorganisms associated with *Silene* (current: Assoc. professor, Univ. South Carolina at Lancaster)
- Dr. Timothy Y. James, Ph.D. 2003, The evolution of mating-type genes in the mushroom fungi (current: Assoc. Prof., Univ. Michigan)
- Mr. Jason Thacker, M.S., 2004, Molecular evolution of laccase genes in *Pleurotus* (working outside mycology)
- Dr. Rebecca Yahr, Ph.D. 2004 (co-advisee w/ P. DePriest), lichen ecology and systematics (asst. curator of lichens, Royal Bot. Garden, Edinburgh)
- Dr. Dolores Gonzalez, Ph.D. 2004 (at Univ. of Mexico, Mexico City; I was major advisor. Currently Director, Molecular Systematics Laboratory, University of Vera Cruz, Xalapa, Mexico)
- Dr. Daniel Henk, coevolution of fungi with scale insects, Ph.D. 2005 (current: asst. professor, Univ. Bristol, UK)
- Dr. Jeri Parrent, global change ecology of mycorrhizal fungi, Ph.D. 2006 (current: NSF fellow, Guelph University, Ontario).
- Dr.. Gregory Bonito, truffle systematics Ph.D. 2009. (current: asst. professor, Michigan State Univ.)
- Dr. Jason Jackson, microbial ecology, Ph.D. 2010. (current: U.S. Forest Service)
- Dr. Michelle Hersh, Duke UPE, fungal ecology, Ph.D. 2010 (current: asst. professor, Sarah Lawrence College).
- Dr. Hannah Reynolds (Ph.D., 2011) fungal phylogeography (current: postdoc, Ohio State Univ.)
- Ms. Elizabeth Pekarek (M.S., 2011), fungal genetics (current: instructor, Duke University)
- Ms. Gwendolyn Williams (Ph.D. 2014), succession in mycorrhizal fungi (current: instructor, Duke Univ.)

Postdoctoral Researchers

- Dr. Steven L. Rehner, Ph.D. Univ. Washington. 1988-89 (current position: Research Scientist, USDA, Beltsville, MD)
- Dr. Louise Lewis, Ph.D. Ohio State University. 1989-92 (current position: Professor, Dept. of Biology, Univ. of Connecticut)
- Dr. Wieland Meyer, Ph.D., Humboldt Universtiy, 1989-92 (current position: Senior Research Scientist, Univ. Sydney, Australia)*
- Dr. Joseph Spatafora, Ph.D. Louisian State Univ., 1992-1994 (current position: Professor, Dept. of Plant Biology, Oregon State Univ.)
- Dr. Marc Cubeta, Ph.D. N. C. State Univ., 1992-1994, (current position: Professor, Dept. of Plant Pathology, NC State University)
- Dr. Wendy Untereiner, Ph.D. Univ. Toronto, 1995-96 (current position: Assoc. professor, Dept. of Biology, Univ. Manitoba)
- Dr. Jianping Xu, Ph.D. Univ. Toronto, 1996-2000 (current position: Assoc. Professor, McMaster, Univ., Hamilton, Ontario)*
- Dr. James Johnson, Ph.D. Univ. Tennessee, 1997-2000 (current: Assoc. Professor, Central Washington Unviersity)
- Dr. Anja Forche, Ph.D. Humboldt University, 1998-2000 (current: Research Professor, Dept. of Biology, Univ. Minnesota) *
- Dr. Jean-Marc Moncalvo, Ph.D. Univ. Lausanne, 1995-2002 (current: Associate Curator, Royal Ontario Museum, Toronto)
- Dr. Austin Ganley, Ph.D. Massey Univ., New Zealand, 2000-2002 (current: Assoc. Professor, Massey University, Albany, NZ)
- Dr. Ursula Peintner, Ph.D. Univ. Innsbruck, 1999-2001 (current position: Assoc. Professor, Institute for Microbiology, Innsbruck)
- Dr. Robert Marra, Ph.D. Cornell Univ., 2000-2004 (current: Research Scientist, Connecticut Agricultural Station, New Haven, CT)
- Dr. Ana Litvintseva, PhD Univ. Montana, 2001-2007 (Current: Research Scientist, Center for Disease Control)
- Dr. Timothy James, Ph.D. Duke Univ., 2003-2006 (current: Assistant Professor, Univ. Michigan)
- Dr. Valerie Hofstetter, Ph.D. Univ. Lausanne, 2002-2006 (current: postdoc, Univ. Lausanne)
- Dr. Terri Porter, Ph.D. Univ. Toronto 2008-2010 (current: postdoc, McMaster Univ.)
- Dr. Matthew Smith, Ph.D. Univ. California-Davis (2009-2011) (current: asst. professor, Univ. Florida)
- Dr. Brantlee Richter, Ph.D. N.C. State University (2010-2011) (current: lecturer, Univ. Florida)
- Dr. Marianela Rodriguez, PhD. Arizona State (2009-2011) (current: res.scientist, BASF)
- Dr. Greg Bonito, PhD. Duke Univ. (2009-2013) (current: asst. professor, Michigan State Univ.)
- Dr. Maria Soledad Benitez, Ph.D. Univ. Wisconsin (2011-2013) (current: USDA Res. Scientist, SD)
- Dr. Andrii Gryganski, Ph.D. Univ. Kiev (2008-2014) (current: res. scientist, Lambert Spawn Co.)
- Dr. Huil-Ling Liou, Ph.D. Univ. Florida (2012-current)
- Dr. Posy Busby, Ph.D. Stanford Univ. (2014-current)

Visiting Scientists

- Dr. Thomas Friedl (Univ. Bayreuth, Germany), visiting scientist, 1989
- Drs. Jan and Brigitta Kohlmeyer (Univ. N. Carolina), 1989-1990, visiting scientists
- Dr. David Porter (Dept. Botany, Univ. Georgia), visiting sabbatical professor, 1995-96
- Dr. Georgios Zervakis (Inst. Kalamata, Greece), visiting scientist, 1995
- Dr. Steven L. Miller (Dept. Botany, Univ. Wyoming), visiting sabbatical professor, 1997-98
- Ms. Ellen Larsson (Univ. Göteborg), visiting scientist, 1997
- Dr. Dennis Drehmel (EPA, retired), visiting professor, 1997-present

Dr. Scott Redhead (Agriculture Canada), visiting scientist, 1998-present
Dr. Martin Schnittler (Fed. Agency for Nature Conservation, Bonn), visiting scientist, 1998
Dr. Lorne Wolfe (Ga. Southern Univ.), adjunct professor, 1998-2002
Dr. Gyongyi Szedlay (Institute of Microbiology, Budapest), visiting scientist, 1999
Dr. Huang Yongqing (Academica Sinica, Beijing), visiting scientist, 1999
Dr. Hack Sung Jung (Univ. Korea, Seoul), visiting sabbatical professor, 2000-2001
Dr. Jordan Zjawiony (Ole Miss. Univ), visiting professor, 2000-2002
Dr. Mary Berbee (Univ. British Columbia), visiting sabbatical professor, 2003-2004
Dr. Wallace Martin (Randolph Macon College), visiting sabbatical professor, 2005-2006
Dr. Merlin White (Univ. Kansas), visiting scientist, 2003-2006
Dr. Renee Johansen (Univ. Auckland), visiting Fulbright scholar, 2013-2014