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Assistant Professor

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Education

- **Ph.D.** (2002) Department of Biological Sciences, Louisiana State University. Dissertation: Molecular Phylogeny of *Melanospora* and Diaporthales, and Population Genetics of Dogwood Anthracnose Fungus.
- **M.S.** (1996) Systematic Mycology and Lichenology Laboratory, Institute of Microbiology, Chinese Academy of Sciences. Thesis: Rust Fungi of the Daba Mountains.
- **B.S.** (1993) Shandong University (China). Major: Microbiology. Thesis: Tryptophan Fermentation Using *Corynebacterium glutanicum* Trp 10 and its Genetics.

Work Experience

- **Assistant Professor**, 2009-present, Department of Plant Biology & Pathology and Department of Biochemistry & Microbiology, **Rutgers University**. 1. Population and evolutionary biology of fungal pathogens of turf and other plants. 2. Development of molecular techniques for the rapid diagnosis of known and emerging plant pathogens.
- **Research Associate**, 2004-2008, Department of Plant Pathology, **Cornell University**, Research projects: 1. Whole genome functional analysis of non-ribosomal peptide synthetases in phytopathogenic fungi, using corn and wheat pathogens as model systems; 2. Development of microarray technology for the rapid diagnosis of known and emerging solanaceous plant pathogens. 3. Mechanism of DMI fungicide resistance of the brown rot pathogen *Monilinia fructicola*.
- **Postdoctoral Research Associate**, 2002-2004, *Fusarium* Research Center, Department of Plant Pathology, **The Pennsylvania State University**. Research project: Molecular phylogeny and population genetics of the *Fusarium solani* species complex.
- **Graduate Teaching Assistant**, 1996-2001, Department of Biological Sciences, **Louisiana State University**. Classes instructed or assisted in instructing: Mycology, Introductory Biology Laboratory, and Plant Biology.

Professional Societies

- Mycological Society of America (1998-present)
- American Phytopathological Society (2001-present)
- American Association for the Advancement of Science (2009-present)
- American Society for Microbiology (2009-present)

Publications

Journal Publications (Corresponding author*)

1. Schoch, C. et al. A DNA barcode for fungi. *Proceedings of the National Academy of Sciences of the United States of America*. Under review.
2. Short, P. G. D., O'Donnell, K. **Zhang, N.**, Juba, J. H., and Geiser, D. M. Widespread occurrence of diverse pathogenic types of the fungus *Fusarium* in bathroom sink drains. *Journal of Clinical Microbiology*. Accepted, Sept 23, 2011.
3. Wu, D., Oide, S., **Zhang, N.**, Choi, M. Y., and Turgeon, B. G. ChLae1 and ChVell regulate T-toxin production, virulence, oxidative stress response, and development of the maize pathogen *Cochliobolus heterostrophus*. *PLoS Pathogens*. Under review.
4. Zhao, S., Clarke, B. B., Shen, Q., Hu, J., Zhang, L., **Zhang, N.*** Development and application of a TaqMan real-time PCR assay for rapid detection of *Magnaporthe poae*. *Mycologia*. Under review.
5. Cai, L., Giraud, T., **Zhang, N.**, Begerow, D., Cai, G., and Shivas, R. G. 2011. The application of species criteria in plant pathogenic fungi. *Fungal Diversity* 50:121–133. DOI: 10.1007/s13225-011-0127-8
6. Rajmohan, N., Gianfagna, T. J., Meca, G., Moretti, A., and **Zhang, N.*** 2011. Molecular identification and mycotoxin production of *Lilium longiflorum*-associated fusaria isolated from two geographic locations in the United States. *European J. Plant Pathology*. 131:631-642. DOI: 10.1007/s10658-011-9838-7
7. **Zhang, N.***, Zhao, S., and Shen, Q. 2011. A six-gene phylogeny reveals the evolution of mode of infection in the rice blast fungus and allied species. *Mycologia*. In press. doi:10.3852/11-022
8. **Zhang, N.***, Tantardini, A., Miller, S., Eng, A., and Salvatore, N. 2011. TaqMan real-time PCR method for detection of *Discula destructiva* that causes dogwood anthracnose in Europe and North America. *European J. Plant Pathology* 130:551–558. DOI: 10.1007/s10658-011-9777-3

9. Hawksworth, D. L. et al. and **Zhang, N.** 2011. The Amsterdam Declaration on Fungal Nomenclature. *IMA Fungus* 2:105-112. doi:10.5598/ima fungus.2011.02.01.14
10. Njambere, E. N., Clarke, B. B., and **Zhang, N.*** 2011. Dimeric oligonucleotide probes enhance diagnostic microarray performance. *J. Microbiological Methods* 86: 52-61. DOI:10.1016/j.mimet.2011.03.015
11. Njambere, E. N., Clarke, B. B., Bonos, S. A., Murphy, J. A., Buckley, R., Tirpak, S. and **Zhang, N.*** 2011. First Report of Brown Ring Patch Caused by *Waitea circinata* var. *circinata* on *Poa annua* and *Agrostis stolonifera* in New Jersey. *Plant Disease* 95(1): 78-79. DOI: 10.1094/PDIS-08-10-0606
12. O'Donnell, K., Sutton, D. A., Rinaldi, M. G., Sarver, B.A., Balajee, S.A., Schroers, H-J, Summerbell, R.C., Robert, V.A., Crous, P. W., **Zhang, N.**, Aoki, T., Jung, K., Park, J., Lee, Y-H., Kang, S. and Geiser, D. M. 2010. An internet-accessible DNA sequence database for identifying fusaria from human and animal infections. *J. Clinical Microbiology* 48(10): 3708-3718. DOI: 10.1128/JCM.00989-10
13. Molnar, T., Capik, J., Zhao, S., and **Zhang, N.** 2010. First report of Eastern Filbert Blight on *Corylus avellana* 'Gasaway' and 'VR20-11' caused by *Anisogramma anomala* (Peck) E. Müller in New Jersey. *Plant Disease* 94(10): 1265. DOI: 10.1094/PDIS-06-10-0445
14. **Zhang, N.*** 2009. Leaf-inhabiting genera of the Gnomoniaceae, Diaporthales, a book review. *Inoculum* 60: 61.
15. O'Donnell, K., Sutton, D. A., Fothergill, A., McCarthy, D., Brandt, M., **Zhang, N.** and Geiser, D. M. 2008. Molecular phylogenetic diversity, multilocus haplotype nomenclature, and in vitro antifungal resistance within the *Fusarium solani* species complex. *Journal of Clinical Microbiology* 46:2477-2490.
16. Bidartondo M. I., Bruns, T. D., Blackwell, M., Edwards, I., Taylor, A. F., Horton, T., **Zhang, N.** et al. 2008. Preserving accuracy in GenBank. *Science* 319:1616.
17. **Zhang, N.**, McCarthy, M. L., and Smart, C. D. 2008. A microarray system for the detection of multiple fungal and oomycete pathogens of solanaceous crops from field samples. *Plant Disease* 92:953-960.
18. Gilbert, C. A., **Zhang, N.**, Hutmacher, R. B., Davis, R. M., and Smart, C. D. 2008. Development of a DNA-based microarray for the detection and identification of *Fusarium oxysporum* f. sp. *vasinfectum* in cotton tissue. *Journal of Cotton Science* 12(2):165-170.
19. Pokharel, R. R., Abawi, G. S., **Zhang, N.**, Duxbury, J. M., and Smart, C. D. 2007. Characterization of isolates of *Meloidogyne* from rice-wheat production fields in Nepal. *Journal of Nematology* 39(3):221-230.

20. **Zhang, N.**, Geiser, D. M., and Smart, C. D. 2007. Macroarray detection of solanaceous plant pathogens in the *Fusarium solani* species complex. *Plant Disease* 91:1612-1620.
21. Hibbett, D. S., Binder, M., Bischoff, J. F., Blackwell, M., Cannon, P. F., Eriksson, O., Huhndorf, S., James, T., Kirk, P. M., Lücking, R., Lumbsch, T., Lutzoni, F., Matheny, P. B., McLaughlin, D. J., Powell, M. J., Redhead, S., Schoch, C. L., Spatafora, J. W., Stalpers, J. A., Vilgalys, R., Aime, C., Aptroot, A., Bauer, R., Begerow, D., Benny, G. L., Castlebury, L. A., Crous, P. W., Dai, Y.-C., Gams, W., Griffith, G. W., Hawksworth, D., Hofstetter, V., Hosaka, K., Humber, R. A., Hyde, K., Kõljalg, U., Kurtzman, C. P., Larsson, K.-H., Lichtwardt, R., Longcore, J., Miller, A., Moncalvo, J.-M., Mozley-Standridge, S., Oberwinkler, F., Parmasto, E., Rogers, J. D., Ryvarden, L., Sampaio, J. P., Schuessler, A., Sugiyama, J., Taylor, J. W., Thorn, R. G., Tibell, L., Untereiner, W. A., Walker, C., Wang, Z., Weir, A., Weiss, M., White, M., Winka, K., Yao, Y.-J., and **Zhang, N.** 2007. A higher-level phylogenetic classification of the fungi. *Mycological Research* 111:509-547.
22. **Zhang, N.**, Castlebury, L. A., Miller, A. N., Huhndorf, S. M., Schoch, C., Seifert, K. A., Rossman, A. Y., Rogers, J. D., Kohlmeyer, J., Volkmann-Kohlmeyer, B., and Sung, G.-H. 2006. An overview of the systematics of the Sordariomycetes based on a four-gene phylogeny. *Mycologia* 98: 1077-1088. (*Invited lead author*)
23. **Zhang, N.**, O'Donnell, K., Sutton, D. A., Nalim, A., Samuels, G. J., Summerbell, R. C., Padhye, A. A., and Geiser, D. M. 2006. Members of the *Fusarium solani* species complex causing infections in both humans and plants are common in the environment. *Journal of Clinical Microbiology* 44:2186-2190.
24. Tantardini, A., Calvi, M., Cavagna, B., **Zhang, N.**, and Geiser, D. M. 2004. Primo rinvenimento in Italia di antracnosi causata da *Discula destructiva* su *Cornus florida* e *C. nuttallii*. *Informatore Fitopatologico* 12:44-47.
25. Geiser, D. M., Jiménez-Gasco, M., Kang, S., Makalowska, I., Veeraraghavan, N., Ward, T. J., **Zhang, N.**, Kuldau, G. A., and O'Donnell, K. 2004. FUSARIUM-ID v. 1.0: A DNA Sequence Database for Identifying *Fusarium*. *European Journal of Plant Pathology* 110: 473-479.
26. **Zhang, N.**, Suh, S.-O., and Blackwell, M. 2003. Microorganisms in the gut of beetles: evidence from molecular cloning. *Journal of Invertebrate Pathology* 84: 226-233.
27. **Zhang, N.** and Blackwell, M. 2002. Population structure of dogwood anthracnose fungus. *Phytopathology* 92: 1276-1283.
28. **Zhang, N.** and Blackwell, M. 2002. Molecular phylogeny of *Melanospora* Corda and similar pyrenomycetous fungi. *Mycological Research* 106: 148-155.
29. **Zhang, N.** and Blackwell, M. 2001. Molecular phylogeny of dogwood anthracnose fungus (*Discula destructiva*) and the Diaporthales. *Mycologia* 93:356-364.

30. **Zhang, N.**, Zhuang, J.-Y., and Wei, S.-X. 1997. Rust fungi of the Daba Mountains. *Mycotaxon* 61: 49-79.

Online Peer-Reviewed Publications

- **Zhang, N.***. 2007. Melanosporales. Version 20 November 2007 (under construction). <http://tolweb.org/Melanosporales/57149/2007.11.20> in *The Tree of Life Web Project*, <http://tolweb.org/>
- **Zhang, N.*** and Sung, G-H. 2008. Sordariomycetes. Version 14 January 2008 (under construction) <http://tolweb.org/Sordariomycetes/29050/2008.01.14> in *The Tree of Life Web Project*, <http://tolweb.org/>

Book Chapter

- **Zhang N.*** and Wang Z. Sordariomycetes and Leotiomycetes. Systematics and Evolution. In *The Mycota* VII 2nd edition, Eds. D. J. McLaughlin and J. W. Spatafora. Springer-Verlag. (*invited lead and corresponding author) (In preparation)
- B. Gillian Turgeon, Bradford Condon, Jinyuan Liu, and **Ning Zhang**. 2010. Protoplast Transformation of Filamentous Fungi. Pp. 3-20. In *Molecular and Cell Biology Methods for Fungi*, Methods in Molecular Biology series. Amir Sharon ed. Humana Press.

Conference Presentations (selected)

- **N. ZHANG** and S. Zhao. Evolution of mode of infection in the rice blast fungus and allied species. Phytopathology 101:S202. American Phytopathological Society Meeting.
- E. N. NJAMBERE, F. Wong, B. B. Clarke, **N. Zhang**. 2011. Development of microsatellite markers for population genetic analysis of *Waitea circinata* var. *circinata*. Phytopathology 101:S129. American Phytopathological Society Meeting.
- T. J. MOLNAR and **N. Zhang**. 2011. Application of a real-time PCR assay for detection of eastern filbert blight in hazelnut breeding. Phytopathology 101:S123. American Phytopathological Society Meeting.
- S. ZHAO, B. B. Clarke, Q. Shen, J. Hu, **N. Zhang**. 2011. Development and application of a TaqMan real-time PCR assay for rapid detection of *Magnaporthe poae*. Phytopathology 101:S204. American Phytopathological Society Meeting.
- L. A. Beirn, E. N. Njambere, **N. Zhang**, B. B. Clarke, J. CROUCH. 2011. Turfgrass diagnostics and new, advanced technologies. Phytopathology 101:S211. American Phytopathological Society Meeting.

- Zhao, S., Zhang, L., Clarke, B. B., and **Zhang, N.** 2010. Development and application of a TaqMan real-time PCR assay for rapid detection of *Magnaporthe poae*, the summer patch pathogen of turfgrass. *Rutgers University Microbiology Symposium*.
- Njambere, E. N., Clarke, B. B., and **Zhang, N.** 2011. Dimeric oligonucleotide probes enhances diagnostic macroarray performance. *Rutgers University Center For Turfgrass Science Symposium*.
- Njambere, E. N., Clarke, B. B., and **Zhang, N.** 2010. Macroarray detection of fungal turfgrass pathogens. *Phytopathology* 100: S90.
- Zhao, S., Shen, Q., Clarke, B. B., and **Zhang, N.** 2010. Assessing fungicide effects on turfgrass soil fungal communities. *International Mycological Congress*, Edinburgh, UK.
- Njambere, E. N., Clarke, B. B., and **Zhang, N.** 2010. Molecular detection of fungal turfgrass pathogens using DNA macroarray. *Rutgers University Center For Turfgrass Science Symposium*.
- **Zhang, N.**, Condon, B., Horwitz, B. A., Liu, J., and Turgeon, B. G. Functional characterization of *SREA* in *Cochliobolus heterostrophus*. 2009. *Phytopathology* 99:S149.
- Eng, A. Salvatore, N. and **Zhang, N.** Molecular detection of dogwood anthracnose fungus. Mycological Society of America. July 2009.
- **Zhang, N.**, McCarthy, M. L., and Smart, C. D. A macroarray system for the detection of multiple fungal and oomycete pathogens of solanaceous crops from field samples. Mycological Society of America August 2007. (*Invited Symposium Presentation*)
- **Zhang, N.** and Smart, C. D. Macroarray detection of known and emerging fungal and oomycete pathogens on solanaceous crops. 2006. *Phytopathology* 96:S129.
- Parker, D. M., **Zhang, N.**, Smart, C. D., and Koeller, W. D. Polymorphism of 14 alpha-demethylase gene (*CYP51*) in brown rot pathogen *Monilinia fructicola* from a resistant orchard in New York State. 2006. *Phytopathology* 96:S90.
- **Zhang, N.**, Castlebury, L. A., Miller, A. N., Huhndorf, S. M., Schoch, C., Seifert, K. A., Rossman, A. Y., Rogers, J. D., Kohlmeyer, J., Volkmann-Kohlmeyer, B., and Sung, G-H. An overview of the systematics of the Sordariomycetes based on a four-gene phylogeny. (Invited Presentation) Deephypha (A Phylogeny for Kingdom Fungi) meeting, Baton Rouge, LA, February 2006.
- **Zhang, N.**, Geiser, D. M., and Smart, C. D. 2005. Molecular detection of *Fusarium solani* species complex using a macroarray. *Phytopathology* 95:S98.
- **Zhang, N.**, Geiser, D. M., and Smart, C. D. Molecular detection of members of the *Fusarium solani* species complex using a macroarray. Mycological Society of America annual meeting, Hilo, HI, July-August 2005.

- **Zhang, N.,** Nalim, A., Sutton, D.A., Epstein, L., O'Donnell, K., and Geiser, D. M. Association of Clinical, Environmental and Plant Pathogenic Isolates Within the *Fusarium solani* Species Complex. Mycological Society of America annual meeting, Asheville, NC, July 2004.
- **Zhang, N.,** Geiser, D. M., and O'Donnell, K. An elongation factor database of the *Fusarium solani* species complex. Mycological Society of America annual meeting, Asilomar, CA, July 2003.
- **Zhang, N.** and Blackwell, M. 2001. Population Genetics of Dogwood Anthracnose Fungus (*Discula destructiva* Redlin). Mycological Society of America annual meeting, Salt Lake City, UT, August-September 2001.
- **Zhang, N.** and Blackwell, M. 2000. Molecular Phylogeny of dogwood anthracnose fungus and the Diaporthales. Mycological Society of America annual meeting, Burlington, VT, July-August 2000.
- **Zhang, N.** and Blackwell, M. 1999. Molecular phylogeny of *Melanospora* Corda and similar pyrenomycetous fungi. XVI International Botanical Congress, St. Louis, MO, August 1999.

Other Presentations (not listed above):

- Biochemistry and Microbiology Department, Rutgers University, Mini-Symposium. January 30, 2009. Molecular phylogeny and array detection of *Fusarium solani*
- Ecology, Evolution, and Natural Resources Department, Rutgers University, Graduate Program. October 8, 2009. Population and evolutionary biology of fungal pathogens.

Teaching:

Fall 2009, Fall 2010 and Fall 2011: ***Introduction to Plant Biology***, 16:765:501 core course in the Plant Biology graduate curriculum, 3 credits.

Spring 2010 and Spring 2011: ***Molecular Genetics Lab***, 11:126:482 Biotech undergraduate core course. 3 credits.

Guest Lectures:

Fall 2009 and Fall 2010: ***Fungi in the Environment*** 11:770:402

Fall 2010: ***Seminar in Microbial Biology*** 16:682:520

Spring 2011: ***Plant Pathogenesis*** 16: 765:538

Honors and Awards

Research

- Participant of the project “Biology, Ecology and Management of Emerging Pests of Annual Bluegrass on Golf Courses”, which received a Northeast Award for Excellence in Multistate Research from the Northeastern Regional Association (NERA) of State Agricultural Experiment Station Directors. 2011.
- C. W. Edgerton Honor Award, Louisiana State University, Department of Biological Sciences. 2002.
- E. S. Luttrell Travel Award, Mycological Society of America, "Population genetics of dogwood anthracnose fungus (*Discula destructiva* Redlin). August 2001.
- Uecker Travel Award, Mycological Society of America, "Molecular phylogeny of dogwood anthracnose fungus and the Diaporthales," June 2000.
- Graduate School Special Achievement Award, Louisiana State University Graduate Student Association, February 2000.
- McDaniel Scholarship, Louisiana State University, February 2000.
- Graduate Research Prize, Mycological Society of America, “Molecular phylogeny of *Melanospora* Corda and similar pyrenomycetous fungi”. August 1999.
- Sigma Xi Grant-in-Aid of Research, Honorable Mention Award, “Population genetic studies of the dogwood anthracnose fungus (*Discula destructiva* Redlin)”. April 1999.

Teaching

- William J. Luke Award. Given annually to a teaching assistant in the plant biology program for outstanding instruction, Department of Biological Sciences, Louisiana State University, May 2001.
- Freshman Biology Award. Given annually to a teaching assistant in the biological sciences for outstanding instruction in freshman biology laboratories, Department of Biological Sciences, Louisiana State University, May 2001.