

Ning Zhang
Professor

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Education

Ph.D. (2002) Department of Biological Sciences, Louisiana State University.
M.S. (1996) Systematic Mycology and Lichenology Laboratory, Institute of Microbiology, Chinese Academy of Sciences.
B.S. (1993) Shandong University (China). Major: Microbiology.

Academic Positions

Professor, 2020-present, Department of Plant Biology and Department of Biochemistry & Microbiology, **Rutgers University**.
Associate Professor, 2015-2020, Department of Plant Biology and Department of Biochemistry & Microbiology, **Rutgers University**.
Assistant Professor, 2009-2015, Department of Plant Biology & Pathology and Department of Biochemistry & Microbiology, **Rutgers University**.
Research Associate, 2004-2008, Department of Plant Pathology, **Cornell University**,
Postdoctoral Research Associate, 2002-2004, *Fusarium* Research Center, Department of Plant Pathology, **The Pennsylvania State University**.

Honors and Awards

Research Awards

1. Rutgers **Patent Award**, Office of Research Commercialization, **2023, 2017**.
2. **Chancellor's Scholar**, Rutgers University, **2016**.
3. **National Science Foundation CAREER Award**. **2015**.
4. **The Board of Trustees Research Fellowship for Scholarly Excellence**, Rutgers University, **2015**.
5. **Young Investigator Award**, Theobald Smith Society, New Jersey Branch of the American Society for Microbiology. **2013**.
6. **Northeast Award for Excellence in Multistate Research**, Northeastern Regional Association (NERA) of State Agricultural Experiment Station Directors. Participant of the project NE1025 "Biology, Ecology and Management of Emerging Pests of Annual Bluegrass on Golf Courses". **2011**.
7. **"Best of the Best" Team Award**, Rutgers Cooperative Extension, participant of the project: "Integrated Program for Management of Emerging Pests of Annual Bluegrass on Golf Courses". **2011**.
8. **Fungal Environmental Sampling and Informatics Network Travel Award** (an NSF funded research network project). **2010**.
9. **C. W. Edgerton Honor Award**, Louisiana State University. **2002**.
10. **E. S. Luttrell Travel Award**, Mycological Society of America. **2001**.
11. **Uecker Travel Award**, Mycological Society of America. **2000**.

12. **Graduate School Special Achievement Award**, Louisiana State University Graduate Student Association. **2000**.
13. **McDaniel Scholarship**, Louisiana State University. **2000**.
14. **Graduate Research Prize**, Mycological Society of America. **1999**.
15. **Sigma Xi Grant-in-Aid of Research**, Honorable Mention Award. **1999**.

Teaching Awards

1. **William J. Luke Award**. Given annually to a teaching assistant in the plant biology program for outstanding instruction, Louisiana State University. **2001**.
2. **Freshman Biology Award**. Given annually to a teaching assistant in the biological sciences for outstanding instruction in freshman biology laboratories, Louisiana State University. **2001**.

Awards Won by Mentored Students

1. Alexis Faulborn, Rutgers Department of Plant Biology Student Travel Award (2023), \$1,000
2. Alexis Faulborn, Rutgers Climate Institute Travel Award (2023), \$400
3. Glen Groben, Spencer Davis Award (2022): \$2,000
4. Glen Groben, 1st place oral presentation award, Northeastern Division of APS annual meeting (2021).
5. Peninah Engel, Plant Biology Graduate Student Travel Award (2019): \$250
6. Glen Groben, Plant Biology Graduate Student Travel Award (2018): \$200
7. Peninah Engel, Plant Biology Graduate Student Travel Award (2018): \$200
8. Glen Groben, Peter S. Loft Memorial Scholarship, Rutgers Center for Turfgrass Science (2017): \$1,000
9. Molly Bindell, Caroline Thorn Kissel Summer Environmental Studies Scholarship, Garden Club of America (2016): Awarded \$3,000
10. Molly Bindell, Military Spouse Scholarship, National Military Family Association (2016, 2017): Awarded \$2,000
11. Molly Bindell, Fall 2015 Professional Development Fund (2015): Awarded \$693
12. Molly Bindell, Summer 2015 Professional Development Fund (2015): Awarded \$2,000
13. Stephen Miller (lab PhD student), Clark T. Rogerson Student Research Award (\$1000), Mycological Society of America. 2013.
14. Stephen Miller, New Jersey Mycological Society Scholarship (\$1200). 2012.
15. Stephen Miller, National Science Foundation FESIN Travel Award (\$1000). 2011.
16. Stephen Miller, Graduate Travel Award Rutgers University (\$500). 2011

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| SCHOLARSHIP |
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Citations: 16110, H-Index: 37

PUBLICATIONS

* Corresponding author

† student/postdoc/technician/researcher in N. Zhang lab

Books

1. Luo J†, **Zhang N***. **2022**. The Rice Blast Fungus and Allied Species: A Monograph of the

Fungal Order *Magnaporthales*. **APS Press**. 164 pp. ISBN: 978-0-89054-682-6

Book Chapters

1. **Zhang N***, Luo J†, Bhattacharya D. **2017**. Advances in fungal phylogenomics and their impact on fungal systematics. *Advances in Genetics* 100: 309-328. <https://doi.org/10.1016/bs.adgen.2017.09.004>
2. **Zhang N***, Baird RE, Trigiano RN. **2016**. Plant Pathogenic Species of the *Ascomycota*: *Pezizomycotina*. Pp. 205-220. In *Plant Pathology: Concepts and Laboratory Exercises*. 3rd edition. Eds. Ownley BH, Trigiano RN. CRC Press.
3. **Zhang N***, Wang Z. **2015**. *Sordariomycetes* and *Leotiomycetes*. Systematics and Evolution. Pp. 57-88. In *The Mycota* VII 2nd edition, Eds. McLaughlin DJ, Spatafora JW. Springer-Verlag. Berlin Heidelberg.
4. Turgeon BG, Condon B, Liu J, **Zhang N**. **2010**. Protoplast Transformation of Filamentous Fungi. Pp. 3-20. In *Molecular and Cell Biology Methods for Fungi*, Methods in Molecular Biology series. Ed. Amir Sharon. Humana Press.

Electronic Monograph:

1. Luo J†, **Zhang N***. **2022**. An E-monograph of the Fungal Order *Magnaporthales*: Taxonomy, Molecular Phylogeny, and Biogeography. <https://magnaporthales.sebs.rutgers.edu/>

Peer-Reviewed Journal Papers (published/in press)

2023

1. Luo J†, Walsh E†, Groben G†, Justiniano B†, **Zhang N***. Larger presence of ectomycorrhizae detected from pygmy pine ecotype in the fire-frequent pine barrens ecosystem. *Mycologia*. Accepted, July 2023. DOI: 10.1080/00275514.2023.2234269
2. Groben G†, Clarke BB, Kerkhof L, Bonos SA, Meyer WA, Qu Y, Luo J†, Walsh E†, **Zhang N***. 2023. Mycobiome analysis of tall fescue grass under drought stress using the Illumina MiSeq and Oxford nanopore technology MinION. *Phytobiomes Journal*. <https://doi.org/10.1094/PBIOMES-10-22-0071-R>
3. Errickson W, **Zhang N**, Huang B. **2023**. Promotive effects of endophytic rhizobacteria on tiller and root growth in creeping bentgrass during drought stress and post-stress recovery involving regulation of hormone and sugar metabolism. *Crop Science* 63: 2583-2593. DOI: 10.1002/csc2.21017

2022

4. Chou M, Luo J†, Clarke BB, Murphy J, **Zhang N**, Vines PL, Koch P. Rapid detection of the recently identified turfgrass pathogen *Magnaporthiopsis meyeri-festuceae* using recombinase polymerase amplification. *Plant Disease* 106: 2441-2446. DOI: 10.1094/PDIS-08-21-1732-RE

5. Vines PL, Daddio RM, Luo J†, Wang R, **Zhang N**, Clarke BB, Meyer WA, Bonos SA. *Pyricularia oryzae* incites gray leaf spot disease on hard fescue (*Festuca brevipila*). **2022**. *International Turfgrass Society Research Journal* 14: 997-1002. DOI: 10.1002/its2.17

2021

6. Walsh E†, Luo J†, Khiste W†, Scalera A†, Sajjad S†, **Zhang N***. **2021**. *Pygmaeomycetaceae*, a new root associated family in *Mucoromycotina* from the pygmy pine plains. *Mycologia* 113:134-145. DOI: 10.1080/00275514.2020.1803649
7. Lücking R, Aime MC, Robbertse B, Miller AN, Ariyawansa HA, Aoki T, Cardinali G, Crous PW, Druzhinina IS, Geiser DM, Hawksworth DL, Hyde KD, Irinyi L, Jeewon R, Johnston PR, Kirk PM, Malosso E, May TW, Meyer W, Öpik M, Robert V, Seifert KA, Stadler M, Thines M, Vu D, Yurkov AM, **Zhang N**, Schoch CL. **2021**. Fungal taxonomy and sequence-based nomenclature. *Nature Microbiology* 6: 540-548. DOI: 10.1038/s41564-021-00888-x
8. Aime MC, Miller A, Aoki, T, Bensch K, Cai L, Crous P, Hawksworth DL, Hyde K, Kirk P, Lücking R, May T, Malosso E, Redhead SA, Rossman A, Stadler M, Thines M, Yurkov A, **Zhang N**, Schoch C. **2021**. How to publish a new fungal species, or name, version 3.0. *IMA Fungus* 12: 11. Pages 1-15. DOI: 10.1186/s43008-021-00063-1
9. Bindell M†, Luo J†, Walsh E†, Wagner NE, Miller SJ†, Cai G, Bonos SA, **Zhang N***. Arbuscular mycorrhizal fungal communities associated with switchgrass (*Panicum virgatum* L.) in the acidic, oligotrophic pine barrens ecosystem. **2021**. *Grass Research* 1:2, pages 1-10. DOI: 10.48130/GR-2021-0002
10. Vines PL, Daddio RM, Luo J†, Wang R, **Zhang N**, Clarke BB, Meyer WA, Bonos SA. *Pyricularia oryzae* incites gray leaf spot disease on hard fescue (*Festuca brevipila*). **2021**. *International Turfgrass Society Research Journal*. 2021: 1-6. DOI: 10.1002/its2.17
11. David M. Geiser, Abdullah M. S. Al-Hatmi, Takayuki Aoki, Tsutomu Arie, Virgilio Balmas, Irene Barnes, Gary C. Bergstrom, Madan K. Bhattacharyya, Cheryl L. Blomquist, Robert L. Bowden, Balázs Brankovics, Daren W. Brown, Lester W. Burgess, Kathryn Bushley, Mark Busman, José F. Cano-Lira, Joseph D. Carrillo, Hao-Xun Chang, Chi-Yu Chen, Wanquan Chen, Martin Chilvers, Sofia Chulze, Jeffrey J. Coleman, Christina A. Cuomo, Z. Wilhelm de Beer, G. Sybren de Hoog, Johanna Del Castillo-Múnera, Emerson M. Del Ponte, Javier Diéguez-Uribeondo, Antonio Di Pietro, Véronique Edel-Hermann, Wade H. Elmer, Lynn Epstein, Akif Eskalen, Maria Carmela Esposto, Kathryne L. Everts, Sylvia P. Fernández-Pavía, Gilvan Ferreira da Silva, Nora A. Foroud, Gerda Fourie, Rasmus J. N. Frandsen, Stanley Freeman, Michael Freitag, Omer Frenkel, Kevin K. Fuller, Tatiana Gagkaeva, Donald M. Gardiner, Anthony E. Glenn, Scott E. Gold, Thomas R. Gordon, Nancy F. Gregory, Marieka Gryzenhout, Josep Guarro, Beth K. Gugino, Santiago Gutierrez, Kim E. Hammond-Kosack, Linda J. Harris, Mónica Homa, Cheng-Fang Hong, László Hornok, Jenn-Wen Huang, Macit Ilkit, Adriaana Jacobs, Karin Jacobs, Cong Jiang, María del Mar Jiménez-Gasco, Seogchan Kang, Matthew T. Kasson, Kemal Kazan, John C. Kennell, Hye-Seon Kim, H. Corby Kistler, Gretchen A. Kuldau, Tomasz Kulik, Oliver Kurzai, Imane Laraba, Matthew H. Laurence, Theresa Lee, Yin-Won Lee, Yong-Hwan Lee, John F. Leslie, Edward C.Y. Liew, Lily W. Lofton, Antonio F. Logrieco,

Manuel S. López-Berges, Alicia G. Luque, Erik Lysøe, Li-Jun Ma, Robert E. Marra, Frank N. Martin, Sara R. May, Susan P. McCormick, Chyanna McGee, Jacques F. Meis, Quirico Migheli, N. M. I. Mohamed Nor, Michel Monod, Antonio Moretti, Diane Mostert, Giuseppina Mule', Françoise Munaut, Gary P. Munkvold, Paul Nicholson, Marcio Nucci, Kerry O'Donnell, Matias Pasquali, Ludwig H. Pfenning, Anna Prigitano, Robert H. Proctor, Stéphane Ranque, Stephen A. Rehner, Martijn Rep, Gerardo Rodríguez-Alvarado, Lindy Joy Rose, Mitchell G. Roth, Carmen Ruiz-Roldán, Amgad A. Saleh, Baharuddin Salleh, Hyunkyu Sang, María Mercedes Scandiani, Jonathan Scauflaire, David G. Schmale III, Dylan P. G. Short, Adnan Šišić, Jason A. Smith, Christopher W. Smyth, Ellie Spahr, Jason E. Stajich, Emma Steenkamp, Christian Steinberg, Rajagopal Subramaniam, Haruhisa Suga, Brett A. Summerell, Antonella Susca, Cassandra L. Swett, Christopher Toomajian, Terry J. Torres-Cruz, Anna M. Tortorano, Martin Urban, Lisa J. Vaillancourt, Gary E. Vallad, Theo A. J. van der Lee, Dan Vanderpool, Anne D. van Diepeningen, Martha M. Vaughan, Eduard Venter, Marcele Vermeulen, Paul E. Verweij, Altus Viljoen, Cees Waalwijk, Emma C. Wallace, Grit Walther, Jie Wang, Todd J. Ward, Brian L. Wickes, Nathan P. Wiederhold, Michael J. Wingfield, Ana K. M. Wood, Jin-Rong Xu, Xiao-Bing Yang, Tapani Yli-Mattila, Sung-Hwan Yun, Latiffah Zakaria, Hao Zhang, **Ning Zhang**, Sean X. Zhang, Xue Zhang. **2021**. Phylogenomic analysis of a 55.1 kb 19-gene dataset resolves a monophyletic *Fusarium* that includes the *Fusarium solani* species complex. *Phytopathology*. DOI: 10.1094/PHYTO-08-20-0330-LE

2020

12. Groben G†, Clarke BB, Murphy J, Koch P, Crouch J, Lee S, **Zhang N***. **2020**. Real-time PCR detection of *Clariireedia* spp., the causal agent of dollar spot in turfgrasses. *Plant Disease* 104: 3118–3123. DOI: 10.1094/PDIS-04-20-0726-RE
13. Lücking R, Aime MC, Robbertse B, Miller AN, Ariyawansa HA, Aoki T, Cardinali G, Crous PW, Druzhinina IS, Geiser DM, Hawksworth DL, Hyde KD, Irinyi L, Jeewon R, Johnston PR, Kirk PM, Malosso E, May TW, Meyer W, Öpik M, Robert V, Seifert KA, Stadler M, Thines M, Vu D, Yurkov AM, **Zhang N**, Schoch CL. **2020**. Unambiguous identification of fungi: where do we stand and how accurate and precise is fungal barcoding? *IMA Fungus* 11:14 (pages 1-32). DOI: 10.1186/s43008-020-00033-z
14. Vines PL, Hoffmann FG, Meyer F, Allen TW, Luo J†, **Zhang N**, Tomaso-Peterson M. **2020**. *Magnaporthiopsis cynodontis*, a novel turfgrass pathogen with wide distribution in the United States. *Mycologia* 112: 51-63. DOI:10.1080/00275514.2019.1676614
15. Kerry O'Donnell, Abdullah M. S. Al-Hatmi, Takayuki Aoki, Jeffrey J. Coleman, Christina A. Cuomo, G. Sybren de Hoog, Antonio Di Pietro, Rasmus J. Frandsen, Donald M. Gardiner, David M. Geiser, Igor V. Grigoriev, Josep Guarro, Gert Kema, Hye-Seon Kim, H. Corby Kistler, Imane Laraba, John F. Leslie, Erik Lysøe, Li-Jun Ma, Jacques F. Meis, Wieland Meyer, Robert H. Proctor, Martijn Rep, Jason E. Stajich, Emma Steenkamp, v Richard C. Summerbell, Brett A. Summerell, Theo A. J. van der Lee, Anne D. van Diepeningen, Paul E. Verweij, y Cees Waalwijk, m Todd J. Ward, Brian L. Wickes, Nathan P. Wiederhold, Michael J. Wingfield, **Ning Zhang**, Sean X. Zhang. **2020**. No to *Neocosmospora*: Phylogenomic and practical reasons for continued inclusion of the *Fusarium solani* species complex in the genus *Fusarium*. *mSphere* 5:e00810-20 (pages 1-7). DOI:10.1128/mSphere.00810-20

2019

16. Valent B, Farman M, Tosa Y, Begerow D, Fournier E, Gladieux P, Kamoun S, Kemler M, Lebrun MH, Stajich J, Talbot NJ, Terauchi R, Tharreau D, **Zhang N**. 2019. *Pyricularia graminis-tritici* is not the correct species name for the wheat blast fungus: Response to Ceresini et al. (MPP 20:2). **Molecular Plant Pathology** 20: 173-179. DOI:10.1111/mpp.12778
17. Cai G, Fleury T, **Zhang N**. 2019. Comparative genomics approach to build a genome-wide database of high quality, informative microsatellite markers: application on *Phytophthora sojae*, a soybean pathogen. **Scientific Reports** 9: 7969, pages 1-6. DOI: <https://doi.org/10.1038/s41598-019-44411-z>
18. Meuhlbauer MF, Tobia J, Honig JA, **Zhang N**, Hillman BI, Gold MK, Molnar TJ. 2019. Population differentiation within *Anisogramma anomala* in North America. **Phytopathology** 109: 1074-1082. DOI: <https://doi.org/10.1094/PHYTO-06-18-0209-R>
19. Menon RR, Luo J†, Chen X, Zhou H, Liu Z, Zhou G, **Zhang N***, Jin C. 2019. Screening of fungi for potential application of self-healing concrete. **Scientific Reports** 9: 2075, pages 1-12. DOI: <https://doi.org/10.1038/s41598-019-39156-8>

2018

20. Walsh E†, Duan W†, Mehdi M†, Naphri K†, Khiste S†, Scalera A†, **Zhang N***. 2018. *Cadophora meredithiae* and *C. interclivum*, new species from roots of sedge and spruce in a Western Canada subalpine forest. **Mycologia** 110: 201-214. DOI: <http://dx.doi.org/10.1080/00275514.2017.1406748>
21. **Zhang N***, Cai G, Price D, Crouch J, Gladieux P, Hillman B, Khang CH, LeBrun M-H, Lee Y-H, Luo J†, Qiu H, Veltri D, Wisecaver, JH, Zhu J, Bhattacharya D. 2018. Genome wide analysis of the transition to pathogenic lifestyles in *Magnaporthales* fungi. **Scientific Reports** 8:5862 (pages 1-13). DOI:10.1038/s41598-018-24301-6
22. Luo J†, Chen X, Crump J, Zhou H, Davies GD, Zhou G, **Zhang N***, Jin C. 2018. Interactions of fungi with concrete: significant importance for bio-based self-healing concrete. **Construction and Building Materials** 164: 275-285. DOI: <https://doi.org/10.1016/j.conbuildmat.2017.12.233>
23. Thines M, Crous P, Aime MC, Aoki T, Cai L, Hyde K, Miller AN, **Zhang N**, Stadler M. 2018. Ten reasons why a sequence-based nomenclature is not useful for fungi anytime soon. **IMA Fungus** 9: 177-183. DOI: 10.5598/imafungus.2018.09.01.11
24. Tariq A, Naz F, Altaf R, Jabeen Z, Rauf CA, Irshad G, Raja MU, Shaheen FA, Sultana T, Aslam M, Bennett JW, **Zhang N**. 2018. First report of fruit rot of bell pepper caused by *Fusarium incarnatum* in Pakistan. **Plant Disease** 102: 2645-2646. DOI: 10.1094/PDIS-02-18-0221-PDN
25. Trigiano RN, Hadziabdic D, Mantooth K, Windham MT, Ownley BH, Staton ME, Miller S†, **Zhang N**. 2018. Dogwood anthracnose: the story continues. **Acta Horticulturae** 1191. DOI: 10.17660/ActaHortic.2018.1191.11

26. Naz F, Tariq A†, Rauf A, Abbas MF, Walsh E†, Luo J†, Kingskey K, **Zhang N**, Bennett JW. **2018**. First report of *Botrytis cinerea* causing gray mold of bell pepper in Pakistan. *Plant Disease* 102: 1449-1450. DOI: <https://doi.org/10.1094/PDIS-10-17-1632-PDN>

2017

27. Tripp E, **Zhang N**, Schneider H, Huang Y, Mueller GM, Hu Z, Häggblom M, Bhattacharya D. **2017**. Reshaping Darwin's Tree: Impact of the Symbiome. *Trends in Ecology and Evolution* 32: 552-555. <http://dx.doi.org/10.1016/j.tree.2017.05.002>
28. Luo J†, Walsh E†, Miller S†, Blystone D†, Dighton J, **Zhang N***. **2017**. Root endophytic fungal communities associated with pitch pine, switchgrass, and rosette grass in the pine barrens ecosystem. *Fungal Biology* 121:478-487. DOI: 10.1016/j.funbio.2017.01.005
29. Luo J†, Vines PL, Grimshaw A, Hoffman L, Walsh E†, Bonos S, Clarke BB, Murphy JA, Meyer WA, **Zhang N***. **2017**. *Magnaporthiopsis meyeri-festuciae* sp. nov. associated with a summer patch-like disease of fine fescue turfgrasses. *Mycologia* 109: 780-789. DOI: <http://dx.doi.org/10.1080/00275514.2017.1400306>
30. Mantooth K, Hadziabdic D, Boggess S, Windham M, Miller S†, Cai G, Spatafora J, **Zhang N**, Staton M, Ownley B, Trigiano R. **2017**. Confirmation of independent introductions of an exotic plant pathogen of *Cornus* species, *Discula destructiva*, on the east and west coasts of North America. *PLoS ONE* 12(7): e0180345. <https://doi.org/10.1371/journal.pone.0180345>
31. Schoch CL, Aime MC, de Beer W, Crous P, Hyde KD, Penev L, Seifert KA, Stadler M, **Zhang N**, Miller AN. **2017**. Using standard keywords in publications to facilitate updates of new fungal taxonomic names. *IMA Fungus* 8(2): 70-73
32. Zhao G†, Yin G, Inamdar A, Luo J†, **Zhang N**, Yang I, Buckley B, Bennett JW. **2017**. Volatile organic compounds emitted by filamentous fungi isolated from flooded homes after Hurricane Sandy show toxicity in a *Drosophila* bioassay. *Indoor Air* 27: 518-528. DOI: 10.1111/ina.12350

2016

33. Qiu H†, Cai G, Luo J†, Bhattacharya D, **Zhang N***. **2016**. Extensive horizontal gene transfers between plant pathogenic fungi. *BMC Biology* 14:41, pg 1-11. DOI: 10.1186/s12915-016-0264-3
34. **Zhang N***, Luo J, Rossman A, Aoki T, Chuma I, Crous PW, Dean R, de Vries RP, Donofrio N, Hyde KD, Lebrun M, Talbot NJ, Tharreau D, Tosa Y, Valent B, Wang Z, Xu J. **2016**. Generic Names in Magnaporthales. *IMA Fungus* 7(1): 155-159. DOI: 10.5598/imafungus.2016.07.01.09
35. Miller SJ†, Masuya H, Zhang J, Walsh E†, **Zhang N***. **2016**. Real-time PCR detection of dogwood anthracnose fungus in historical herbarium specimens from Asia. *PLoS ONE* 11(4):e0154030, pg 1-9. DOI:10.1371/journal.pone.0154030

36. Schroers HJ, Samuels GJ, **Zhang N**, Short D, Juba J, Geiser DM. **2016**. Epitypification of *Fusisporium (Fusarium) solani* and its assignment to a common phylogenetic species in the *F. solani* species complex. ***Mycologia*** 108: 806-819. DOI:10.3852/15-255
37. Cheng L†, **Zhang N**, Huang B. **2016**. Effects of ACC-deaminase Producing Bacteria on Perennial Ryegrass Growth and Physiological Responses to Salinity Stress. ***Journal of the American Society for Horticultural Science*** 141:233-241

2015

38. Walsh E†, Luo J†, Naik A†, Preteroti T†, **Zhang N***. **2015**. *Barrenia*, a new genus associated with roots of switchgrass and pine in the oligotrophic pine barrens. ***Fungal Biology*** 119: 1216-1225. DOI: 10.1016/j.funbio.2015.09.010
39. Luo J†, Walsh E†, Blystone D†, **Zhang N***. **2015**. Five new *Pseudophialophora* species from grass roots in the oligotrophic pine barrens ecosystem. ***Fungal Biology*** 119: 1205-1215. DOI: 10.1016/j.funbio.2015.08.016
40. Luo J†, Qiu H, Cai G, Wagner NE, Bhattacharya D, **Zhang N***. **2015**. Phylogenomic analysis uncovers the evolutionary history of nutrition and infection mode in rice blast fungus and other Magnaporthales. ***Scientific Reports*** 5:9448. DOI: 10.1038/srep09448
41. Luo J†, Walsh E†, **Zhang N***. **2015**. Toward monophyletic generic concepts in Magnaporthales: species with *Harpophora* asexual states. ***Mycologia*** 107: 641-646. DOI:10.3852/14-302
42. Zhou N, Chen Q, Carroll G, **Zhang N**, Shivas RG, Cai L. **2015**. Polyphasic characterization of four new plant pathogenic *Phyllosticta* species from China, Japan, and the United States. ***Fungal Biology*** 119: 433-446. DOI: 10.1016/j.funbio.2014.08.006
43. Beck A, Divakar PK, **Zhang N**, Molina MC, Struwe L. **2015**. Evidence of ancient horizontal gene transfer between fungi and the terrestrial alga *Trebouxia*. ***Organisms Diversity and Evolution*** 15: 235-248. DOI: 10.1007/s13127-014-0199-x
44. Li S, Darwish O, Alkharouf, N, Matthews, B, Ji P, Domier LL, **Zhang N**, Blum BH. **2015**. Draft genome sequence of *Phomopsis longicolla* isolate MSPL 10-6. ***Genomics Data*** 3: 55-56. DOI: <http://dx.doi.org/10.1016/j.gdata.2014.11.007>

2014

45. Walsh E†, Luo J†, **Zhang N***. **2014**. *Acidomelania panicicola* gen. et. sp. nov. from switchgrass roots in acidic New Jersey Pine Barrens. ***Mycologia*** 106:856-864. DOI: 10.3852/13-377
46. Luo J†, Walsh E†, Naik A†, Zhuang WY, Zhang K, Cai L, **Zhang N***. **2014**. Temperate pine barrens and tropical rain forests are both rich in undescribed fungi. ***PLoS ONE*** 9(7): e103753. DOI: 10.1371/journal.pone.0103753
47. White JF Jr, Torres MS, Somu MP, Johnson H, Irizarry I, Chen Q, **Zhang N**, Walsh E†, Tadych M, Bergen M. **2014**. Hydrogen peroxide staining to visualize intracellular

bacterial infections of seedling root cells. ***Microscopy Research and Technique*** 77: 566-573. DOI: 10.1002/jemt.22375

48. Schoch CL, Robbertse B, Robert V, Vu D, Cardinali G, Irinyi L, Meyer W, Nilsson RH, Hughes K, Miller AN, Kirk PM, Abarenkov K, Aime MC, Ariyawansa HA, Bidartondo M, Boekhout T, Buyck B, Cai Q, Chen J, Crespo A, Crous PW, Damm U, De Beer ZW, Dentinger BTM, Divakar PK, Dueñas M, Feau N, Fliegerova K, García MA, Ge Z-W, Griffith GW, Groenewald JZ, Groenewald M, Grube M, Gryzenhout M, Gueidan C, Guo L, Hambleton S, Hamelin R, Hansen K, Hofstetter V, Hong S-B, Houbraken J, Hyde KD, Inderbitzin P, Johnston PR, Karunarathna SC, Kõljalg U, Kovács GM, Kraichak E, Krizsan K, Kurtzman CP, Larsson K-H, Leavitt S, Letcher PM, Liimatainen K, Liu J-K, Lodge DJ, Luangsa-ard JJ, Lumbsch HT, Maharachchikumbura SSN, Manamgoda D, Martín MP, Minnis A, Moncalvo J-M, Mulè G, Nakasone KK, Niskanen T, Olariaga I, Papp T, Petkovits T, Pino-Bodas R, Powell MJ, Raja HA, Redecker D, Sarmiento-Ramirez JM, Seifert KA, Shrestha B, Stenroos S, Stielow B, Suh S-O, Tanaka K, Tedersoo L, Telleria MT, Udayanga D, Untereiner WA, Uribeondo JD, Subbarao KV, Vágvölgyi C, Visagie C, Voigt K, Walker DM, Weir BS, Weiß M, Zhuang W-Y, Wijayawardene NN, Wingfield MJ, Xu JP, Yang ZL, **Zhang N**, Federhen S. **2014**. Finding needles in haystacks: linking scientific names, reference specimens and molecular data for Fungi. ***Database*** 2014: 1-21. DOI: 10.1093/database/bau061
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GRANTS

Extramural Grants

1. 2022-2026. **National Science Foundation (NSF)** "Fungi in the pine barrens ecosystem - biodiversity, systematics and function"
PI. \$750,000 (PI)
2. 2023-2026. **NSF REU**. "Fungi in the pine barrens ecosystem - biodiversity, systematics and function".
PI \$7,250
3. 2023-2024. **US Golf Association** "Mitigating Bentgrass Summer Decline Utilizing Endophytic Plant Growth-Promoting Bacteria" (PI: B. Huang)
Co-PI. \$95,756
4. 2022-2023. **National Science Foundation (NSF)** "An online global monograph of *Magnaporthales* - evolution, taxonomy, biogeography and biology of the rice blast fungus and allies" supplement fund
PI. \$120,160 (PI)
5. 2021-2022. **US Golf Association** "Bentgrass Cultivar and Autumn-applied Fungicide Timing Effects on Spring Suppression of Dollar Spot" (PI: J. Murphy)
Co-PI. \$60,000
6. 2017- 2022. **US Department of Agriculture (USDA)- National Institute of Food & Agriculture (NIFA)** Specialty Crop Research Initiative. "Increasing low-input turfgrass adoption through breeding, innovation, and public education"
Co-PI. \$5,487,600 total, \$379,379 to Zhang
7. 2018-2021. **National Science Foundation (NSF)** "Acquisition of a High Resolution X-ray Computed Tomography Instrument for a Multi-User Imaging Facility" (PI: E. Yurkow)
Co-PI. \$399,969
8. 2015-2022. **National Science Foundation (NSF)** "CAREER: An online global monograph of *Magnaporthales* - evolution, taxonomy, biogeography and biology of the

rice blast fungus and allies”
PI. \$599,230 (PI)

9. 2019-2024. **USDA** “Biology, Etiology, and Management of Dollar Spot in Turfgrasses” (Multistate Research Project, Paul Koch leads Project Number: NCDC232, NC_temp1208)
Co-PI. \$5,000 per year
10. 2016-2021. **USDA** “Explorations into the Turfgrass Phytobiome: Establishing Standardized Research Methodology for Studying Microbial Communities and Developing Reliable Applications for Turfgrass Management” (Multistate Research Project, J. Roberts leads)
Co-PI. \$5,000 per year
11. 2017-2019. **USDA-NIFA Northeast SUN Grant.** “Enhancing the plant-soil-microbe ecosystem to advance sustainable switchgrass production” (PI: S. Bonos)
Co-PI. \$149,868
12. 2018-2019. **OJ Noer Foundation.** “Effects of endophytic rhizobacteria on creeping bentgrass tolerance to drought and heat stress”
Co-PI. \$47,150
13. 2016-2017. **NSF** “A Workshop to Explore Enhancing Collaboration Between US and Chinese Researchers in Systematic Biology” (PI: P. Herendeen)
Co-PI. \$78,001
14. 2015-2018. **NSF** “Digitization TCN: Collaborative: The Microfungi Collections Consortium: A Networked Approach to Digitizing Small Fungi with Large Impacts on the Function and Health of Ecosystems.” (PI: A. Miller)
Co-PI. Rutgers \$58,226
15. 2012-2016. **NSF** “Systematics of *Magnaporthaceae*: Understanding Evolution of the Rice Blast Fungus and Allied Species Using Phylogenetic, Phylogenomic and Comparative Genome Analyses”. (Co-PI: D. Bhattacharya)
PI. \$544,963
16. 2013-2016. **NSF REU.** “Revealing microbial communities associated with grass root in New Jersey Pine Barrens using metagenomic analysis”.
PI \$6,250
17. 2014. **Northeastern Regional Association** of State Agricultural Experiment Station. “Organic Lawn Care Practices for the Northeast” Planning Grant. (PI: J. Murphy, 14 Co-PIs **\$5,600**).
Co-PI
18. 2011-2014. **US Golf Association** “Promotion of Turf Health Through Early Pathogen Detection-Development of a Turf PathoCHIP”. (Co-PIs: B. Clarke, FP. Wong, SB. Martin, P. Harmon) (*National competitive grant, funding rate 22.9%*)
PI \$60,000

19. 2010-2013. **New Jersey Turfgrass Foundation and New Jersey Turfgrass Association**, “Promotion of Turf Health Through Early Pathogen Detection-Development of a Turf PathoCHIP”.
PI \$38,523

Internal Grants

20. 2023-2025. Climate monitoring in pine barrens ecosystem to study the impact of climate change on biodiversity. (Co-PI David Robinson)
Rutgers Global Grant
PI. \$14,953
21. 2021-2022. **Rutgers TechAdvance Fund**. “Optimization of inoculation methods and stability of rhizobacteria for promoting plant health” (PI: B. Huang)
Co-PI. \$50,000
22. 2017-2019. Fungal Biodiversity in the New Jersey Pine Barrens. Rutgers School of Environmental and Biological Sciences and New Jersey Agricultural Experiment Station
Alberts Competitive Research Awards in Biodiversity.
PI. \$25,000.
23. 2016-2020. **Chancellor’s Scholar Research Initiative.**
PI. \$20,000
24. 2016-2019. **US Department of Agriculture, McIntire Stennis.** “Regulation of Pitch Pine Wood Decomposition in the NJ Pine Barrens” Co-PI (PI: John Dighton).
Co-PI. \$105,000
25. 2013-2016. **US Department of Agriculture, McIntire Stennis.** “Coarse woody residue decomposition affected by southern pine beetle: fungal interactions causing increased fire hazard” Co-PI (PI: John Dighton, Total \$60,000).
Co-PI. \$30,000 for Zhang
26. 2010-2021. **Center for Turfgrass Science**, Rutgers University. “Development of a TurfPathoChip and understanding the population biology of *Rhizoctonia* species”
PI. \$360,000
27. 2010-2015. **USDA HATCH**, Development of a Turf PathoChip and Understanding the Population Biology of Plant Pathogenic Fungi.
PI
28. 2012. **NJAES** Competitive Intramural Research Awards Program “Exploring switchgrass-fungal symbiosis using high throughput RNA sequencing”
PI \$8,000
29. 2012. **RU FAIR** “Fungi and mercury transformations in terrestrial systems”. (PI. John Dighton, Tamar Barkay)
Co-PI
30. 2012-2013. **Rutgers Faculty Research Grant.** Phylogenomics of Rice Blast Fungus and Allied Species.

PI \$48,000

31. 2009-2010. **USDA HATCH**, NE1025 “Biology, Ecology and Management of Emerging Pests of Annual Bluegrass on Golf Courses”. (with multiple PIs)

Co-PI

32. 2009. **Rutgers SEBS Pre-tenure Faculty Career Award**. “Is Dogwood Anthracnose Exotic? New Approaches to Explore the Biogeography and Evolution of Plant-Associated Fungi”

PI \$12,783

33. 2009. **RU-FAIR Minigrant**, Rutgers Women In Science, “Seminars to Help Expand Research Networks of Rutgers Women Faculty in Biological Sciences”.

PI \$2,000

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| TEACHING |
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Courses Taught

Molecular Genetics Lab 11:126:482, 4 credits, Biotechnology undergraduate core course. Spring **2010, 2011, 2012, 2013, 2014, 2015, 2016, 2018, 2019, 2020, 2021, 2022, 2023**

Advanced Mycology 16:765:533, 3 credits, Plant Biology graduate course (co-teach). Spring **2012, 2014, 2016, 2018, 2022**

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

Guest Lectures

Fungi in the Environment 11:770:402 (one lecture each year), Fall 2009, 2010, 2011, 2012
Fungi and Human Health 11:776:415:01 (one lecture each year), Spring 2015, 2016, 2017, 2018

Introduction to Plant Biology, 16:765:501 (one lecture), Fall 2012

Microbial Biology Seminar 16:682:521 (one lecture each year), Fall 2015, 2016, 2017

Microbial Ecology and Diversity 16:682:572 (one lecture), Fall 2012, 2017

Microbial Life 16:682:501 (one lecture each year), Fall 2012, 2013, 2015, 2016, 2017, 2018, 2019, 2020, 2021, 2022

Plant Pathogenesis 16: 765:538 (two lectures each year), Spring 2011, 2013, 2015,

Seminar in Microbial Biology 16:682:520 (one lecture), Fall 2010

The Evolution of Eukaryotes, 11:704:401 (one lecture), Fall 2012

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| SERVICE |
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Professional Service

1. **Program Committee, Mycological Society of America, 2020-2024 (Chair in 2024).**

2. **Advisory Board member of The International Commission of Fungal Taxonomy, 2022-present.**
3. **Editorial Board of *Mycology*, 2023-2025**
4. **Associate Editor of *Mycologia*, 2013-2018.**
5. **Co-organizer** of the symposium “Expanding the taxonomic context of genome sampled fungi” for the International Mycological Conference, 2018.
6. **Organizer** of the NSF supported international workshop on “Comparative genomic approaches to understanding the evolution of *Magnaporthales*” at Rutgers University in January 2016.
7. **Co-organizer** of the NSF supported “A Workshop to Explore Enhancing Collaboration Between US and Chinese Researchers in Systematic Biology” held in Guangzhou, China. Feb. 2016.
8. Local Arrangement **Committee member** of the 13th International Turfgrass Research Conference, 2017.
9. Elected as **committee member** of The **International Commission of Fungal Taxonomy**, 2011-2022.
10. **Co-organizer of the symposium** “What can Next Generation Fungal Genome Sequencing do for you?” in Botany 2015 conference, Edmonton, Canada, 2015.
11. Elected as **Councilor of Mycological Society of America** (Systematics and Evolution), 2011-2013.
12. **Member** (2010-2014) and **chair** (2014) of the **Research Committee**, Mycological Society of America.
13. **Member** (2014-present) of the **Program Planning Committee**, International Turfgrass Research Conference.
14. **Member** of the **International *Rhizoctonia* Subject Matter Committee**. 2013.
15. **Chair** of the **ad hoc session**, “One name = one fungus” at the 27th Fungal Genetics Conference. 2013.
16. **Moderator** for the Ecology and Pathology session at the Botanical Society America/Mycological Society of America 2009 meeting (Snowbird, UT), July 25-August 1, 2009.
17. **Editorial Board** of *Mycology*, 2012-2014.
18. **Organizer** of a **symposium** “The fungal DNA Barcode and Beyond”, one of the seven symposia selected for the 2012 Mycological Society of America Meeting.

19. **Moderator** for the **Fungal Biology session** at the American Phytopathological Society Annual meeting. 2011. Honolulu. August 6-10.
20. **Chair** of the Ecology and Pathology session at the Mycological Society of America 2011 meeting (Fairbanks, Alaska) August 1-5, 2011.

Referee Service

Peer Review: Scientific Journals and book

Mycologia, American Journal of Botany, Microbial Ecology, Plant Disease, European Journal of Plant Pathology, Soil Science Society of American Journal, Fungal Biology, Fungal Diversity, Fungal Ecology, Mycology, The Plant Pathology Journal, Mycological Progress, Phytotaxa, Plant Disease, Molecular Plant Pathology, IMA Fungus, Studies in Mycology, MycoKeys etc. And review for book: *Diversity and evolution of fungal parasites and pathogens*, published by Elsevier.

Peer Review: Funding Agencies (selected)

1. Grant review: **NSF**
2. **NSF grant review panel**
3. **USDA AFRI grant review panel**

University Service (selected)

1. **Advisory Committee on Appointments and Promotions (A&P)**, SEBS, Rutgers University, 2022-2025
2. **Search Committee** of Turfgrass Pathologist, Department of Plant Biology, Rutgers, 2022-2023.
3. **Reading Committee** for tenure and promotion, Department of Plant Biology, Rutgers, 2016, 2018, 2022.
4. Department of Plant Biology, **NTT Committee**, 2020-present.