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EDUCATION

- 2000-2002** **Postdoctoral fellow in Bioinformatics** (advisor: Walter Gilbert), Harvard University, Cambridge MA
- 1996-2000** **Ph.D. in Molecular Biology** (advisor: Scott O. Rogers), SUNY, College of Environmental Science and Forestry, Syracuse NY
- 1986-1989** **MS in Animal Physiology** (advisor: Zhangwen Weng), Wuhan University, Wuhan China
- 1982-1986** **BS in Cell Biology**, Wuhan University, Wuhan China

PROFESSIONAL EXPERIENCE

- 2020-present** **Professor**, Biochemistry and Molecular Biology, UMass Amherst
- 2017-2020** **Associate Professor**, Biochemistry and Molecular Biology, UMass Amherst
- 2012-2017** **Assistant Professor**, Biochemistry and Molecular Biology, UMass Amherst
- 2011-2012** **Assistant Professor**, Plant, Soil and Insect Sciences, UMass Amherst
- 2002-2011** **Research Scientist**, The Broad Institute of MIT & Harvard, Cambridge, MA
- 2000-2002** **Postdoctoral Research Fellow**, Harvard University, Cambridge MA
- 1996-2000** **Research Assistant**, SUNY, the College of Environmental Science and Forestry, Syracuse NY
- 1989-1995** **Editor**, Journal of Wuhan University (Natural Science Edition)

HONORS

- 2023** **Fulbright Scholar**: Institute of International Education
- 2020** **ADVANCE Faculty Fellow**: National Science Foundation
- 2020** **CNS Outstanding Research Achievement Award**: UMass Amherst
- 2017** **CAREER Award**: National Science Foundation
- 2016** **Armstrong Fund for Science Award**: UMass Amherst
- 2015** **Investigator Award in Infectious Diseases and Pathogenesis**: BWF
- 2012** **Mellon Team Mentoring Grant**: UMass Amherst Center for Teaching
- 2000** **Zabel Graduate Scholarship Award**: State University of New York
- 1998** **Fitzpatrick and Korf travel Award**: Mycology Society of America
- 1997** **Best Presentation Award**: Mycology Society of America

ACTIVE RESEARCH SUPPORT

- 2024–2029** **United States Department of Agriculture (USDA)**, Hatch grant, “*Differentiate endophytic versus pathogenic interactions.*” Ma, PI.
- 2022–2026** **USDA, National Institute of Food and Agriculture (NIFA)**. “*Investigating the genetic basis of downy mildew and bacterial leaf spot resistance in basil using advanced genomic techniques*” \$570,000 total costs to UMass. Ma co-PI.
- 2020–2024** **Joint Genome Institute, Community Sequencing Project**, “*Genome dynamics, chromosomal rearrangements and potential functional impacts in Fusarium, a genus of endophytic, plant pathogenic and saprophytic fungi.*” No money transfer to UMass. Ma PI.
- 2019–2024** **NIH/ National Eye Institute**. “*Identify virulence factors that facilitate Fusarium keratitis.*” \$1,250,000 direct costs. Ma PI

COMPLETED RESEARCH SUPPORT

- 2018–2022** **USDA, National Institute of Food and Agriculture (NIFA)**. “*Strategies for Improving the U.S. Responses to Fusarium, Downy Mildew and Chilling Injury in Production of Sweet Basil (Ocimum basilicum L.)*” \$351,716 total costs to UMass Amherst. Ma co-PI.
- 2016–2021** **NSF, CAREER Award**, “*Understanding effector biology in the species complex Fusarium oxysporum.*” \$793,199 total costs. Ma, PI. (NCE)
- 2015–2020** **Burroughs Wellcome Fund**, Infectious Diseases and Pathogenesis Investigator Award, “*Supernumerary chromosomes and pathogenicity of opportunistic fungal infections.*” \$500,000 total costs. Ma, PI.
- 2016–2019** **United States – Israel Binational Agricultural Research and Development (BARD)**. “*Fungal-specific histone deacetylase inhibitors, novel players in combating pathogenic fungi.*” \$130,000 UMass Amherst Budget, Ma co-PI.
- 2016–2019** **NSF CSBR Living Stocks: A "Biological Gold Mine" of plant natural products and biosynthesis.** \$300,000 UMass Amherst Budget, Ma co-PI.
- 2012–2017** **United States Department of Agriculture (USDA)**, Hatch grant, “*Investigating into the battle front of wilt diseases.*” \$250,000 total costs. Ma, PI.
- 2016–2018** **Armstrong Fund for Science**, “*Harnessing the synergistic power of plant anti-microbials.*” \$20,000 total costs. Ma, PI.
- 2012–2016** **Joint Genome Institute, Community Sequencing Project**, “*Exploring the supernumerary chromosomes of members of the Fusarium solani and Fusarium oxysporum species complexes as reservoirs for functional genetic diversity.*” Jeffery Coleman, Brown University PI; Ma co-PI. JGI will sequence 50 *Fusarium* genomes and generate RNAseq data to assist genome annotation. (No money transfer to UMass).
- 2012–2016** **USDA, National Institute of Food and Agriculture (NIFA)**. “*Strategies for Improving the U.S. Responses to Fusarium, Downy Mildew and Chilling Injury in Production of Sweet Basil (Ocimum basilicum L.)*” \$351,716 total costs. Dr. Robert Wick at Stockbridge PI; Ma co-PI.
- 2011–2015** **USDA NIFA**, “*Fungal reproductive and developmental process essential for plant infection.*” \$397,000 total costs. Ma, PI.

PUBLICATIONS (# undergraduate students * corresponding author)

1. Zhang, Yong; Li, Chunyu; Liu, Siwen; Zou, Cunwu; Mostert, Diane; Yu, Houlin; et al. (2024). Nitric oxide synthesis, mitochondrial activity and the expression of specific effector genes underlie the high virulence of tropical race 4 of the *Fusarium* wilt pathogen of banana. *Nature Micorb.* (*in press*) <https://doi.org/10.21203/rs.3.rs-3197485/v1>. Figshare Dataset. <https://doi.org/10.6084/m9.figshare.23732694>
2. Li, G., McWilliams, M., Rodrigues, M., Mearkle, B., Jaafar, N., Golla, V., Yu, H., Yang, H., Ayhan, D. H., Allen, K., Martínez-Soto, D., Springer, A., & Ma, L.-J. (2024). CUR(E)ating a New Approach to Study Fungal Effectors and Enhance Undergraduate Education through Authentic Research. *BMB Education* . <http://doi.org/10.1002/bmb.21783>
3. Abbondante S, Leal SM, Clark HL, Ratitong B, Sun Y, Ma LJ, Pearlman E. [Immunity to pathogenic fungi in the eye](#). *Semin Immunol.* 2023 May;67:101753. doi: 10.1016/j.smim.2023.101753.
4. Yu, H., Yang, H., Haridas, S., Hayes, R. D., Lynch, H., Andersen, S., Li, G., Martínez-Soto, D., Milo-Cochavi, S., Hazal Ayhan, D., Zhang, Y., Grigoriev, I. V., & Ma, L.-J. (2023). *Conservation and Expansion of Transcriptional Factor Repertoire in the Fusarium oxysporum Species Complex J. Fungi* **2023**, 9(3), 359; <https://doi.org/10.3390/jof9030359>
5. Martínez-Soto D, Yu H-L, Allen KS, **Ma L-J***. 2023, Differential colonization of the plant vasculature between endophytic versus pathogenic *Fusarium oxysporum* strains. *Molecular Plant-Microbe Interactions*, 36(1), 4–13, <https://doi.org/10.1094/MPMI-08-22-0166-SC>
6. Petreš, M., Hrustić, J., Vučinić, N., Ma, L.-J., Ayhan, D. H., & Grahovac, M. (2023). Genome Sequence Resource of *Fusarium graminearum* TaB10 and *Fusarium avenaceum* KA13, Causal Agents of Stored Apple Rot. *Molecular Plant-Microbe Interactions*, 36(1), 64–67. <https://doi.org/10.1094/MPMI-03-22-0069-A>
7. Khoulassa S, Elmoualij B, Benlyas M, Meziani R, Bouhlali EDT, Houria B, Alaoui YEH, Haridas S, Guo J, Lipzen A, Hurtado CV, Tejomurthula S, Barry K, Grigoriev IV, Coleman JJ, Ayhan DH, Ma LJ, Essarioui A. High-Quality Draft Nuclear and Mitochondrial Genome Sequence of *Fusarium oxysporum* f. sp. *albedinis* strain 9, the Causal Agent of Bayoud Disease on Date Palm. *Plant Dis.* 2022 Jul;106(7):1974-1976. <https://doi.org/10.1094/PDIS-01-22-0245-A>
8. Yu H-L, Ayhan DH, Martínez-Soto D, Milo Cochavi S, **Ma L-J***. 2022. Accessory chromosomes of the *Fusarium oxysporum* species complex and their contribution to host niche adaptation. B. Scott, C. Mesarich (eds.), *Plant Relationships, The Mycota 5*, Springer Book. Pp371-388. https://doi.org/10.1007/978-3-031-16503-0_16
9. Allen KS, DeLulio GA, Pyne R, Maman J, Guo L, Wick RL, Simon J, Gershenson A, **Ma L-J***. 2022, Identification of novel basil downy mildew resistance genes using *de novo* comparative transcriptomics. **bioRxiv**, <https://doi.org/10.1101/2022.05.23.491563>
10. Li M, Xie L, Wang M, Lin Y, Zhong J, Zhang Y, Zeng J, Kong G, Xi P, Li H, **Ma L-J***, Jiang Z*. FoQDE2-dependent miRNA promotes *Fusarium oxysporum* f. sp. *cubense* virulence by silencing a glycosyl hydrolase coding gene expression. *PLoS Pathog* **18**, e1010157 (2022).
11. Guo L, Yu, H-L, Wang B, Vescio K, DeLulio GA, Yang H, Berg A, Zhang L, Edel-Hermann V, Steinberg C, Kistler HC and **Ma L-J***. 2021. Metatranscriptomic comparison of endophytic and pathogenic *Fusarium*–*Arabidopsis* interactions reveals plant transcriptional plasticity. *MPMI* 34, 1071–1083, <https://doi.org/10.1094/MPMI-03-21-0063-R>
12. Zhang Y, Kao P-L, Rampal A, Mafu S, Savinov SN, and **Ma L-J***. 2021. High-throughput screening assays to identify plant natural products with antifungal properties against *Fusarium oxysporum*. In Jeffery Colman (Eds). *Fusarium Wilt, Methods in Molecular Biology*, Springer Nature. https://doi.org/10.1007/978-1-0716-1795-3_14
13. Sohrab V[#], López-Díaz C, Di Pietro A, Ma LJ, Ayhan DH. TEfinder: A Bioinformatics Pipeline for Detecting New Transposable Element Insertion Events in Next-Generation Sequencing Data. *Genes (Basel)*. 2021. doi: 10.3390/genes12020224. PMID: 33557410.

14. Viljoen, A., Ma, L.-J., & Molina, A. B. 2020. Fusarium wilt (Panama disease) and monoculture banana production: Resurgence of a century-old disease. In A. Records & J. Ristaino (Eds.), *Emerging plant diseases and global food security*. St Paul: APS Press. 159-184.
15. Yang H, Yu H, Ma L-J*. 2020. Accessory Chromosomes in *Fusarium oxysporum*. **Phytopathology** 110:1488-1496. <https://doi.org/10.1094/PHYTO-03-20-0069-IA>
16. Yu H[‡], Ayhan DH[‡], Diener A., Ma L-J*. 2020. [Genome Sequence of *Fusarium oxysporum* f. sp. *matthiolae*, a Brassicaceae Pathogen](https://doi.org/10.1094/MPMI-11-19-0324-A). **Molecular Plant-Microbe Interactions** 33(4): 569-572. <https://doi.org/10.1094/MPMI-11-19-0324-A>
17. Zhang Y[‡], He Y[‡], Turra D, Zhou S, Ayhan DH[‡], DeJulio AG[‡], Guo L[‡], Broz K, Wiederhold N, Coleman JJ, O'Donnell K, Youngster I, McAdam AJ, Savinov S, Shea T, Young S, Zeng Q, Rep M, Schwartz DC, Di Pietro A, Kistler HC, Ma L-J*. 2020. The genome of an opportunistic fungal pathogen *Fusarium oxysporum* carries a unique set of lineage-specific chromosomes. **Communication Biology** <https://doi.org/10.1038/s42003-020-0770-2>
18. Liu S, Lin J, Zhang Y[‡], Liu N, Viljoen A, Mostert D, Zuo C, Hu C, Bi F, Gao H, Sheng O, Deng G, Yang Q, Dong T, Dou Tongxin, Yi G*, Ma L-J* and Li C*. 2020. Fusaric acid instigates the invasion of banana by *Fusarium oxysporum* f. sp. *cubense* TR4. **New Phytologist** 225(2), 913-929. <https://doi.org/10.1111/nph.16193>
19. Wang, Bo, Houlin Yu, Yanyan Jia, Quanbin Dong, Christian Steinberg, Claude Alabouvette, Veronique Edel-Hermann, et al. 2020. “Chromosome-Scale Genome Assembly of *Fusarium Oxysporum* Strain Fo47, a Fungal Endophyte and Biocontrol Agent.” **MPMI** 33(9), 1108-1111. <https://doi.org/10.1094/MPMI-05-20-0116-A>
20. Ma, L-J* and Xu JR. 2019. Shuttling effector genes through mini-chromosomes. **PLoS Genet** 15(9): e1008345. <https://doi.org/10.1371/journal.pgen.1008345>
21. Gao S, Gold SE, Wisecaver JH, Zhang Y[‡], Guo L[‡], Ma L-J, Rokas A, Glenn AE*. 2019. Genome-wide analysis of *Fusarium verticillioides* reveals inter-kingdom contribution of horizontal gene transfer to the expansion of metabolism. **Fungal Genetics and Biology** 128, 60-73. 10.1016/j.fgb.2019.04.002
22. Milo-Cochavi S, Pareek M, Delulio G[‡], Almog Y, Anand G, Ma L-J, Covo S*. 2019. The response to the DNA damaging agent methyl methanesulfonate in a fungal plant pathogen. **Fungal Biology** 123 (5), 408-422. doi: 10.1016/j.funbio.2019.03.007
23. Anand G, Waiger D, Vital N, Maman J[‡], Ma L-J, Covo S*. 2019. How does *Fusarium oxysporum* sense and respond to nicotinaldehyde, an inhibitor of the NAD⁺ salvage biosynthesis pathway? **Frontiers in Microbiology** 10, 329. <https://doi.org/10.3389/fmicb.2019.00329>
24. Zhang Y[‡], Guo L[‡] and Ma L-J*. 2018. A computational protocol to analyze meta-transcriptomic data capturing fungal-host interactions. In *Methods in Molecular Biology* vol. 1848. Eds: Ma WB and Wolpert T. Springer pp 207-233. doi: 10.1007/978-1-4939-8724-5_15.
25. Ayhan DH[‡], Lopez-Daz C, Di Pietro A, Ma L-J*. 2018. Improved assembly of reference genome *Fusarium oxysporum* f. sp. *lycopersici* strain Fol4287. **Microbiol. Resour. Announc.** 7:e00910-18. <https://doi.org/10.1128/MRA.00910-18>.
26. Zhao G, Guo L[‡], Zhang Y[‡], Gao L, and Ma L-J. 2018. Identifying TF Binding Motifs from Partial Set of Target Genes and its Application to Regulatory Network Inference, *IEEE/ACM Transactions on Computational Biology and Bioinformatics*. doi: 10.1109/TCBB.2018.2882377
27. DeJulio GA[‡], Guo L[‡], Zhang Y[‡], Goldberg JM, Kistler HC, Ma L-J*. 2018. Kinome expansion in the *Fusarium oxysporum* species complex driven by accessory chromosomes. **mSphere** 13;3(3). pii: e00231-18. doi: 10.1128/mSphere.00231-18.
28. Zhang Y[‡] and Ma L-J*. 2017. Deciphering pathogenicity of *Fusarium oxysporum* from a phylogenomics perspective. In *Advances in Genetics 63: Fungal Phylogenetics and Phylogenomics*. Eds: Wang Z and Townsend J. Elsevier, pp 179-202.
29. Brader G, Compant S, Vescio K[‡], Mitter B, Trognitz F, Ma L-J and Sessitsch A. 2017. Ecology and genomic insights on plant-pathogenic and -nonpathogenic endophytes. **Annu. Rev.**

- Phytopathol.* 55: 61-83. <https://doi.org/10.1146/annurev-phyto-080516-035641>
30. Jelinski NA, Broz K, Jonkers W, **Ma L-J**, Kistler HC*. 2017. Effector gene suites in some soil isolates of *Fusarium oxysporum* are not sufficient predictors of vascular wilt in tomato. **Phytopathology** 107: 842-851. <https://doi.org/10.1094/PHYTO-12-16-0437-R>
 31. van Dam P, Fokkens L, Schmidt SM, Linmans JH, Kistler HC, Ma L-J, and Rep M*. 2016. Effector profiles distinguish formae speciales of *Fusarium oxysporum*. **Environmental microbiology** 10.1111/1462-2920.13445
 32. Guo L‡, Allen KS, Wick RL and **Ma L-J***. 2016. A *de novo* assembly-based pipeline for data mining in plant obligate parasite metatranscriptomics studies. **Frontiers in Plant Science** <http://dx.doi.org/10.3389/fpls.2016.00925>
 33. Guo L‡, Zhao G, Xu JR, Kistler HC, Gao L, and **Ma L-J***. 2016. Compartmentalized Gene regulatory networks of a pathogenic fungus *Fusarium graminearum*. **New Phytologist** 211(2):527-41 doi: 10.1111/nph.13192.
 34. Guo L‡, Breakspear A, Zhao G, Gao L, Xu J-R, Kistler HC, and **Ma L-J***. 2016. Conservation and divergence of cAMP-PKA pathways in plant pathogenic fungi *Fusarium graminearum* and *F. verticillioides*. **Molecular Plant Pathology** 17(2):196-209.
 35. Okagaki LH, Nunes CC, Sailsbery J, Clay B, Brown D, John T, Oh Y, Young N‡, Fitzgerald M, Haas BJ, Zeng Q, Young S, Adiconis X, Fan L, Levin JZ, Mitchell TK, Okubara PA, Farman ML, Kohn LM, Birren BW, **Ma L-J***, and Dean RA*. 2015. Genome Sequences of Three Phytopathogenic Species of the Magnaporthaceae Family of Fungi. **G3: Genes, Genomes, Genetics** g3.115.020057.
 36. Williams AH, Sharma M, Thatcher LF, Azam S, Hane JK, Sperschneider J, ... **Ma L-J**, Varshney RK, Singh KB. 2015. Comparative genomics and prediction of conditionally dispensable sequences in legume-infecting *Fusarium oxysporum* formae speciales facilitates identification of candidate effectors. **BMC genomics** 17 (1), 191, <https://doi.org/10.1186/s12864-016-2486-8>
 37. Wyenandt CA*, Simon JE*, Pyne RM, Homa K, McGrath MT, Zhang S, Raid RN, **Ma L-J**, Wick R, Guo L‡, Madeiras A. 2015. Basil Downy Mildew (*Peronospora belbahrii*): Discoveries and Challenges Relative to Its Control. **Phytopathology** 105:885-94. <https://doi.org/10.1094/PHYTO-02-15-0032-FI>
 38. Ploetz RC, Kema GH, and **Ma L-J**. 2015. Impact of Diseases on Export and Smallholder Production of Banana. **Annual Review of Phytopathology** 53:269–88. 10.1146/annurev-phyto-080614-120305.
 39. Cuomo CA*, Untereiner WA*, **Ma L-J**, Grabherr M, Birren BW. 2015. Draft genome of the cellulolytic fungus *Chaetomium globosum*. **Genome Announcement** 3: e00021-15. 10.1128/genomeA.00021-15
 40. **Ma L-J***. 2014. Horizontal chromosome transfer and rational strategies to manage *Fusarium* vascular wilt diseases. **Molecular Plant Pathology** 15: 763–766. 10.1111/mpp.12171
 41. Guo L‡, **Ma L-J***. 2014. Genomics of wheat pathogen *Fusarium graminearum*. Eds. Dean, R. and Lichens-Park A. *Genomics of Plant-associated Fungi and Oomycetes*. Springer, Massachusetts, United States. 102-122.
 42. **Ma L-J***, Shea T, Young S, Zeng Q, Kistler H. 2014. Genome sequence of *Fusarium oxysporum* f. sp. *melonis* strain NRRL 26406, a fungus causing wilt disease on melon. **Genome Announcement** 2: e00730-14.
 43. Zhang Y‡,[12 co-authors] **Ma L-J**, [12 co-authors]....., Peng Y*. Sun W*. 2014. Specific adaptation of *Ustilaginoidea virens* in occupying host florets revealed by comparative and functional genomics. **Nature Communications** 5: 3849.
 44. Zhao G, Guo L‡, Gao L*, **Ma L-J***. 2013. Inferring Regulatory Networks through Orthologous Gene Mapping. In *Bioinformatics and Biomedicine, 2013 IEEE International Conference* doi: 10.1109/BIBM.2013.6732739. p.76-83.

45. Geiser DM*,[22 co-authors],..... **Ma L-J**,[32 co-authors]. 2013. LETTER TO THE EDITOR: One Fungus, One Name: Defining the genus *Fusarium* in a scientifically robust way that preserves longstanding use. **Phytopathology** 103: 400-408.
46. **Ma L-J***, Geiser D, Proctor RH, Rooney AP, O'Donnell K, Trail F, Gardiner DM, Manners JM, Kazan K. 2013. *Fusarium* Pathogenomics. **Annual Review of Microbiology** 167: 399-416.
47. Kistler HC, Rep M, **Ma L-J**. 2013. Structural dynamics of *Fusarium* genomes In: *Fusarium: genomics, molecular and cellular biology*. Eds. Brown, D.W. and Proctor, R.H., Horizon Scientific Press, Norwich, United Kingdom. 1-41.
48. Manning V,[23 co-authors]....., **Ma L-J***, Ciuffetti L*. 2013. *Pyrenophora tritici-repentis* genome reveals mechanisms that contribute to high genetic variations. **G3: Genes, Genomes, Genetics** 3: 41-63.
49. **Ma L-J**, Rep M, Kistler HC. 2012. Evolution of plant pathogenicity in *Fusarium* species. In Sibley, L. D., B. J. Howlett, et al.. Evolution of virulence in eukaryotic microbes. Hoboken, N.J., Wiley-Blackwell. pp485-500.
50. Amyotte SG, Tan X, Pennerman K, Jimenez M del M, Klosterman SJ, **Ma L-J**, Dobinson KF*, Veronese P*. 2012. Transposable elements in the phytopathogenic *Verticillium* spp.: insights into genome evolution and inter- and intra-specific diversification. **BMC Genomics** 13: 314-334.
51. Klosterman SK,.....[26 co-authors], Dobinson KF*, **Ma L-J***. 2011. *Verticillium* comparative genomics yields insights into niche adaptation by plant vascular wilt pathogens. **PLoS Pathogen** 7: e1002137.
52. O'Connell RJ*,.....[64 co-authors including Zhang JZ†], **L.-J. Ma**, Vaillancourt LJ*. 2012. Life-style transitions in plant pathogenic *Colletotrichum* fungi deciphered by genome and transcriptome analyses. **Nature Genetics** 44: 1060-1065.
53. Grabherr MG, Mauceli E, **Ma L-J***. 2011. Genome Sequencing and Assembly. Eds. Xu JR and Bluhm BH. **Methods Molecular Biology**, Vol. 722. Humana Press, pp1-9.
54. Desjardins CA,[15 co-authors], **Ma L-J**, [24 co-authors]....., Cuomo CA. 2011. Comparative Genomic Analysis of Human Fungal Pathogens Causing Paracoccidioidomycosis. **PLoS Genetics** 7: e1002345.
55. Gao Q.,[15 co-authors], **Ma L-J**, [5 co-authors]....., Wang C. 2011. Genome Sequencing and Comparative Transcriptomics of the Model Entomopathogenic Fungi *Metarhizium anisopliae* and *M. acridum*. **PLoS Genet.** 7: e1001264.
56. **Ma L-J**, Charlotte van der Does H, [60 co-authors]....., Rep M. 2010. *Fusarium* comparative genomics reveals lineage-specific chromosomes related to pathogenicity. **Nature** 465:367-373.
57. Kumar L, Breakspear A, Menke J, Kistler HC, **Ma L-J***, Xie X*. 2010. Systematic Discovery of regulatory motifs in *Fusarium* by comparison of four *Fusarium* genomes. **BMC Genomics** 11:208.
58. **Ma L-J**, Fedorova ND*. 2010. A practical guide to fungal genome projects: strategy, technology, cost and completion. **Mycology: An International Journal on Fungal Biology** 1: 9-24.
59. Stajich JE,[29 co-authors], **Ma L-J**, [17 co-authors]..... Pukkila PJ. 2010. Insights into evolution of multicellular fungi from the assembled chromosomes of the mushroom *Coprinopsis cinerea* (*Coprinus cinereus*). **PNAS** 107:11889-11894.
60. **Ma L-J***, A. S. Ibrahim, C. Skory, M. G. Grabherr, G. Burger, F. Lang, A. Abe, M. Butler, [25 co-authors]....., Wickes BL. 2009 Genomic analysis of a basal fungus *Rhizopus oryzae* reveals whole genome duplication. **PLoS Genetics** 5: e1000549.
61. Coleman JJ, Rounsley SD, Rodriguez-Carres M, Kuo A, Wasmann CC, Grimwood J, Schmutz J, Taga M, White GJ, Zhou S, Schwartz DC, Freitag M, **Ma L-J**, [29 co-authors]....., VanEtten H. 2009. The genome of *Nectria haematococca*: contribution of supernumerary chromosomes to gene expansion. **PLoS Genetics** 5: e1000618.
62. Haas B,[49 co-authors], **Ma L-J**, [49 co-authors], Nusbaum C. 2009. Genome sequence and comparative analysis of the Irish potato famine pathogen *Phytophthora infestans*. **Nature** 461: 393-398.

63. Cuomo CA, Güldener U, Xu J-R, Trail F, Turgeon BG, Di Pietro A, Walton JD, **Ma L-J**,[35 co-authors], Kistler HC.. 2007. The *Fusarium graminearum* genome reveals a link between localized polymorphism and pathogen specialization. **Science** 317: 1400-1402.
64. Kämper J, Kahmann R, Bölker M, **Ma L-J**, [70 co-authors]. 2006. Insights from the genome of the biotrophic fungal plant pathogen *Ustilago maydis*. **Nature** 444: 97-101.
65. Rep M, Duyvesteijn RG, Gale L, Usgaard T, Cornelissen BJ, **Ma L-J**, Ward TJ. 2006. The presence of GC-AG introns in *Neurospora crassa* and other euascomycetes determined from analyses of complete genomes: implications for automated gene prediction. **Genomics** 87:338-47.
66. **Ma L-J**, Catranis CM, Starmer WT and Rogers SO. 2005. The significance and implications of filamentous fungi in glacial ice. Eds. Castello JD and Rogers SO, *Life in Ancient Ice*. New Jersey: Princeton University Press. pp 159-180.
67. Rogers SO, **Ma L-J**, Zhao Y, Theraisnathan V, Zhang G, Catranis CM, Starmer WT, Castello JD. 2005. Recommendations for elimination of contaminants and authentication of isolates in ancient ice cores. Eds. Castello JD and Rogers SO, *Life in Ancient Ice*. New Jersey: Princeton University Press. pp. 5-21.
68. Galagan JE, Calvo SE, Cuomo C, **Ma L-J**,[62 co-authors], Birren BW. Sequencing and Comparative Analysis of *Aspergillus nidulans*. **Nature** 438:1105-15.
69. Galagan JE, Henn MR, **Ma L-J**, Cuomo CA., Birren B. 2005. Genomics of the fungal kingdom: insights into eukaryotic biology. **Genome Research** 15:1620-31.
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71. Starmer WT, Fell JW, Catranis CM, Aberdeen V, **Ma L-J**, Zhou S, Rogers SO. 2005. Yeasts in the genus *Rhodotorula* recovered from the Greenland ice sheet. Eds. Castello JD and Rogers SO, *Life in Ancient Ice*. New Jersey: Princeton University Press. pp181-195.
72. Rogers SO, Theraisnathan V, **Ma L-J**, Zhao Y, Zhang G, Shin SG, Castello JD, Starmer WT. 2004. Comparison of protocols to decontaminate environmental ice samples for biological and molecular examinations. **Appl. Environ. Microbiol.**70: 2540-2544.
73. Ramussen JP, Taylor AH, **Ma L-J**, Purcell S, Kempken F, Catcheside DEA. 2004. Guest, A transposable element belonging to the Tc1/Mariner superfamily is an ancient invader of *Neurospora* genomes. **Fungal Genetics and Biology** 41:52-61.
74. Galagan JE, Calvo SE, Borkovich KA, Selker EU, Read ND, FitzHugh W, **Ma L-J**,[70 co-authors], Birren BW. 2003. The Genome Sequence of the Filamentous Fungus *Neurospora crassa*. **Nature** 422:859-868.
75. **Ma L-J**, Catranis CM, Starmer WT, Rogers SO. 2000. Detection and characterization of ancient fungi entrapped in glacial ice. **Mycologia** 92:286-295.

ORAL PRESENTATIONS

Keynote and Plenary sections:

- 2024** **Antifungal-resistance from both human health and plant protection perspectives. 2024.** 3rd International Conference on Antimicrobial resistance. Novi Sad, Serbia
- 2023** **Accessory chromosomes in the species complex of *Fusarium oxysporum*. 2023.** 2nd International Molecular Plant Protection Congress. Istanbul, Turkey
- 2022** ***Fusarium oxysporum*: a fungal species full of surprises. 2022** International Symposium on Plant Biotic Interactions and Plant Health. Huazhong Agricultural University On-line
- 2019** **Lineage-specific chromosomes of the *Fusarium oxysporum* species complex** 30th Fungal Genetic Conference, Asilomar, CA, USA.
- 2018** **Genome evolution & functional adaptation of Species Complex *F. oxysporum*** 14th European Conference of Fungal Genetics, Haifa, Israel.
- 2017** **Dissecting wilt diseases using *Fusarium oxysporum*–*Arabidopsis* pathosystem** 15th Congress of the Mediterranean Phytopathological Union, Cordoba, Spain.

- 2016** International Congress on MPMI (XVII), Portland, Oregon, USA.
2013 International Congress of Plant Pathology (X). Beijing, China.
 International Fusarium Workshop (XI). Hanzhou, China.
 Midwestern Filamentous Fungal Symposium. University of Missouri-Kansas City.

Oral presentations at international/national conferences/Webinar:

- 2022** Stress Biology seminar series Webinar, China.
 What's New in MPMI Webinar, USA
- 2018** Cellular and Molecular Fungal Biology Gordon Research Conference, NH, USA.
 International Congress of Plant Protection. Boston MA, USA.
- 2017** Human Fungal Pathogenesis. La Colle sur Loup, France.
 The 5th International Conference: Biotic Plant Interactions, Xiamen, China.
- 2016** The 3rd Congress International of Biotechnology and Biodiversity, Guayaquil, Ecuador.
- 2015** American Phytopathological Society (APS), Pasadena CA, USA.
 Plant & Animal Genome (PAG). San Diego, CA, USA.
- 2014** Current trends in Biomedicine: Fungal Pathogens. Baeza, Spain.
 The 10th International Mycological Congress, Bangkok, Thailand.
 Gordon Conference: Cellular & Molecular Fungal Biology. Holderness, NH, USA.
 Symposium of NSF IGERT Program. University of Arizona, Arizona, USA.
- 2013** Third International Conference: Biotic Plant Interactions, Shanxi, China.
- 2012** 5th International Symposium: Tropical and Subtropical Fruits Guangzhou China.
 USDA/NIFA: Microbial Programs Awardee Meeting. Washington DC, USA.
 ECFG XI. Fusarium Satellite meeting. Marburg, Germany.
 Symposium on Molecular Plant Pathology at Academia Sinica. Taipei, Taiwan.
- 2011** Second China's Fungal Genome Initiative. Kunming, Yunnan China.
 APS. Honolulu, Hawaii, USA.
 Mycological Society of America. Fairbanks, Alaska, USA.
 Plant Pathogenomics Conference. Shenzhen, Guangdong, China.

Departmental seminars:

- 2024** Why Genomics. University of Novi Sad, Serbia
 Swammerdam Institute for Life Sciences, University of Amsterdam, the Netherlands
- 2023** Gene Michaels Medical Mycology Symposium. University of Georgia
- 2022** INRAE Versailles-Grignon: Evo-MPMI webinar, France.
 Department of Plant Biology University of Vermont, USA.
 Institute of Fruit Tree Research, Guangdong Academy of Agricultural Sciences, China
- 2021** Plant and Environmental Sciences, Virginia Tech, USA.
 Fusarium biology Minnesota USA
- 2020** Department of Genetics and Biochemistry, Clemson University. Blacksburg VA, USA.
- 2019** Harvard Herbaria Seminar Series, Harvard University. Cambridge, MA, USA.
 Department of Botany and Plant Pathology, Purdue, West Lafayette, IL, USA.
 Department of Sustainable use of Renewable Natural Resources, University of Helsinki, Helsinki Finland.
- 2018** Department of Biological Sciences, Smith College, Northampton, MA, USA
 Shangdong Agricultural University. Tai-an, China.
- 2017** Department of Molecular Biology, Harvard Medical School. Cambridge MA, USA.
 Department of Biology, Clark University. MA, USA.
- 2016** M2P2 retreat, Dartmouth College. NH, USA.
- 2015** Department of Plant Pathology, UC Riverside. CA, USA.
- 2014** Department of Plant Science, University of Maryland, College Park, MD, USA.
- 2013** Department of Plant Pathology, National Taiwan University. Taipei, Taiwan.
- 2012** Department of Plant Pathology, University of Kentucky, Lexington, KY, USA.
 SciLifeLab, University Uppsala, Uppsala, Sweden.
- 2011** Plant Pathology Department, North Carolina State University, Raleigh, NC, USA.

LABORATORY TRAINEES

Current

Postdoctoral: Kelly Allen

PhD students: Rachel Cole (PB), Madison Newman (OEB), Melanie Wu (MCB),
Joni Ray Campilan (PB), and Gengtian Li (MCB)

Former (current position)

Postdoctoral: Domingo Martinez Soto (Assistant Professor Centro de Investigación Científica y de Educación Superior de Ensenada, Baja California)

Shira Milo Cochavi (Postdoc at The Hebrew University of Jerusalem)

Dilay Hazel Ayhan (Advanced Agricultural Sciences, Peking University)

Yong Zhang (Bioinformatician NIH).

Li Guo (Professor Xi'an Jiaotong University).

He Yang, Joshua Salisbury, Amal Abu Almakarem (industry jobs).

Fulbright Scholar: Mladen Petreš (University of Novi Sad, Serbia),

Adil Essarioui (INRA, Morocco)

Visiting Scientists: Jingbo Zhang (Huazhong Agricultural University).

Sheng Deng (Jiangsu Academy of Agricultural Sciences).

Cristina López Díaz (Department of Genetics, University of Cordoba).

Minhui Li (from China Guangdong Agricultural University).

Chunyu Li (from China Guangdong Agricultural Research Institute).

Diana Mostert (Stellenbosch University, South Africa).

Jingze Zhang (Associate professor at Hangzhou University).

PhD students: Gregory DeJulio: PB awarded 2018, current NY Food and Safety,

He Yang: MCB award 2019, pharmaceutical company

Yong Zhang: OEB award 2019, current a bioinformatician at NIH.

Dilay Hazel Ayhan: MCB award 2021, Advanced Agricultural Sciences, Peking University

Kelly Allen: PB awarded 2022, current a postdoc in my lab.

Houlin Yu (PB), awarded 2023, current a research scientist at the Broad Institute.

MS students: Andrew Berg: PB awarded 2013, current UMass Amherst OIT,

Taylor Taguiar: PB awarded 2018, current Nature's Remedy,

Kathryn Vescio: PB awarded 2019, current The Heirloom Collective,

Jacob Maman: MCB, awarded 2021.

Dan Norment: MCB, awarded 2022.

CLASSROOM TEACHING

General Biochemistry lab for Majors (BIOCHEM 426): 2018 – 2022 Fall semester.

BIOCHEM426 is the lab course required for all BMB Undergraduate Majors.

Class size of 24 undergraduate students.

Biochemistry Junior Year Writing (BIOCHEM 430): 2022, 2023 Spring semester.

BIOCHEM430 is required for all BMB Undergraduate Majors.

Class size of 18 undergraduate students.

Journal club (BIOCHEM 697E): 2011 (Evolutionary Genomics), 2014 and 2015, 2016-2023 both spring & fall semesters (molecular fungal host interactions).

Class size of ~10 students (mixed PhD/MS and undergraduate students)

High school pre-college summer class (BIOCHEM 190): 2018-2019, summer semester. This is a two-week summer intensive pre-college course for high school students from local high schools to students from out of the state and international students.

Class size of ~10 high school students.

Global Issues/Applied Biology (NATSCI 494I): spring 2015, 2016, and 2018 co-taught.

NATSCI494I is an Integrative Experience course that consists of three case study modules. I taught one

module together with Dr. Vierling for 2015 and 2016 semesters and taught the module by myself in 2018. Class size of ~90 undergraduate students.

Molecular Biology (BIOCHEM 275): 2014 – 2016, spring semesters, co-taught. BIOCHEM275 is an entry-level core course required for all BMB Undergraduate Majors. Class size of ~100 undergraduate students.

Advanced Molecular Biology (BIOCHEM/MCB 642): Fall 2013, co-taught. BIOCHEM/MCB 642 is a required course for MCB PhD/MS and BMB MS programs. Class size of 46 graduate students (mixed PhD/MS candidates)

Topics in Plant Cell and Molecular Biology (BIOCHEM 697P): Spring 2013 co-taught. Advanced discussion of most recent literature related to plant cell and molecular biology. Class size of 6 students (mixed PhD candidates/senior undergraduate students).

Applications of Genomics (PLSOILIN 597Z): Spring 2012. PLSOILIN 597Z is a course focusing on sequencing technologies and their broad applications. Class size of 11 students (mixed PhD and undergraduate students).

Comparative Genomics (PLSOILIN 590C): Fall 2012. PLSOILIN 590C introduces the principles of comparative genomics and their applications. Class size of 10 students (mixed PhD and undergraduate students).

PROFESSIONAL SERVICES

Board member

2022-2028 Fungal Genetics Policy Steering Committee
2021-2024 Holyoke Community Charter School Board

Editorial board

2021 – now Stress Biology (Senior Editor)
2021 – now PNAS Nexus (Board of Reviewing Editors)
2020 – now Molecular Plant Molecular Interaction (Senior Editor)
2020 – now Genome Biology and Evolution (Associate Editor)
2018 – now Frontiers in Cellular and Infection Microbiology (Associate Editor)

Journal Referee

Journals I reviewed (average 10 manuscripts per year)
Nature Communication, Genome Biology, Communication Biology, PloS Pathogen, PloS genetics, Genetics, Plant Science, New Phytologist, Fungal Genetics and Biology, Frontiers in Microbiology (3), Genome Biology and Evolution, Molecular Biology and Evolution, Molecular Plant Pathology, MPMI, mSphere.

NIH study sections

2021: NIH study section: *Pathophysiology of Eye Disease 1 – PEDI*

Grant Review Manager

2016-2018 US – Israel Binational Agricultural Research and Development (BARD)

Grant Review Panelist

2023 NIFA/NSF, *Plant Biotic Interaction*
2022 USDA-ARS
2021 Joint Genome Institute, *2020 Community Science Program*
2021 NIFA/NSF, *Plant Biotic Interaction*
2021 NSF, *Enabling Discovery through GENomic Tools (EDGE)*
2021 USDA-ARS

- 2019 *Joint Genome Institute, 2020 Community Science Program*
- 2019 *NIFA/NSF, Plant Biotic Interaction*
- 2019 *US – Israel Binational Agricultural Research and Development (BARD)*
- 2019. *The South African Research Chairs Initiative (SARChI)*
- 2018 *National Aeronautics and Space Administration, Space Biology*
- 2018 *NIFA/NSF, Plant Biotic Interaction panel*
- 2017 *National Science Foundation, Fungal and Microbial Development panel*
- 2016 *United States – Israel BARD*
- 2016 *National Aeronautics and Space Administration, Space Biology.*

Ad hoc reviewers for grants

- 2021 *UK Research Council*
- 2021 *NOW Open Competition*
- 2020 *NIFA/NSF, Plant Biotic Interaction*
- 2018 *South Africa NRF, Research and Innovation Support and Advancement*
- 2013 *NSF, Plant Genome Research Program*
- 2013 *NSF, Symbiosis, Defense and Self-recognition Program*
- 2011 *National Science Foundation, Molecular and Cellular Evolution Advisory Panel*
- 2010 *DOE, Plant Genome Sequencing program review panel*
- 2009 *NSF, Plant Genome Sequencing program review panel*
- 2009 *NSF/USDA, Microbial Genome Sequencing program review panel*
- 2012 *Poland National Science Center, Auxiliary Review Bioinformatics, Biocomputing*

Symposium and workshop organizer

- 2022 *Symposium:* PanGenome. Fungal Genetic Conference.
- 2018 *Facilitator:* National Research Mentoring Network
- 2018 *Symposium:* Genomics-based approaches facilitate diagnostic and population genetic marker development for plant pathogens. International Congress on Plant Protection.
- 2018 *Symposium:* Genomics-based approaches facilitate diagnostic and population genetic marker development for plant pathogens. International Mycological Congress.
- 2017 *Symposium:* Genomics-based approaches facilitate diagnostic and population genetic marker development for plant pathogens. The American Phytopathogenic Society.
- 2016 *Plant Science Research Network: Cyberinfrastructure Strategic Retreat*
- 2014-2016 *Chair (2016), vice chair (2015) and a member of Genetics Genomics and Ecology community associated with American Phytopathological Society.*
- 2012-2016 *Chair (2016), vice chair (2015) and a member of the Genetics & Cell Biology Committee at Mycological Society of America.*
- 2016 *Symposium:* BIG DATA (OMICS). Fungal Genetic Conference.
- 2015 *Workshop:* RNA-sequence analysis. The American Phytopathogenic Society.
- 2014 *Symposium:* Dynamics of genome evolution. Fungal Genetic Conference.
- 2013 *Symposium:* Genetics and genomics of fungal host-specificity and evasion of host immunity. International Mycological Congress.
- 2013 *Workshop:* Fungal Genomics. National Taiwan University. Taipei Taiwan.
- 2011 *Workshop:* Fungal Pathogen Genomics and Proteomics, International Congress of Plant Pathology.
- 2011 *Workshop:* China Fungal Genome Initiative. Kunming, Yunna, China.
- 2010 *Symposium:* Secondary Metabolite, American Society of Microbiology.
- 2010 *Workshop:* Fungal Genomics. Massey University, New Zealand.
- 2009-2011 *Chair (2011), Vice Chair (2010) and a member of Diversity and Equality community associated with American Phytopathological Society.*