

BIOGRAPHICAL SKETCH

NAME Lin, Xiaorong		POSITION TITLE Professor	
EDUCATION/TRAINING			
INSTITUTION AND LOCATION	DEGREE	YEAR(s)	FIELD OF STUDY
Dalian University of Technology, China	B.S. (honors)	1992-1996	Chemical Engineering
Dalian Institute of Chemical Physics, China	M.S.	1996-1999	Chemical Engineering
University of Georgia	Ph.D.	1999-2003	Molecular Genetics and Fungal Biology
Duke University Medical Center	Postdoc	2003-2007	Medical Mycology

A. Positions and Honors.

Positions and Employment

1996 – 1999	Graduate Research Assistant, Dalian Institute of Chemical Physics, Chinese Academy of Sciences, China
1999 – 2003	Graduate Research Assistant, Department of Plant Biology, University of Georgia, GA
2003 – 2007	Postdoctoral Research Associate, Department of Molecular Genetics and Microbiology, Duke University Medical Center, NC
2008 – 2013	Tenure-Track Assistant Professor, Department of Biology, Texas A&M University, TX
2013 – 2017	Associate Professor, Department of Biology, Texas A&M University, TX
2014 – 2017	Joint Associate Professor, Department of Microbiology and Immunology, Texas A&M Health Science Center, TX
2017 – present	Professor, Department of Microbiology, University of Georgia, GA

Professional Experience and Membership

2001 – 2003	Member, Mycological Society of America (MSA)
2002 – 2003	President, the Mycology Discussion Group, University of Georgia
2004 – present	Member, American Society of Microbiology (ASM)
2012 – present	Member, Genetics Society of America (GSA)
2013 – present	Member, American Association for the Advancement of Science (AAAS)
2015 – present	Member, Medical Mycological Society of the Americas (MMSA)
2016 – present	Scientific Advisory Board, FEBS Advanced Lecture Course: Human Fungal Pathogens (HFP2017)
2017	Chair, “Human Fungal Pathogens” con-current session in Fungal Genetics Conference
2008 – 2010	Academic editor, <i>PLoS ONE</i>
2009 – 2013	Associated faculty member, <i>Faculty of 1000</i>
2009 – 2015	Member of the editorial board, <i>Eukaryotic Cell</i>
2013 – present	Faculty member, <i>Faculty of 1000</i>
2014 – present	Associate editor, <i>PLoS Pathogens</i>
2015 – present	Associate editor, <i>Fungal Genetics and Biology</i>
2017 – present	Associate editor, <i>mBio</i>
2017 – present	Associate editor, <i>PLoS Genetics</i>
2004 – Present	Ad hoc reviewer: <i>Nature</i> , <i>PNAS</i> , <i>PLoS Biology</i> , <i>PLoS Genetics</i> , <i>PLoS Pathogens</i> , <i>Cellular Microbiology</i> , <i>Nature Review Microbiology</i> , <i>Microbiology and Molecular Biology Reviews</i> , <i>Genetics</i> , <i>mBio</i> , <i>Infection and Immunity</i> , <i>Applied and Environmental Microbiology</i> , <i>Eukaryotic Cell</i> , <i>Antimicrobial Agents and Chemotherapy</i> , <i>Fungal Genetics and Biology</i> , <i>BMC Microbiology</i> , <i>Microbiology</i> , <i>Fungal Biology Reviews</i> , <i>PLoS ONE</i> , <i>Journal of Medical</i>

Microbiology, FEMS Microbiology Letters, Future Microbiology, Medical Mycology, Mycoses, HIV therapy, BMC Genomics, Environmental Microbiology, Molecular Microbiology, JoVE, mSphere, Scientific Reports, Journal of Microbiology, Molecular Plant Pathology

2012	Ad hoc member, ZRG1 IDM S study section
2013	Ad hoc member, NIH PTHE study section, NIH AOIC study section
2014	Ad hoc member, NIH F13 Infectious Diseases and Microbiology Fellowship Review Panel, NIH IHD study section, the San Antonio Life Sciences Institute (SALSI) Innovation Challenge grant program
2015	Ad hoc member, Polish-U.S. Fulbright Awards, NIH AOIC study section
2016 – Present	Panel member, NIH AOIC study section

Teaching Experience

2000 – 2001	Teaching assistant, BTNY 1210 (Introduction to Plant Biology), University of Georgia, GA
2004	Teaching Assistant, Molecular Mycology, Marine Biological Laboratory, MA
2008	Guest lecturer, BESC 489 (Molds and Mushrooms), Texas A&M University, TX
2009	Instructor, BIOL481 (Departmental Colloquium), Texas A&M University, TX
2009 – 2017	Instructor, BIOL437 (Molecular and Medical Mycology/ spring), Texas A&M University, TX
2010 – 2017	Instructor, BIOL351 (Fundamentals of Microbiology/ fall), Texas A&M University, TX
2010 – 2017	Co-Instructor, BIOL681 (Eukaryotic Microbiology/ spring & fall), Texas A&M University, TX
2013	Faculty, Molecular Mycology, Marine Biological Laboratory, MA
2014	Faculty, Molecular Mycology, Marine Biological Laboratory, MA
2015 – present	Director, Molecular Mycology summer course, Marine Biological Laboratory, MA

Honors

1992 – 1996	Academic Excellence Scholarship (first class), Dalian University of Technology, China
1996	Graduate with Distinction, Department of Education, Liaoning Province, China
1997 – 1998	Elite Graduate Student Scholarship, Chinese Academy of Sciences, China
1999 – 2000	Graduate School Fellowship, University of Georgia
2002	Best Speaker Award at Plant Biology Graduate Student Symposium, University of Georgia
2001, 2003	Plant Biology Department Palfrey Award, University of Georgia
2002 – 2003	Graduate School Fellowship, University of Georgia
2003	Francis A. Uecker Student Mentor Award, Mycological Society of America
2005 - 2007	NIH Postdoctoral Fellowship, MMPTP, Duke University
2009	<i>Eukaryotic Cell</i> Outstanding Young Investigator Award, American Society of Microbiology
2009	Teaching Excellence Award (SLATE), Texas A&M University
2009	ICAAC Young Investigator Award, American Society of Microbiology
2011	Teaching Excellence Award (SRATE), Texas A&M University
2012	Nominee of “40 under Forty”, the University of Georgia Alumni Association
2013	The Burroughs Wellcome Fund (BWF) Investigator in Pathogenesis of Infectious Disease
2014	Nominee of co-director for Molecular Mycology, Marine Biological Laboratory (approved)
2014	Nominee of the 2015 Edith and Peter O'Donnell Science Awards (the Academy of Medicine, Engineering & Science of Texas)
2016	Nominee of the 2017 Edith and Peter O'Donnell Science Awards (the Academy of Medicine, Engineering & Science of Texas)
2017	Selected Chair for 30 th Fungal Genetics Conference (Genetics Society of America/GSA)

B. Peer-reviewed Publications (* corresponding author).

Published Articles and Articles in Press

54. Xu X[#], Lin J[#], Zhao Y, Kirkman E, Yee-Seul So, Bahn Y, and Lin X*. (2017) Glucosamine stimulates pheromone-independent dimorphic transition in *Cryptococcus neoformans* by promoting Crz1 nuclear translocation. ***PLoS Genetics*** (in press)

53. Gyawali R, Zhao Y, Lin J, Fan Y, Xu X, Upadhyay S, and **Lin X***. (2017) Pheromone Independent Unisexual Development in *Cryptococcus neoformans*. **PLoS Genetics** 13(5):e1006772. PMID: PMC5435349
(Recommended by *Faculty of 1000*)
52. Gyawali R, Upadhyay S, Way J, and **Lin X***. (2016) A family of secretory proteins are associated with different morphotypes in *Cryptococcus neoformans*. **Applied and Environmental Microbiology** pii: AEM.02967-16. PMID: PMC5311391
51. Upadhyay S[#], Xu X[#], and **Lin X***. (2016) Interactions between fungal melanin enzymes and their atypical recruitment to the secretory pathway by palmitoylation. **mBio** 7(6) pii: e01925-16 PMID: PMC5120144
50. Upadhyay S[#], Xu X[#], Lowry D, Jackson JC, Roberson RW, and **Lin X***. (2016) Subcellular compartmentalization and trafficking of the biosynthetic machinery for fungal melanin. **Cell Reports** 14(11): 2511–2518. PMID: PMC4805463
49. Xu X, Zhao Y, Kirkman E, and **Lin X***. (2016) Secreted Acb1 contributes to the yeast-to-hypha transition in *Cryptococcus neoformans*. **Applied and Environmental Microbiology** 82:1069 –1079. PMID: PMC4751841
48. Chacko N[#], Zhao Y[#], Yang E, Wang L, Cai J, and **Lin X***. (2015) The lncRNA *RZE1* controls cryptococcal morphological transition. **PLoS Genetics** 11(11): e1005692. PMID: PMC4654512
(Recommended by *Faculty of 1000*)
47. Zhai B, Wozniak KL, Masso-Silva J, Upadhyay S, Hole C, Rivera A*, Wormley FL*, and **Lin X***. (2015) Development of protective inflammation and cell-mediated immunity against *Cryptococcus neoformans* after exposure to hyphal mutants. **mBio** 6(5):e01433-15. PMID: PMC4611043
46. Wang L* and **Lin X***. (2015) The morphotype heterogeneity in *Cryptococcus neoformans*. **Current Opinion in Microbiology** 26:60–64
45. Idnurm A* and **Lin X***. (2015) Rising to the challenge of multiple *Cryptococcus* species and the diseases they cause. **Fungal Genetics and Biology** pii: S1087-1845(15)00098-5. PMID: PMC4461476
44. Lin J, Idnurm A*, and **Lin X***. (2015) Morphology and its underlying genetic regulation impact the interaction between *Cryptococcus neoformans* and its hosts. **Medical Mycology** 199:887-96. PMID: PMC4577057
43. **Lin X***, Chacko N, Wang L, and Pavuluri Y. (2015) Generation of stable mutants and targeted gene deletion strains in *Cryptococcus neoformans* through electroporation. **Medical Mycology** 53(3):225-34. PMID: PMC4574871
42. **Lin X***, Alspaugh JA, Liu H, and Harris S. (2015) Fungal Morphogenesis, in *Human Fungal Pathogens*, edited by Casadevall A, Mitchell AP, Berman J, Kwon-Chung J, Perfect JR, and Heitman J. **Cold Spring Harb Perspect Med** 5(2):a019679
41. Yang E, Chow W, Wang G, Woo CY, Lau KP, Yuen K, **Lin X**, and Cai C*. (2014) Signature gene expression reveals novel clues to the molecular mechanisms of dimorphic transition in *Penicillium marneffeii*. **PLoS Genetics** 10(10):e1004662. PMID: PMC4199489
40. Wang L*, Tian X, Upadhyay S, Foyle D, Gyawali R, Yang E, Cai J, and **Lin X***. (2014) Morphotype transition and sex are genetically associated in a ubiquitous environmental pathogen. **PLoS Pathogens** 10(6):e1004185. PMID: PMC4047104
(Featured Research Article by *PLoS Pathogens*)
39. Upadhyay S, Torres G, and **Lin X***. (2013) Laccases involved in DHN melanin biosynthesis in *Aspergillus fumigatus* are regulated by developmental factors and copper hemostasis. **Eukaryotic Cell** 12(12):1641-52. PMID: PMC388956
38. Tian X and **Lin X***. (2013) Matricellular protein Cfl1 regulates microbial differentiation. **Communicative & Integrative Biology** 6:e26444. PMID: PMC3926872
37. Huang J, Foyle D, **Lin X**, and Yang J. (2013) Total synthesis and biological evaluation of an antifungal tricyclic o-hydroxy-p-quinone methide diterpenoid. **The Journal of Organic Chemistry** 78(18):9166-73. PMID: PMC3843042

36. Chacko N and **Lin X***. (2013) Non coding RNAs in the development and pathogenesis of eukaryotic microbes. **Applied Microbiology and Biotechnology**. 97(18):7989-97. PMID: PMC3791853
35. Wang L, Tian X, Gyawali R, and **Lin X***. (2013) Fungal adhesion protein guides community behaviors and autoinduction in a paracrine manner. **Proc. Natl. Acad. Sci USA** 110(28):11571-6. PMID: PMC3710841 (Recommended by *Faculty of 1000*)
34. Zhai B, Zhu P, Foyle D, Upadhyay S, Idnurm A*, and **Lin X***. (2013) Congenic strains of the filamentous form of *Cryptococcus neoformans* for studies of fungal morphogenesis and virulence. **Infection and Immunity** 81(7): 2626-2637. PMID: PMC3697605
33. Zhu P, Zhai B, **Lin X***, and Idnurm A*. (2013) Congenic strains for the genetic analysis of virulence traits in *Cryptococcus gattii*. **Infection and Immunity** 81(7): 2616-2625. PMID: PMC3697594
32. Gyawali R and **Lin X***. (2013) Prezygotic and postzygotic control of uniparental mitochondrial inheritance in *Cryptococcus neoformans*. **mBio** 4(2). pii: e00112-13 PMID: PMC3638309
31. Zhai B and **Lin X***. (2013) Evaluation of anti-cryptococcal activity of the antibiotic polymyxin B *in vitro* and *in vivo*. **International Journal of Antimicrobial Agents** 41:250– 254.
30. Wang L and **Lin X***. *Cryptococcus neoformans* and Cryptococcosis. **Encyclopedia of Infectious Disease**. **Greenwood Press**.
29. Wang L and **Lin X***. (2012) Morphogenesis in fungal pathogenicity: shape, size, and surface. **PLoS Pathogens** 8(12): e1003027. PMID: PMC3516537
28. Wang L, Zhai B, and **Lin X***. (2012) The link between morphotype transition and virulence in *Cryptococcus neoformans*. **PLoS Pathogens** 8(6): e1002765. PMID: PMC3380952 (Recommended by *Faculty of 1000*; Featured Research Article by *PLoS Pathogens*)
27. Zhai B, Cheng W, Wang L, Sachs MS*, and **Lin X***. (2012) The antidepressant sertraline provides a promising therapeutic option for neurotropic cryptococcal infections. **Antimicrobial Agents and Chemotherapy** 56(7): 3758-3766. PMID: PMC3393448 (Recommended by *Faculty of 1000*)
26. Gyawali R and **Lin X***. (2011) Mechanisms of uniparental mitochondrial DNA inheritance in *Cryptococcus neoformans*. **Mycobiology** 39(4): 235-242. PMID: PMC3385124
25. Qin Q, Luo J, **Lin X**, Pei J, Frerichs M, Ficht TA., and de Figueiredo P. (2011) Functional analysis of host factors that mediate the intracellular lifestyle of *Cryptococcus neoformans*. **PLoS Pathogens** 7(6): e1002078. PMID: PMC3116820. (Recommended by *Faculty of 1000*)
24. Zhai B and **Lin X***. (2011) Recent progress on antifungal drug development. **Current Pharmaceutical Biotechnology** 12(8):1255-62.
23. Wang L and **Lin X***. (2011) Mechanisms of same sex mating in *Cryptococcus neoformans*. **Fungal Genetics and Biology** 48:651–660
22. Cogliati M*, Viviani MA, and **Lin X***. (2011) Hybridization and its importance in *Cryptococcus* species complex, in *Cryptococcus: from human pathogen to model yeast*. Edited by J. Heitman, T. Kozel, J. Kwon-Chung, J. Perfect, and A. Casadevall. **American Society of Microbiology**.
21. Hsueh YP, **Lin X**, Kwon-Chung J and Heitman J. (2011) Sexual reproduction of *Cryptococcus*, in *Cryptococcus: from human pathogen to model yeast*. Edited by J. Heitman, T. Kozel, J. Kwon-Chung, J. Perfect, and A. Casadevall. **American Society of Microbiology**.
20. **Lin X***, Jackson J, Feretzaki M, Xue C, and Heitman J. (2010) Transcription factors Mat2 and Znf2 operate cellular circuits orchestrating opposite and same-sex mating in *Cryptococcus neoformans*. **PLoS Genetics** 13;6(5):e1000953. PMID: PMC2869318.
19. Zhai B, Zhou H, Yang L, Zhang J, Jung K, Giam C, Xiang X, and **Lin X***. (2010) Polymyxin B, in combination with fluconazole, exerts a potent fungicidal effect. **Journal of Antimicrobial Chemotherapy** 65(5):931-8. PMID: PMC2851492.

18. **Lin X***. (2009) *Cryptococcus neoformans*: morphogenesis, infection, and evolution. ***Infection, Genetics and Evolution*** 9:401-416.
17. Jackson J, Higgins L, and **Lin X***. (2009) Conidiation color mutants of *Aspergillus fumigatus* are highly pathogenic to the heterologous insect host *Galleria mellonella*. ***PLoS ONE*** 4(1), e4224 (1-14). PMID: PMC2625396.
16. **Lin X**, Patel S, Litvintseva A, Floyd A, Mitchell TG, and Heitman J. (2009) Diploids in the *Cryptococcus neoformans* serotype A population homozygous for the α mating type originate *via* unisexual mating. ***PLoS Pathogens*** 5(1), e1000283 (1-18). PMID: PMC2629120.
(Recommended by *Faculty of 1000*)
15. Bui T, **Lin X**, Malik R, Heitman J, and Carter D. (2008) Isolates of *Cryptococcus neoformans* from infected animals reveal genetic exchange in unisexual, α mating type populations. ***Eukaryotic Cell*** 7(10):1771– 80.
14. **Lin X**, Nielsen K, Patel S, and Heitman J. (2008) Impact of mating type, serotype, and ploidy on virulence of *Cryptococcus neoformans*. ***Infection and Immunity*** 76(7):2923-38. PMID: PMC2446738
13. Rutherford J, **Lin X**, Nielson K, and Heitman J. (2008) The Amt2 permease is required to induce ammonium responsive invasive growth and mating in *Cryptococcus neoformans*. ***Eukaryotic Cell*** 7(2):237-46. PMID: PMC2238157.
12. **Lin X**, Litvintseva A, Nielsen K, Patel S, Kapadia Z, Floyd A, Mitchell TG, and Heitman J. (2007) α AD α hybrid strains: evidence of hybrid vigor and same sex mating of *Cryptococcus neoformans* in nature. ***PLoS Genetics*** 3(10):1975-90. PMID: PMC2042000.
11. Litvintseva AP, **Lin X**, Templeton I, Heitman J, and Mitchell TG. (2007) Many globally isolated AD hybrid strains of *Cryptococcus neoformans* originated in Africa. ***PLoS Pathogens*** 3(8), e114 (1-9).
10. **Lin X**, and Heitman J. (2007) Mechanisms of homothallism in fungi, in *Sex in fungi: molecular determination and evolutionary implications*, edited by J. Heitman, J. Kronstad, J. Taylor and L. A. Casselton. **American Society of Microbiology**
9. **Lin X**, Huang J, Mitchell T, and Heitman J. (2006) Virulence attributes and hyphal growth of *Cryptococcus neoformans* are quantitative traits and the *MAT α* allele enhances filamentation. ***PLoS Genetics*** 2(11): e187 (1-14). PMID: PMC1636697.
8. **Lin X** and Heitman J. (2006) The biology of *Cryptococcus neoformans* species complex. ***Annual Review of Microbiology*** 60: 60-105.
7. **Lin X** and Heitman J. (2005) Chlamydospore formation during hyphal growth in *Cryptococcus neoformans*. ***Eukaryotic Cell***. 4(10):1746-54
6. Idnurm A, Bahn Y, Nielsen K, **Lin X**, Fraser J, and Heitman J. (2005) Deciphering the model pathogenic fungus *Cryptococcus neoformans*. ***Nature Reviews Microbiology*** 3(10):753-64.
5. **Lin X**, Hull CM, and Heitman J. (2005) Sexual reproduction between partners of the same mating-type in *Cryptococcus neoformans*. ***Nature*** 434: 1017-21.
(Recommended by *Faculty of 1000*)
4. **Lin X** and Momany M. (2004) Identification and complementation of abnormal hyphal branch mutants *ahbA1* and *ahbB1* in *Aspergillus nidulans*. ***Fungal Genetics and Biology*** 41(11): 998-1006.
3. Guest G, **Lin X**, and Momany M. (2004) *Aspergillus nidulans* RhoA is involved in polar growth, branching, and cell wall synthesis. ***Fungal Genetics and Biology*** 41(1):13-22
2. **Lin X** and Momany M. (2003) The *Aspergillus nidulans* *swoC1* mutant shows defects in growth and development. ***Genetics*** 165: 543-54. PMID: PMC1462793.
1. **Lin X**, Momany C, and Momany, M. (2003) SwoHp, nucleoside diphosphate kinase, is essential in *Aspergillus nidulans*. ***Eukaryotic Cell*** 2: 1169–1177. PMID: PMC326647.

Patents

1. Du Y, Bai X, Yu L, Zhang M, Liu X, **Lin X**, Li S, Qu T, and Yu X. (Dalian Institute of Chemical Physics,

Chinese Academy of Sciences, China). Oligosaccharide fermentation products as a plant disease resistant-inducing agent. CN Patent 1303602. (Chem. Abstr. 136:81338) 2001.

2. Bai X, Du Y, Liu X, **Lin X**, Wang Y (Dalian Institute of Chemical Physics, Chinese Academy of Sciences, Peop. Rep. China). A bioproduct used for prevention of plant fungal diseases and promotion of plant growth. Filing number: CN Patent 1320381A. 2001.
3. **Lin X** (Texas A&M University, USA). Promising immunoprotection and response against cryptococcosis with cryptococcal cells from strains with increased *ZNF2* expression. United States provisional patent application. Application No. 62/082,494. 2014

D. Research Support

1R21AI132125-01 (Lin: PI) NIH/NIAID 03/08/2017 to 02/28/2019
Title: Meiosis in cryptococcal infection
The goal is to establish the occurrence of meiosis in *Cryptococcus neoformans* during infection.

1012445 BWF Investigators in Pathogenesis of Infectious Disease Award (Lin: PI)
The Burroughs Wellcome Fund 07/01/2013-06/30/2018
Title: Fungal communication and pathogenicity
The goal is to provide new opportunities for investigators still early in their careers to study pathogenesis.

R21AI126219 (Cai: PI; Lin: co-PI) NIH/NIAID 07/01/2016-06/30/2018
Title: MADS-box transcriptional regulation of dimorphic transition in *Penicillium marneffe*
The goal is to confirm the role of mads box TFs in controlling dimorphic transition in *Penicillium marneffe* and identify the downstream targets.
Role: Co-PI

1R01AI097599 (Lin: PI) NIH/NIAID 12/01/2011-11/30/2017
The link between dimorphism and virulence in *Cryptococcus*
The goal is to investigate the molecular mechanisms that control the link between morphological transition and virulence in the human fungal pathogen *Cryptococcus neoformans*.

1R21AI107138 (Lin: PI) NIH/NIAID 06/01/2013-05/31/2016
Investigate the multifunctional adhesins in *Cryptococcus*
The goal is to identify potential adhesion proteins in *Cryptococcus neoformans* through bioinformatics and genetic studies.

1R21AI088266 (Lin: PI) NIH/NIAID 05/07/2010-04/30/2013
Genetic regulation of invasive hyphal growth of *Aspergillus fumigatus*
The goal was to identify regulators that control invasive hyphal growth in *Aspergillus fumigatus* through insertional mutagenesis.

01957 (Lin: PI) NHARP, Texas Higher Education Coordinating Board 07/01/2010-05/31/2013
Development of a Novel Antifungal Treatment
The goals were to screen for molecular targets of polymyxin B and to perform a pilot study to assess the efficacy of the drug combination of polymyxin B with azoles in a murine inhalation model of cryptococcosis.

10BGIA3740040 (Lin: PI) American Heart Association 07/01/2010-06/30/2013
Investigation of an antidepressant as an antifungal drug
The goals were to screen for molecular targets of sertraline (Zoloft) and to perform a pilot study to assess the efficacy of sertraline in treating cryptococcosis.

5R01AI097599-03 (Lin: PI) NIH/NIAID 08/26/2014-08/26/2015
Administrative supplement for equipment

2005 – 2007 Molecular Mycology and Pathogenesis Training Program, NIH, T32 AI52080 (XL).