

BIO 329, 51395, MEDICAL MYCOLOGY SYLLABUS SPRING 2007

- Course:** Bio 329, Medical Mycology, BUR 112, TTH 9:30-10:45 AM
- Prerequisites:** Biology 325, 325H and 226R with a grade of at least a C in each. Concurrent or subsequent enrollment in Bio 129L (Medical Mycology Laboratory) is recommended for Clinical Laboratory Science majors.
- Instructor:** Dr. Paul J. Szaniszló, ESB 109A, E-mail pjszaniszlo@mail.utexas.edu
(Office Hours: Mondays from 11:30 AM-12:30 PM, or by appointment)
- T.A./Grader:** Samantha Croft, MBB 2.424B, E-mail sbcroft@hotmail.com (Office Hours: T from 11 AM-12 PM or by appointment; Location MBB 2.424B). (Discussion and Test Review Sessions: Tuesday, 5-6 PM, Wednesday, 4:30-5:30 PM (Locations TBA). These sessions are optional, although quizzes **may** be given and up to 5 bonus points/exam period can be earned during these sessions. If you cannot attend either of these sessions, please let Samantha know your reasons and why you cannot rearrange your schedule, **in writing**, before the 12th class day (her syllabus for the Discussion Sessions can be found below and at <http://webspace.utexas.edu/sbc/www/>). **She will then try to accommodate you. However, if she can't and you think you will need those potential points to pass, then you should seriously consider dropping this course.**
- Text (optional):** Dismukes, Pappus and Sobel. 2003. Clinical Mycology. Oxford Univ. Press, NY
- Readings:** In addition, or as an alternative to the text assignments, a number of articles will be assigned during the course. **These readings are required** and are available in the Life Sciences Library as one set of uncatalogued articles. They can also be purchased at Speedway Copy and Printing, in Dobie Mall, should you want personal copies. The titles, authors and sources of the readings are listed on pages 3 and 4 in the general order they will be assigned.
- Course Description:** This course consists of a basic introduction to medical mycology and a comprehensive study of the fungi (yeasts and molds) and mycoses (fungal diseases) likely to be encountered in clinical settings by a physician, medical mycologist, or medical technologist. Attention will be distributed as equally as possible between emphasis on the biology of the fungal zoopathogen and on its disease. A general course outline in the form of a Tentative Lecture Schedule (page 2-3) is attached, as well as a short Reserve Book List (page 4-5).
- Grading and Test Policy:** There will be three semester examinations and an optional comprehensive final. The exams will focus on the material covered since the last examination but the second and third exams will all require good knowledge of prior coverage, and particularly of the material covered for the first examination. Each examination will count equally (33.3%), if you opt not to take the comprehensive final. Should you decide to take the final, then it too will count 33.3% and your lowest semester exam grade will be dropped from the calculation for your final average (**Note: if you opt to take the final, then it will be one of the three scores used to calculate your final grade**). Final averages will not be curved, and generally will be assigned as follows:

85-100%	=	A
70-84%	=	B
55-69%	=	C

	22	Introduction to the Pathogenic Yeasts
	27	Candidiasis
	29	Candidiasis & Cryptococcosis
APR	3	Cryptococcosis
	5	EXAM II - Through candidiasis
	10	Histoplasmosis
	12	Blastomycosis
	17	Coccidioidomycosis
	19	Coccidioidomycosis
	24	Aspergillosis
APR	26	EXAM III – Through aspergillosis
MAY	1	Fungal Allergies, Mushrooms
MAY	3	Mushroom Poisonings & Mycotoxins
MAY	12	Optional Comprehensive Final Examination (see grading and test policies on page 1 for details)

BIO 329 - RESERVE READING LIST - SPRING 2007
(In Life Science Library as a set of uncatalogued articles)

These articles are also available through Speedway Copy and Printing, Dobie Mall, and are **required** readings. Although you may not be tested directly on the details of these articles, they will help you to better appreciate the subject and to write better essay discussions, if requested. In general, after the first few, these articles provide considerably more information about fungi and the fungal agents of mycosis that will be taken up in this course than is presented in our text.

- Sz 1. Sternberg, S. 1994. The emerging fungal threat. *Science* 266:1632-1634.
- Sz 2. Perfect, J. R. 2005. Weird Fungi. *ASM News* 71:407-411.
- Sz 3. Mitchell, T. G. 1998. Medical mycological research and training: needs and opportunities. *ASM News* 64:17-23.
- Sz 4. Kwon-Chung, K. J. and B. L. Wickes. 2006. The conversion from classical studies in fungal pathogenesis to the molecular era. In: *Molecular principles of Fungal Pathogenesis*, ASM Press, pp. 49-70.
- Sz 5. Mendoza, L., L. Ajello and J. W. Taylor. 2001. The taxonomic status of *Lacazia loboi* and *Rhinosporidium seeberi* has been finally resolved with the use of molecular tools. *Rev. Iberoam. Micol.* 18:95-98.
- Sz 6. Cushion, M. T. 2004. *Pneumocystis*: unraveling the cloak of obscurity. *TIM* 12:243-249.
- Sz 7. Taylor, J. W. 2006. Evolution of human-pathogenic fungi: phylogenies and species. In: *Molecular Principles of Fungal Pathogenesis*, ASM Press, pp. 113-131.
- Sz 8. Casadevall, A. 2006. Cards of virulence and the global virulome for humans. *Microb*, ASM Press, 1:359-364.
- Sz 9. Szaniszló, P. J. 1985. An introduction to dimorphism among zoopathogenic fungi. In: *Fungal dimorphism, with emphasis on fungi pathogens for humans*, Plenum Press, pp. 3-13.
- Sz 10. Romani, R. 2004. Immunity to fungal infections. *Nature Reviews: Immunology*. 4:1-12.
- Sz 11. Odds, F. C., A. J. P. Brown and N. A. R. Gow. 2003. Antifungal agents: mechanisms of action. *TIM*. 11:272-279.
- Sz 12. Kauffman, C. 2006. Clinical efficacy of new antifungal agents. *Curr. Opin. Microbiol.* 9:483-488.
- Sz 13. Gueho, E., J. Faergemann, C. Lyman and E. J. Anaissie. 1994. *Malassezia* and *Trichosporon*: two emerging pathogenic basidiomycetous yeast-like fungi. *J. Med. Vet. Mycol. Suppl.* 32:367-378.
- Sz 14. Weitzman, I., and R. C. Summerbell. 1995. The dermatophytes. *Clin. Microbiol. Rev.* 8:240-259.

- Sz 15. Kac, G. 2000. Molecular approaches to the study of dermatophytes. *Med. Mycol.* 38:329-336.
- Sz 16. Jacobson, E. S. 2000. Pathogenic roles for fungal melanins. *Clin. Microbiol. Rev.* 13:708-717.
- Sz 17. Szanislo, P. J., L. Mendoza and S. M. Karuppaiyl. 1993. Clues about chromoblastomycotic and other dematiaceous pathogens based on *Wangiella* as a model. p. 241-255. In: *Dimorphic Fungi in Biology and Medicine*. Plenum Press, N.Y.
- Sz 18. Szanislo, P. J. 2002. Molecular genetic studies of the model dematiaceous pathogen *Wangiella dermatitidis*. *Int. J. Med. Microbiol.* 292: 381-390.
- Sz 19. Brandt, M. E., et al. 2000. *Candida dubliniensis* fungemia: the first four cases in North America. *Emerg. Infect. Dis.* 6:46-49.
- Sz 20. Pfaller, M. A., and D. J. Diekema. 2002. Role of sentinel surveillance of candidemia: trends in species distribution and antifungal susceptibility. *J. Clin. Microbiol.* 40:3551-3557.
- Sz 21. Fidel, P. L. 2004. History and new insights into host defenses against vaginal candidiasis. *TIM* 12: 220-227.
- Sz 22. Hube, B. 2004. From commensal to pathogen: stage- and tissue-specific gene expression of *Candida albicans*. 7: 336-341.
- Sz 23. Sudbury, P., N. Gow, and J. Berman. 2004. The distinct morphogenetic states of *Candida albicans*. *TIM* (in press).
- Sz 24. Douglas, L. J. 2003. *Candida* biofilms and their role in infection. *TIM*. 11:30-36.
- Sz 25. Magee, P. T. and B. B. Magee. 2004. Through a glass opaquely: the biological significance of mating in *Candida albicans*. *Curr. Opin. Microbiol.* 7:661-665.
- Sz 26. Noverr, M. C., D. M. Lindell, G. B. Toews and G. B. Huffnagel. 2006. Fungal interactions with leukocytes. In: *Molecular Principles of Fungal Pathogenesis*, ASM Press, pp. 555-563.
- Sz 27. McClelland, C. M., Y. C. Chang, A. Varma and K. J. Kwon-Chung. 2004. Uniqueness of the mating system in *Cryptococcus neoformans*. *TIM* 12:208-212.
- Sz 28. Feldmesser, M., S. Tucker and A. Casadevall. 2001. Intracellular parasitism of macrophages by *Cryptococcus neoformans*. *TIM* 9:273-278; and related *TIM* letters 9:417-418.
- Sz 29. Doering, T. L. 2000. How does *Cryptococcus* get its coat? *TIM* 8:547-553; and related 2001 *TIM* letters 9:112-113.
- Sz 30. Woods, J. P. 2003. Knocking on the right door and making a comfortable home: *Histoplasma capsulatum* intracellular pathogenesis. *Curr. Opin. Microbiol.* 6:327-331.
- Sz 31. Ignatov, A. and E. J. Keath. 2002. Molecular cell biology and molecular genetics of *Histoplasma capsulatum*. *Int. J. Med. Mycol.* 292: 349-361.
- Sz 32. Brandhorst, T. T., P. J. Rooney, T. D. Sullivan. and B. S Klein. 2002. Using genetic tools to study the pathogenesis of *Blastomyces dermatitidis*. *TIM* 10:25-30.
- Sz 33. Kirkland, T. N. and J. Fierer. 1996. Coccidioidomycosis: a reemerging infectious disease. *Emerg. Infect. Dis.* 2:192-199.
- Sz 34. Abuodeh, R. O., J. N. Galgiani and G. M. Scalarone. 2002. Molecular approaches to the study of *Coccidioides immitis*. *Int. J. Med. Microbiol.* 292:373-380.
- Sz 35. Latgé, J-P. 2001. The pathobiology of *Aspergillus fumigatus*. *TIM* 9:382-389.
- Sz 36. Tekaia, F, and J-P. Latgé. 2005. *Aspergillus fumigatus*: saprophyte or pathogen? *Curr. Opin. Microbiol.* 8:385-392.
- Sz 37. Andrianopoulos, A. 2002. Control of morphogenesis in the human fungal pathogen *Penicillium marneffeii*. *Int. J. Med. Microbiol.* 292: 331-347.
- Sz 38. McGinnis, M. R. 2004. Pathogenesis of indoor fungal diseases. *Medical Mycology.* 42:107-117.

RESERVE BOOK LIST - Spring 2007 - Paul J. Szanislo

These books are on reserve in the Life Science Library and should be of help should you need

supplemental reading on certain topics introduced in Bio 329.

Medical Mycology

Clinical Mycology, Dismukes, Pappas and Sobel

QR 245, C566, 2003

Medical Mycology, Kwon-Chung and Bennett

QR 245, K86, 1992

Atlas of Clinical Mycology, deHoog et al., QR 245, K86, 2000.

Molecular Principles of Fungal Pathogenesis, Heitman et al., ed., QR 245, M65, 2006

Fungal Pathogenesis; Principles and Clinical Applications, Calderone & Cihlar, ed., RC117, f864, 2000

General Mycology

Ainsworth & Bisby's Dictionary of the Fungi, 8th ed., Hawksworth, Krik, Sutton & Pegler

QK 603, A5, 1995

Dictionary of the Fungi, 9th ed., Hawksworth et al., QK 600.35, A5

The Fifth Kingdom, 3rd ed., Kendrick

QK 603, K46, 1992

Introductory Mycology, 4th ed., Alexopoulos, Blackwell and Mims

QK 603, A55, 1996

Fundamentals of the Fungi, 4th ed., Moore-Landecker

QK 603, M62, 1996

Additional references, which are available at the UT Science Library, but are not on reserve.

The Fungi, 2nd ed., Watkinson, Carlile and Gooday

QK 603, C257, 2001

Microbiology and Microbial Infections, Topley and Wilson's, 9th ed., Vol. 4. Medical Mycology, QR 46, T6, 1998

A Practical Guide to Medically Important Fungi and The Diseases They Cause, Sugar and Lyman

RC 117, S84, 1997

Dimorphic Fungi in Biology and Medicine, Vanden Bossche, Odds and Kerridge (eds)

QR 245, D55, 1993

Medical Mycology: A Practical Approach, Evans and Richardson

QR 248, M43, 1989

Medical Mycology and Human Mycoses, Beneke and Rogers

QR 245, B46, 1996

Medical Mycology, 3rd ed., Rippon

RC 117, R5, 1988

Fungal Dimorphism: With Emphasis on Fungi Pathogenic for Humans, Szaniszló

QR 245, 1985

Laboratory Handbook of Medical Mycology, McGinnis

RC 117, E56, 1980

Identifying Filamentous Fungi: a Clinical Laboratory Handbook, St. Germain and Summerbell

QR 248, F55, 1996