My *Chrysosporium* is a *Scedosporium*

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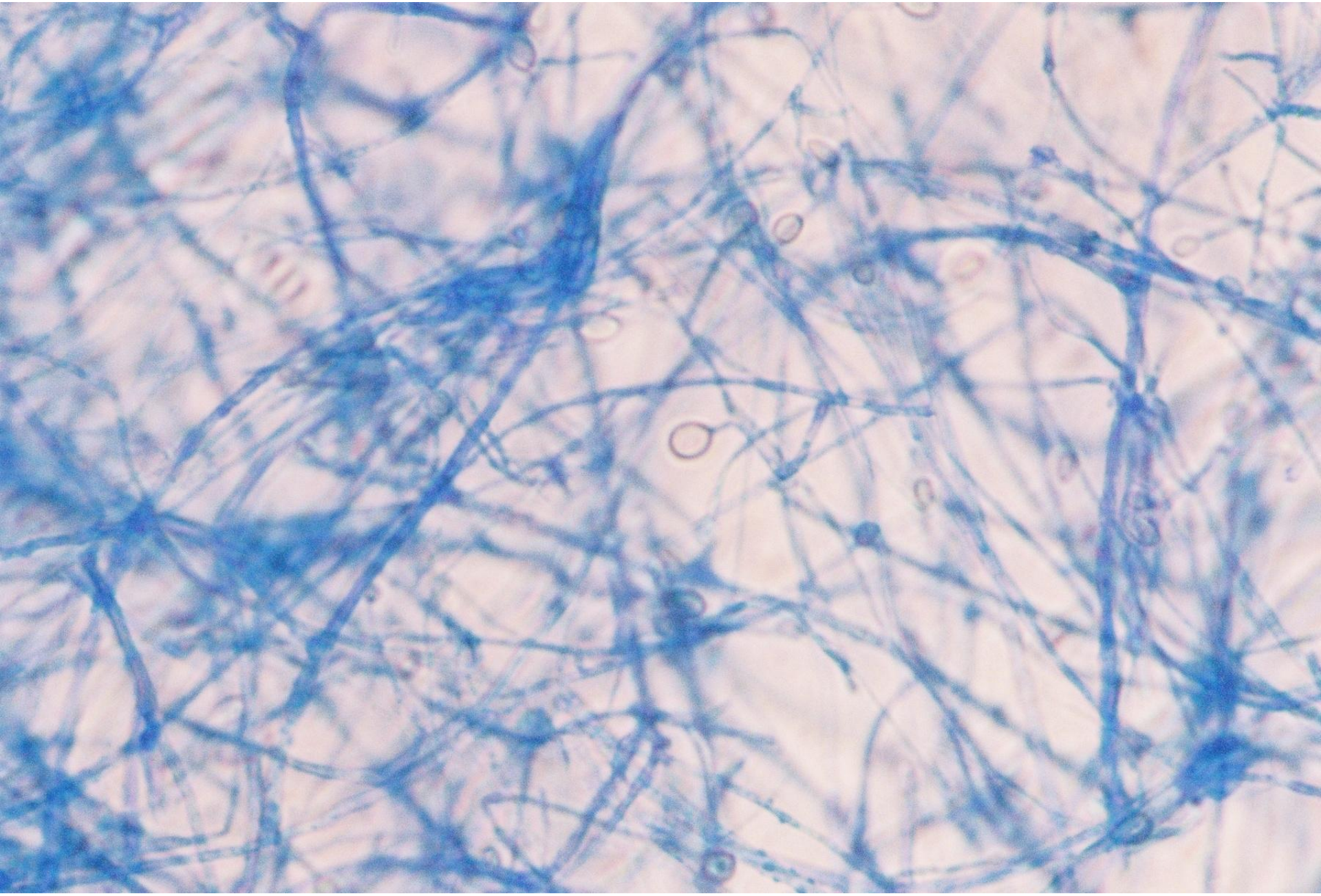
- Background**:** A mold which phenotypically resembles **and has the same unusual ammonia tolerance as *Blastomyces dermatitidis*** (the etiologic agent of blastomycosis) was previously isolated in-vitro from soil March 13, 2011. It was tentatively identified as *Chrysosporium zonatum*.
- Purpose: To positively identify and determine the ubiquity of this organism which is an opportunistic pathogen and may share a microenvironment with *B dermatitidis*.

- Methods: The original isolate was identified by expert phenotypic analysis and internal transcribed spacer region rDNA (ITS) sequencing and BLAST search.
- 10 soil new samples were obtained from a yard, park and riverbank in suburban Milwaukee County, November 5, 2012 (T=5.6 °C), diluted two-fold in aqueous 0.5% allantoin, Tween-80 (20 ml/l) and penicillin/streptomycin and incubated at 37º. Three weeks later, samples were spread on low glucose, high (13.2 mM) ammonia basic salts agar plates at pH=7.5 at 37° in gas impermeable bags.
- New isolates were examined, and compared to the original isolate, on Sabouraud dextrose agar (SDA) at 20° and 37° for colony size, morphology and microscopic appearance.

- Results: The original isolate was identified as *Scedosporium apiospermum*.
- A phenotypically similar strain was isolated from 3/4 samples from the yard (beneath the dryer vent that yielded the original isolate, under a woodpile and next to a sandbox). No colonies formed on plates from the other 7 samples.

Figure 1

- Microscopic appearance of *Scedosporium apiospermum* X 400. Numerous hyphae are seen; at center is typical conidium on conidiophore. May superficially resemble mold form of *Blastomyces dermatitidis.*



Scedosporium apiospermum

An emerging opportunistic fungal pathogen:

- Deep, trauma-related infections in a variety of tissues, including mycetoma, in normal hosts
- Colonization/infection of respiratory tracts with predisposing disorders
- Systemic invasive disease in imunocompromised
- Pneumonia or brain abscess following near-drowning

Ecological niche:

- Human impacted environments
  - Agricultural lands
  - Parks and playgrounds
  - Industrial areas
- Polluted/brackish fresh water and sediments
- Sewer, feces

Figure 2

- Isolation site of *S. apiospermum*: residential yard, under dryer vent, suburban Milwaukee County. The fungus was isolated twice from this microenvironment.


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Figure 3

- Isolation site of *S. apiospermum*: same residential yard, underneath woodpile remnant and old decorative bark.

Figure 4

- Isolation site of *S. apiospermum*: same residential yard, underneath edge of sandbox.

Figure 5

- Stagnant water at river edge: potential *Scedosporium apiospermum habitat.*

- Conclusions: *Scedosporium apiospermum* may compete with *Blastomyces* in high-ammonia environments, and may be specifically enriched by this 2-step soil isolation technique, suggesting the need for test modification to favor *Blastomyces* isolation.
- This fungus may be isolated from residential yards.
- Ammonia tolerance may explain the finding of *Scedosporium* in feces and sewage.