

# THE FIGHT AGAINST FUNGAL INFECTIONS

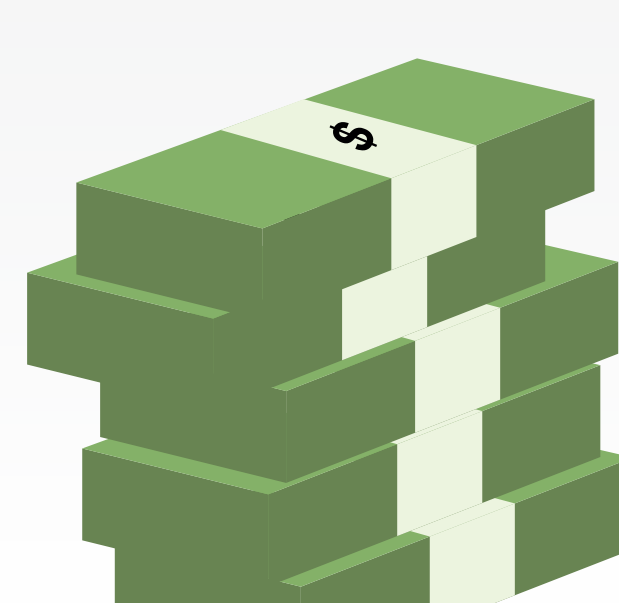
## CURRENT SITUATION

At least **1.4 MILLION** deaths caused by fungal species every year.

*Candida* species are the **4<sup>TH</sup>** leading cause of nosocomial bloodstream infection in the US

*Candida* species account **8-10%** of all bloodstream infections acquired in hospitals in the US

Per infection the *Candida* fungus is estimated to result in an additional **3-13 DAYS** of hospitalization & **\$6,000 - \$29,0000** in healthcare costs!



## CHALLENGES

### 1 RESISTANCE

Current fungi are becoming more **RESISTANT**, due to:

Natural resistance of fungi to therapeutics

Improper antifungal use

Overuse of antibiotics

**7%** of *Candida* isolates resistant to fluconazole



**1%** of *Candida* isolates resistant to echinocandins

### 2 PERSISTENCE

**FUNGAL PATHOGENS CAN PERSIST** despite antifungal therapy being administered and successfully eradicating symptoms.

Pathogens are present in levels too low for detection

If treatment is withdrawn relapse can occur

## ACCELERATING PRE-CLINICAL RESEARCH

### DISEASE PROGRESSION

Leading microbiology researchers are looking for ways to:

Gain a greater understanding of the dynamics of *Candida* infection

Develop more effective treatments

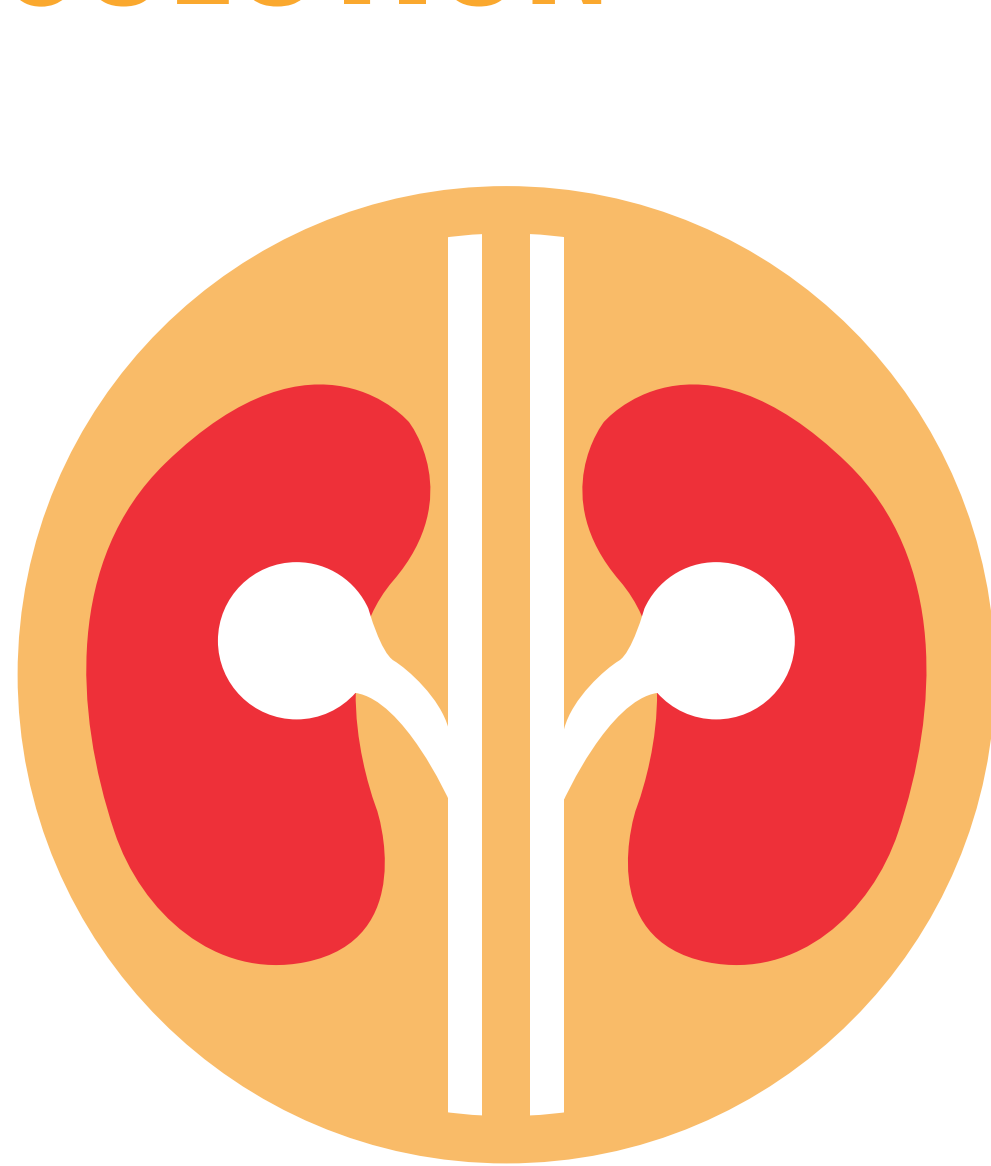
### CHALLENGES



Need mice to be housed in optimal conditions, with the ability to administer anesthesia in a controlled manner

Need to be able to see and measure how infection progresses in mice tissues even with low fungal cell burdens

### SOLUTION



By employing sensitive **pre-clinical imaging technology** from Bruker, a pioneering University research team have been able to detect **very low levels of *Candida* cells within the kidney and other tissues**

## SENSITIVE IMAGING TECHNOLOGY FROM BRUKER

**Accelerate preclinical research into infectious diseases** with the Xtreme II - which provides co-registration of molecular events based on:

**Bioluminescence**

**Fluorescence**

**Cherenkov radiation**

**Direct Radioisotopic Imaging**

**X-ray imaging**

### USER BENEFITS

Higher **SENSITIVITY** achieved with new camera

**ACHIEVE** previously **UNATTAINABLE** levels of detection during low-light applications

**OPTIMAL** environmental support and welfare for the animal accomplished

SPF suitable for animal imaging

Users isolated from **99.9%** of harmful gas exposure