



AT THE FOREFRONT

**UChicago**  
**Medicine**

# **Microbiome, Liver Transplant, and Hospital Acquired Infection**

**Christopher Lehmann, MD FAAP**

**Adult/Pediatric Infectious Disease Fellow**

# Disclosures

None

# Liver Transplant and Hospital Acquired Infection

**Liver Transplant is the only curative therapy for many diseases**

## **Hospital Acquired Infections in liver transplant**

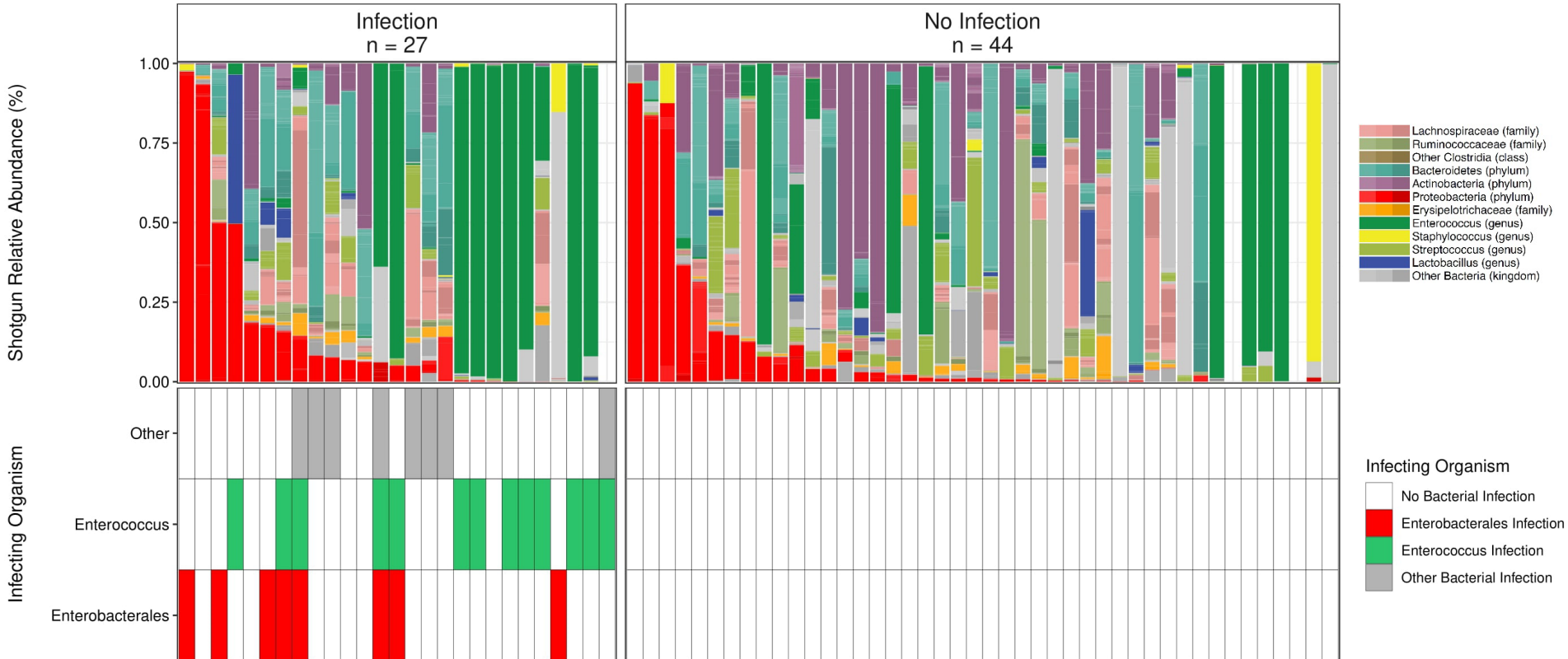
- Frequent: 12-25%
- Morbid: delay discharge, ICU stay, surgery, death
- Linked to the Microbiome

**Opportunity to study the microbiome and apply to other patients**

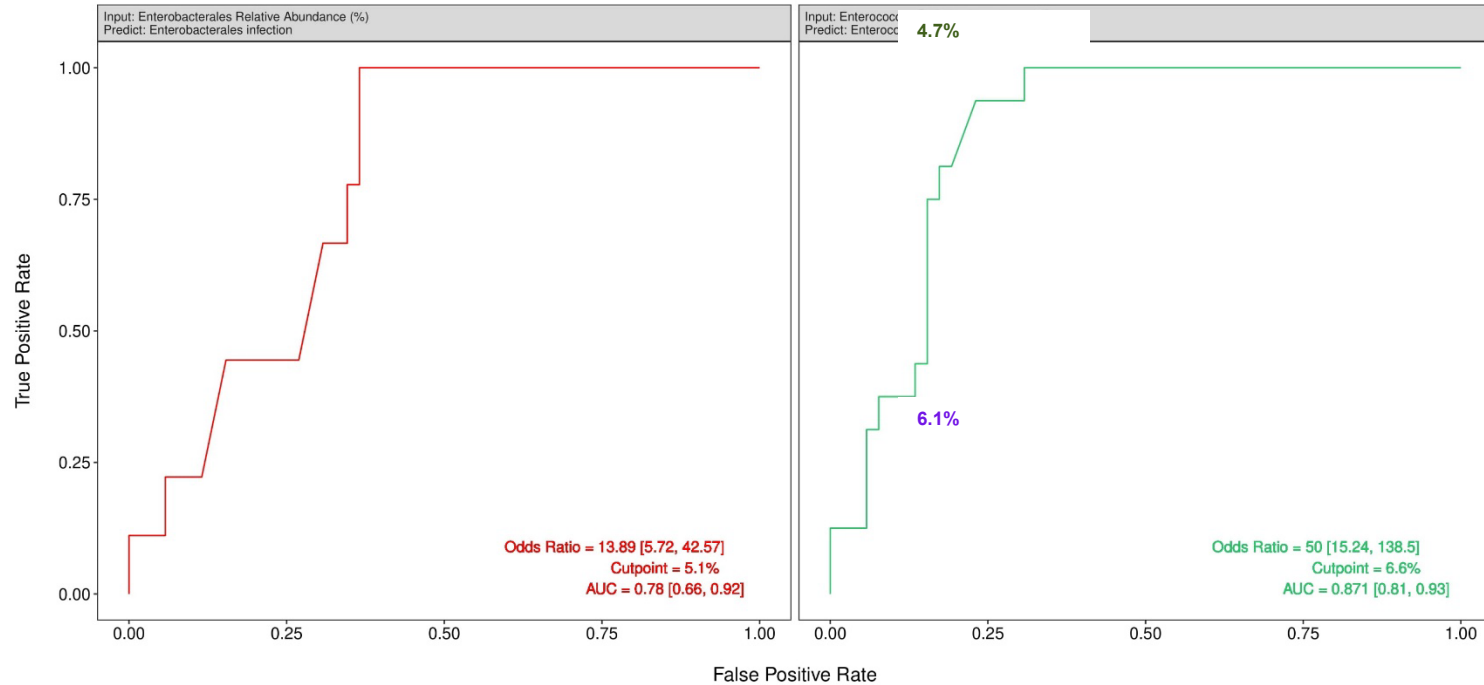
# Enterococcus Expansion->Infection



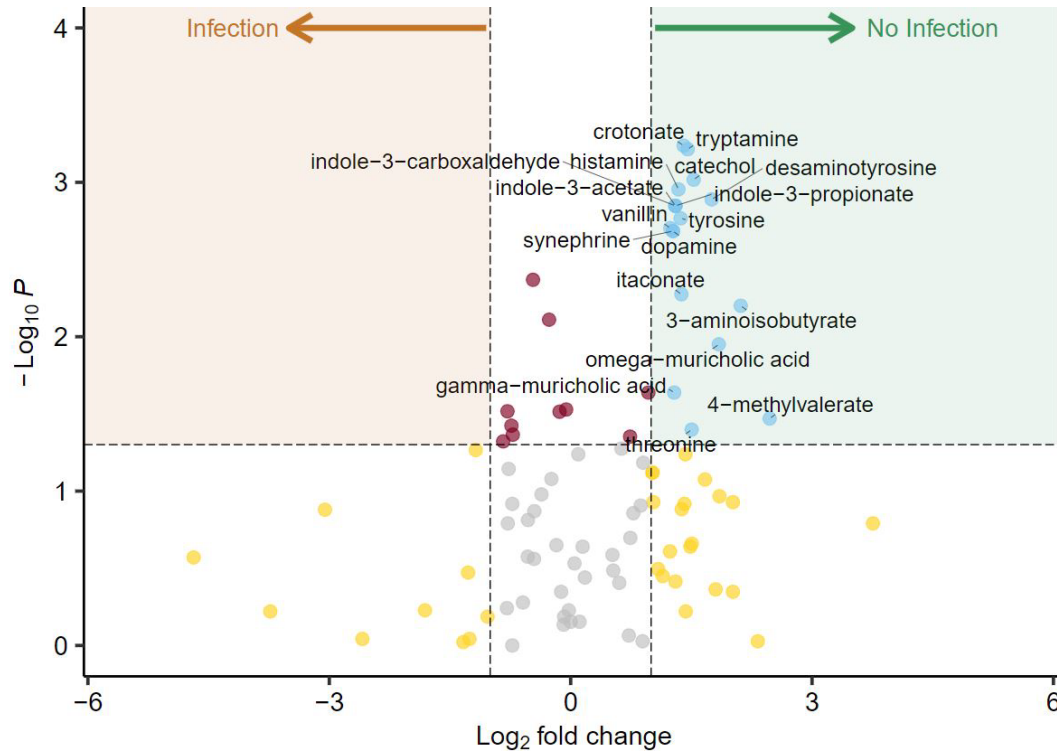
# Enterobacterales Expansion->Infection



# Expansion->Infection



# Specific metabolites enriched in those without infection



Indole-3-Carboxaldehyde  
 Indole-3-Acetate  
 Indole-3-Propionate  
 Desaminotyrosine  
 Tryptamine

Itaconate  
 Crotonate  
 3-aminoisobutyrate  
 4-methylvalerate

Omega-Muricholic Acid  
 Gamma-Muricholic Acid

Vanillin  
 Synephrine  
 Catechol  
 Dopamine  
 Tyrosine

To control microbiome derived bacterial infections, we must ask:

**Who is there?**

**How many?**

**What they are doing?**

**Can we return to normal?**



# Thanks

- Eric Pamer
- Aalok Kacha
- Talia Baker
- Ravi Nayak
- Maryam Khalid
- Jaye Boissiere
- Emerald Adler
- Eric Littmann
- Nick Dylla
- Ashley Sidebottom
- Anitha Sundararajan
- Matt Odenwald
- Matt Stutz
- Mark Dela Cruz
- Anjelica Moran
- Robert Keskey



THE UNIVERSITY OF  
**CHICAGO**  
**UChicago Medicine**

**Duchossois  
Family  
Institute**