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## Manipulating the Gut Microbiome for Human Health

Beth A. McCormick

*University of Massachusetts Medical School*

*Et al.*

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# **MANIPULATING THE GUT MICROBIOME FOR HUMAN HEALTH**

## **MODERATORS**

**Beth A. McCormick, Ph.D.** Department of Microbiology &  
Physiological Systems

UMass-Worcester (UMMS)

**Jeffrey Blanchard, Ph.D.** Department of Biology

UMass-Amherst

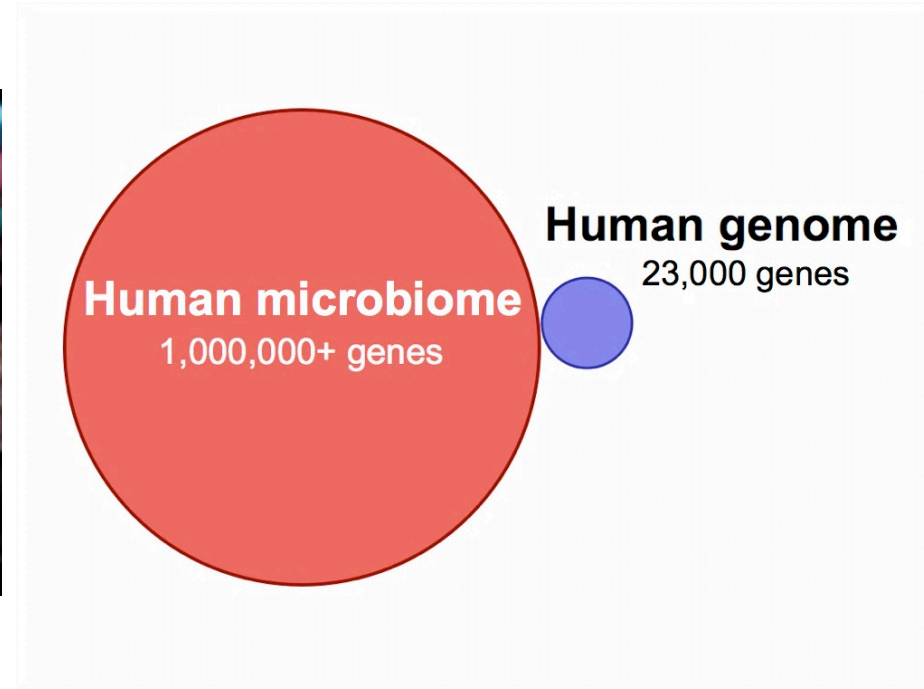
# Microbes R Us



# The second genome

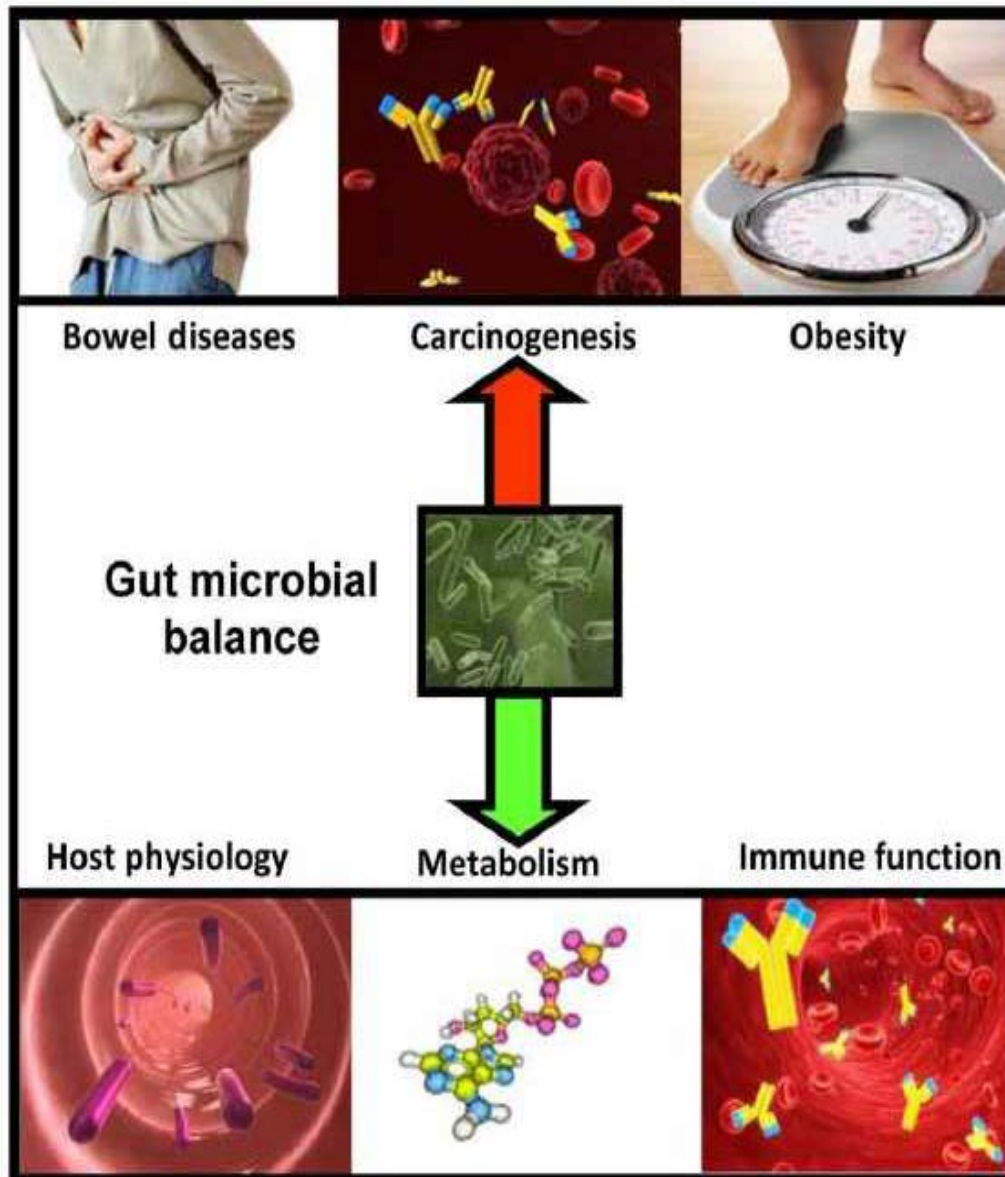


Science and Society By Matt Crenson, December 2013

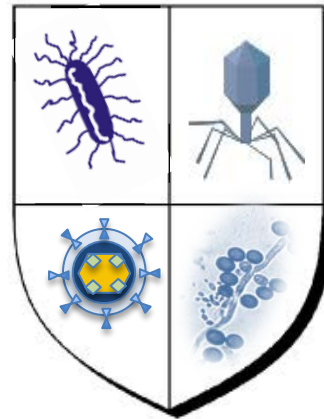


Bacterial cells outnumber your body cells 10:1 and comprise up to 4-6 lbs of your body mass

# Microbiome: Role in Health and Disease



# CMR



**CENTER FOR MICROBIOME RESEARCH**

*Discovering novel microbials for disease prevention and treatment*

**Director:** Beth A. McCormick, Ph.D. UMass-Worcester

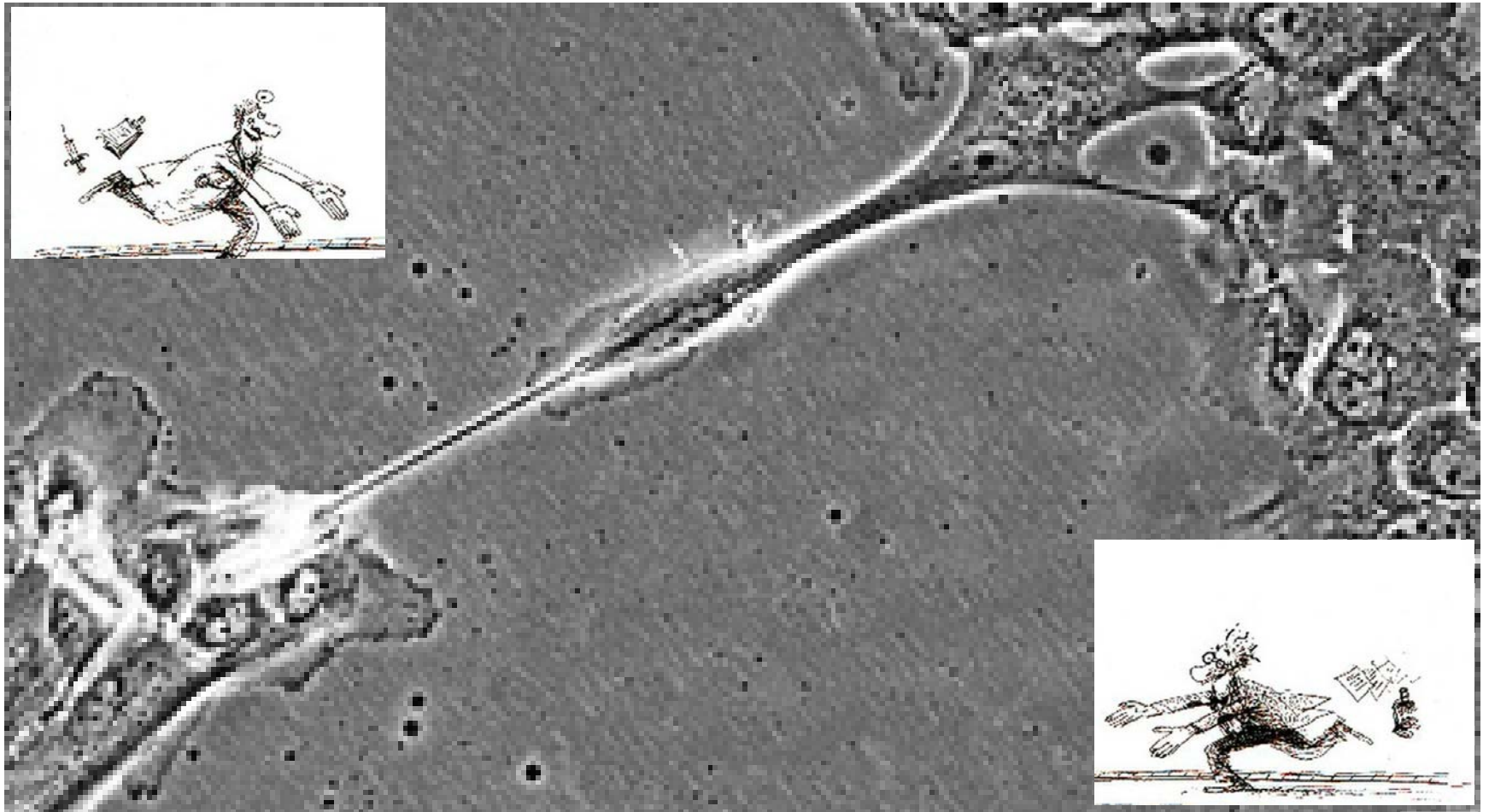
**Co-Director:** Jeffrey Blanchard, Ph.D. UMass-Amherst

**Co-Director:** Randall Pellish, M.D. UMass-Worcester

# CMR Mission

- Define the interactions between the host, the microbes, and the unique environments that drive these ecological systems
- Discovery of novel microbials for disease prevention and treatment

# Natural synergy





# Gut microbiome and its role in health and disease

- C. difficile infection:
  - Clinical gut manipulation: Dr. Randy Pelly, MD  
Department of Medicine (Division of Gastroenterology), UMMS
  - Fecal Transplantation
  
  - Basic research approach: Dr. Vanni Bucci, Ph.D.  
Department of Biology, UMass-Dartmouth
  - Antibiotic Treatment
- Intestinal Disease:
  - Clinical gut manipulation: Barbara Olendzki, R.D., L.D.N.  
Center of Applied Nutrition, UMMS
  - Dietary Interventions
  
  - Basic research approach: David Sela, Ph.D  
Department of Food Science, UMass-Amherst
  - Probiotic Delivery