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## Identification of a gut microbial signature linked to severity of irritable bowel syndrome

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NUTRICIA  
RESEARCH

# Identification of a gut microbial signature linked to severity of irritable bowel syndrome

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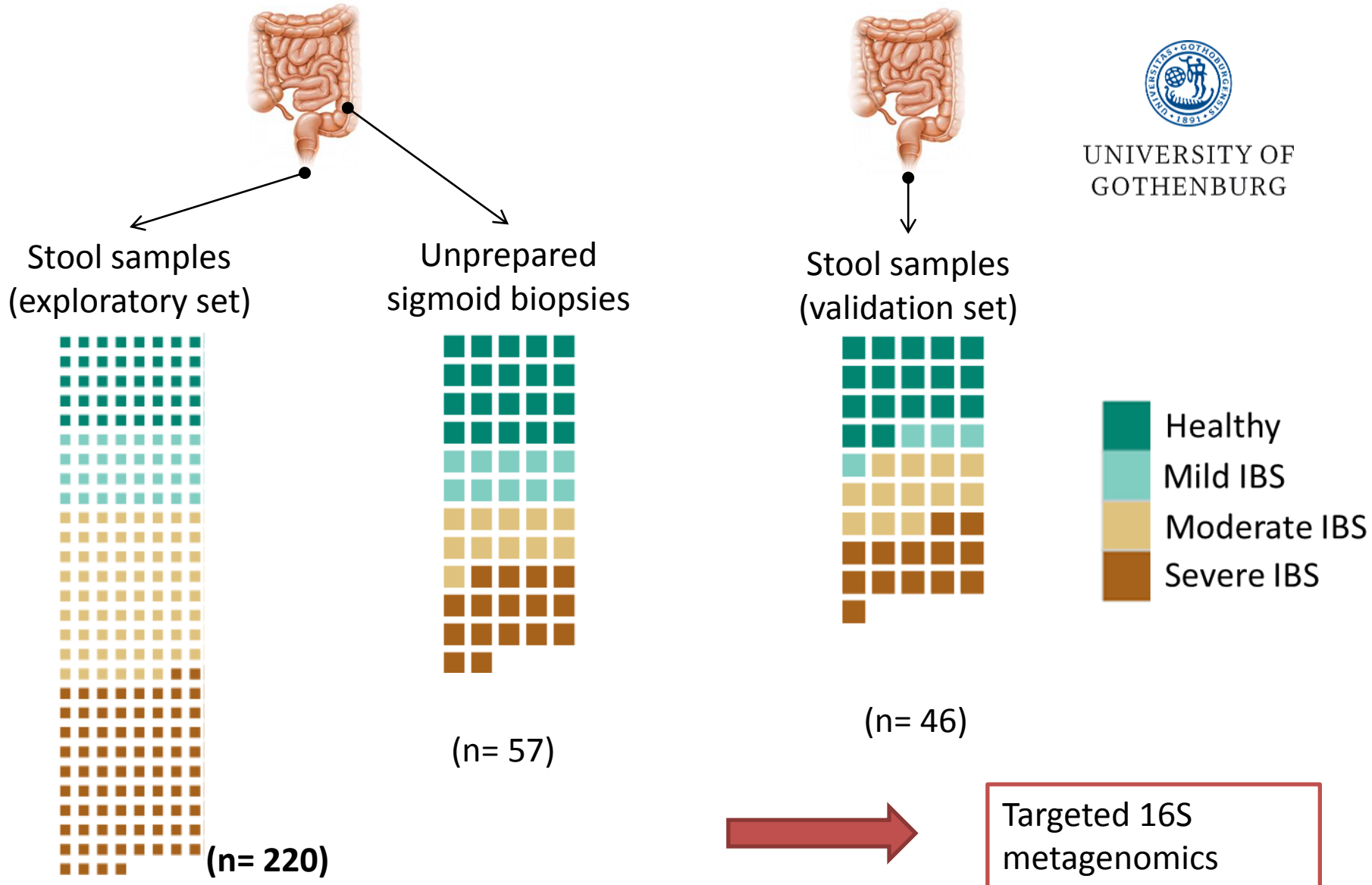
@julientap

#UEGWeek

## Disclosure

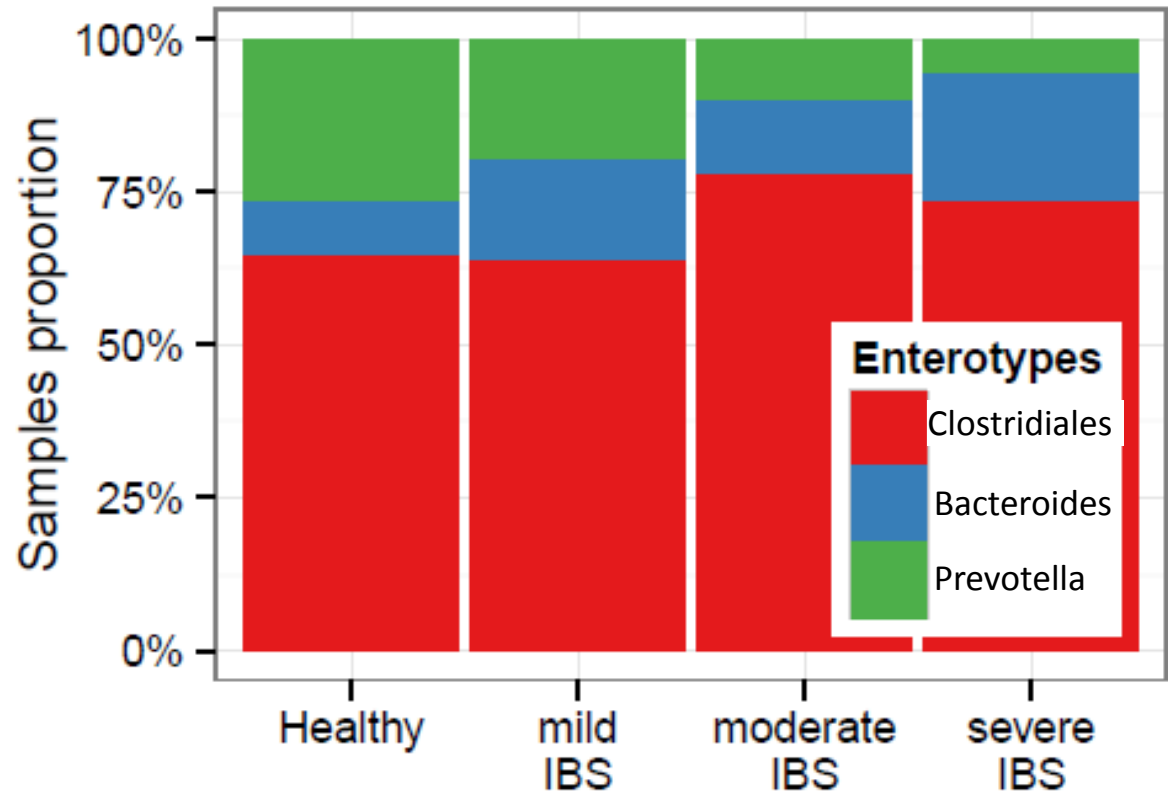
- Employee of Danone Research

# Healthy and IBS dataset



# Link between IBS severity score and enterotypes distribution

**3** enterotypes found in the stool dataset equivalent to those published elsewhere

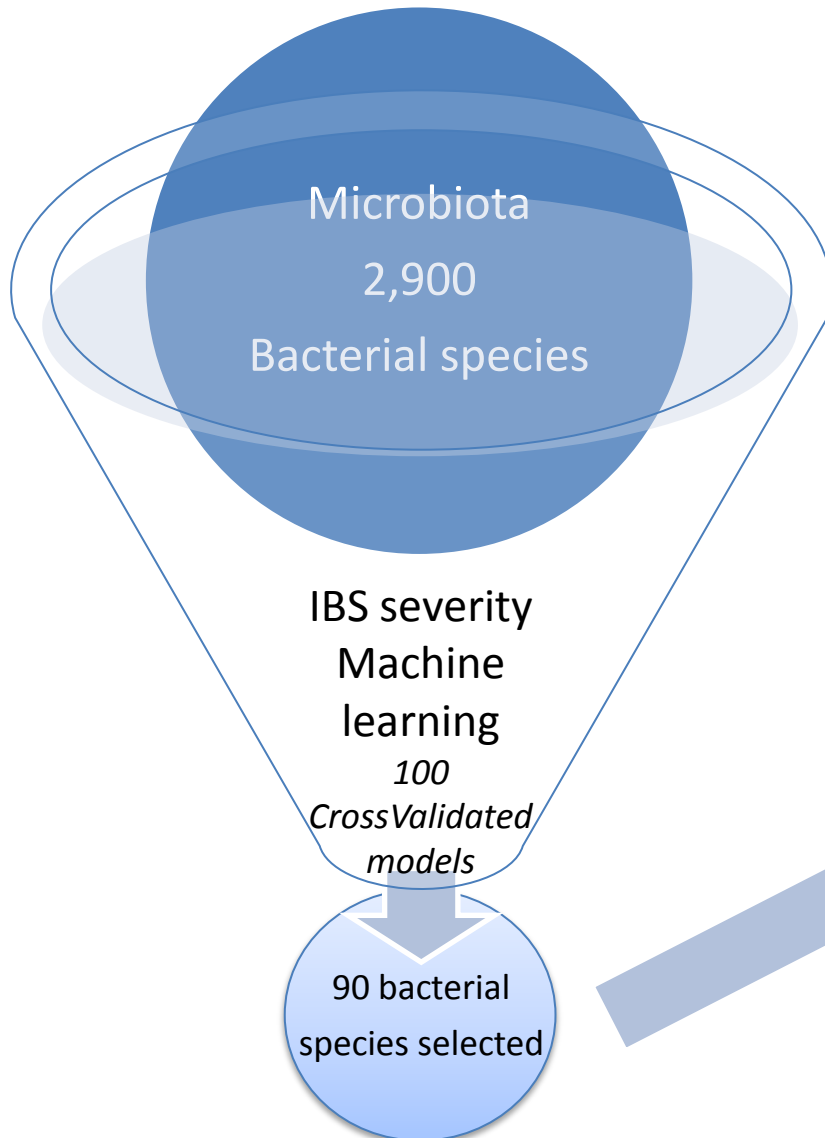


IBS-SSS

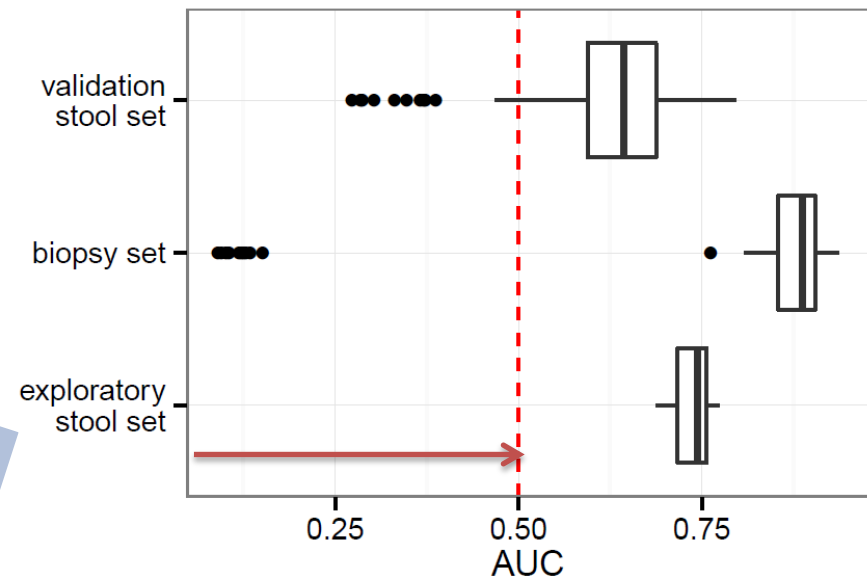
Higher Severity

Less Prevotella-type More Bacteroides-type

# Towards a gut microbial signature for IBS severity

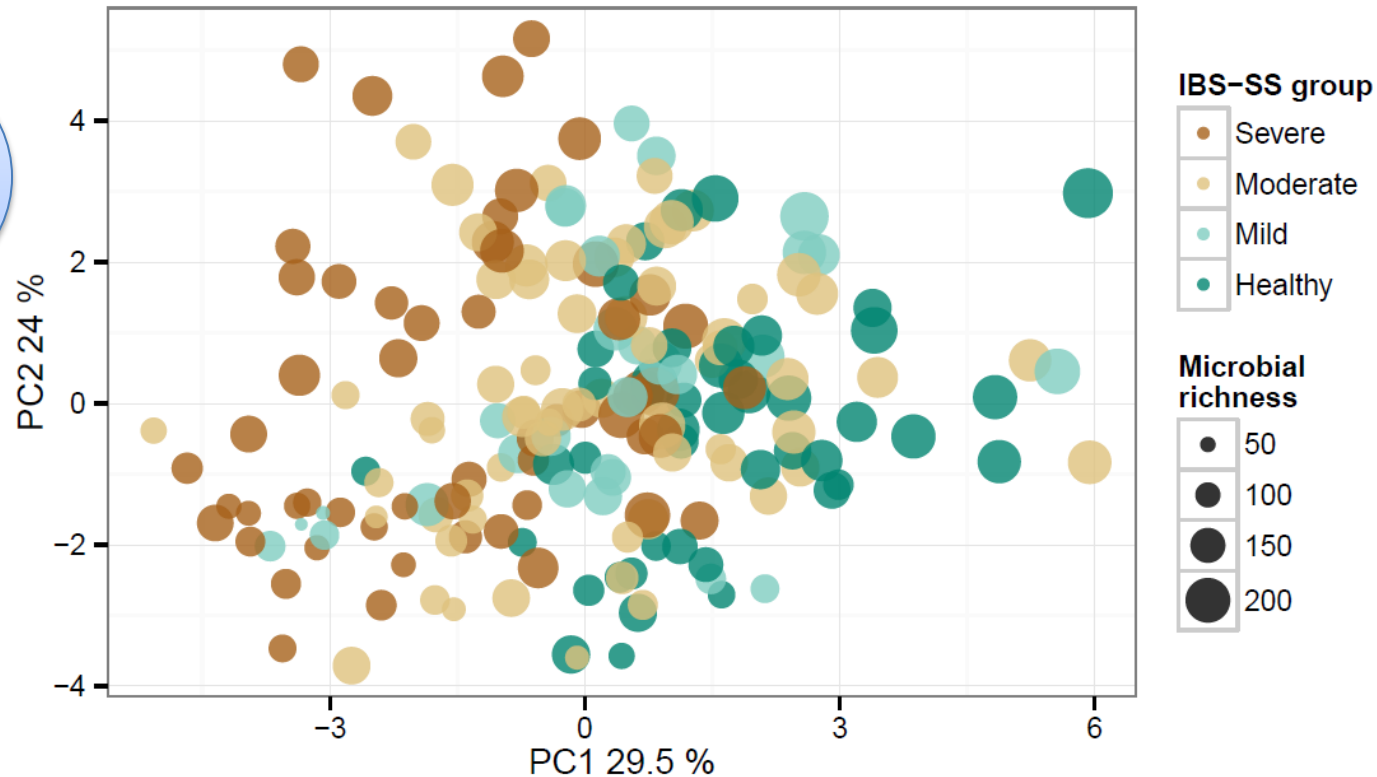


This signature is validated in biopsies and an independent stool samples set



Above Random  
expectation

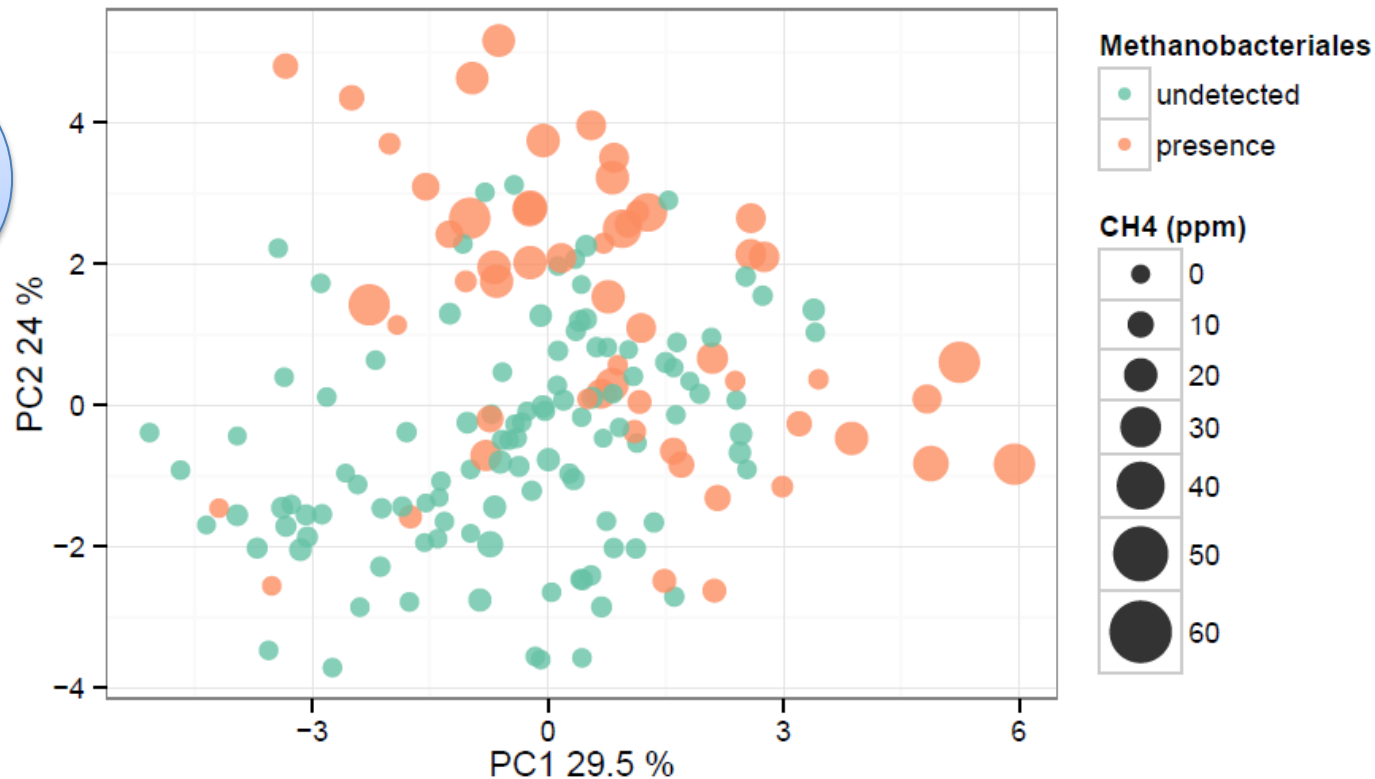
# Gut microbial signature for IBS severity is linked with lower microbial richness



Severe IBS  Healthy

Low microbial richness  High microbial richness

# Gut microbial signature for IBS severity is linked with exhaled methane



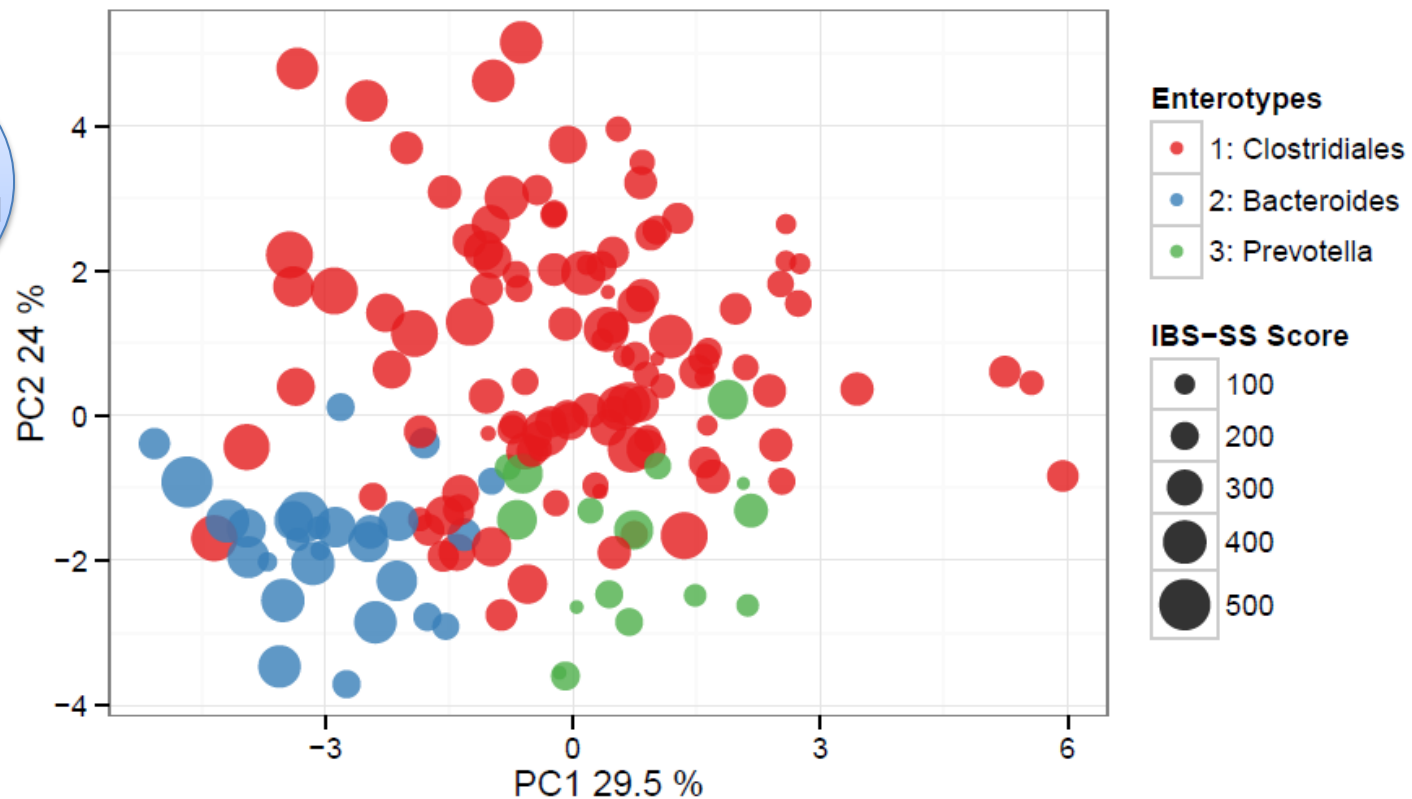
Severe IBS  Healthy

Low microbial richness  High microbial richness

Low CH<sub>4</sub> exhaled  High CH<sub>4</sub> exhaled



# Gut microbial signature for IBS severity is linked with enterotypes



Severe IBS  Healthy

Low microbial richness  High microbial richness

Low CH<sub>4</sub> exhaled  High CH<sub>4</sub> exhaled

*Bacteroides*-type  *Clostridiales* & *Prevotella*-types

# Take home message

- IBS symptom severity is associated with a distinct signature at fecal microbiota level
- Gut microbial signature for IBS severity is linked with
  - low microbial richness
  - *Bacteroides* enriched enterotype
  - low Archea methanogens and exhaled CH<sub>4</sub>



# Acknowledgments



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**INRA**  
SCIENCE & IMPACT

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