2016 Conference Summary

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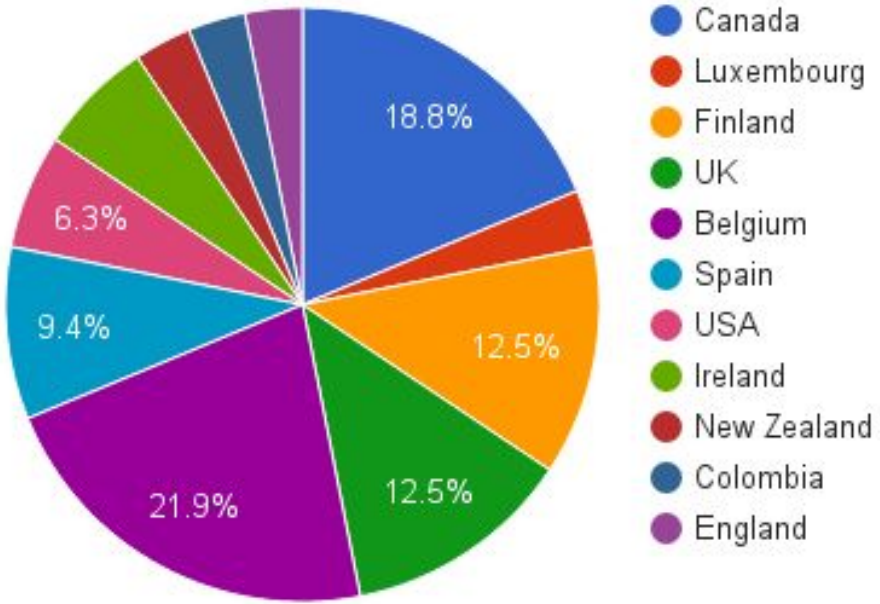
Where are we from



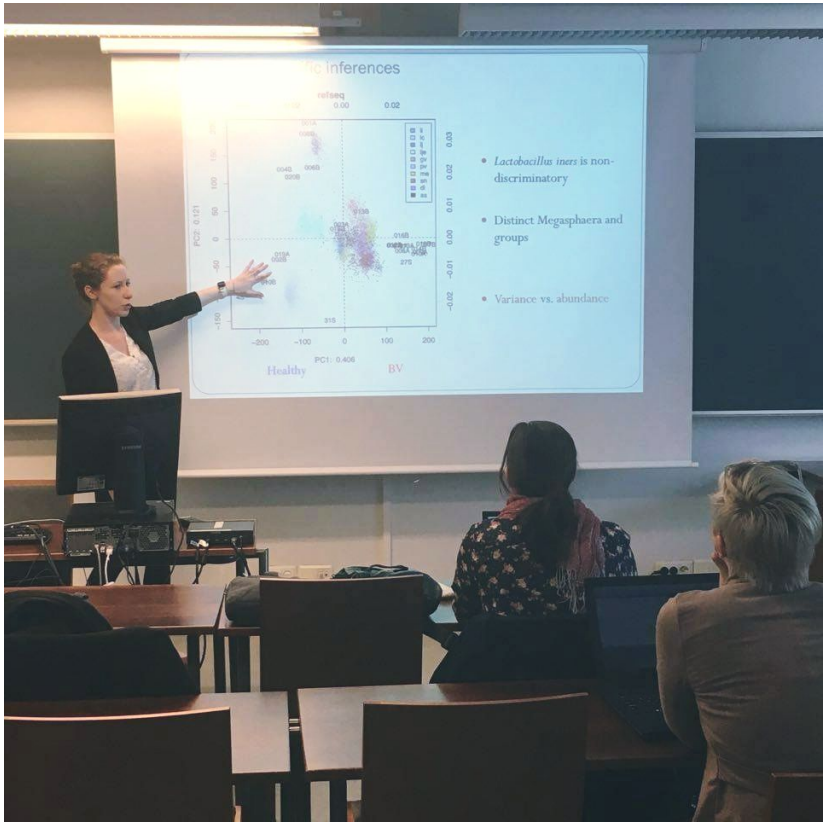
What we do

"….create an interactive **network** of graduate students and postdoctoral fellows across the globe working on probiotics, prebiotics or related fields"

3-Minute Theses, and Virtual Lecture

- All SFA students and fellows had 3 minutes to make an impression and describe their research
- Past SFA member, Dr. Kurt Selle, gave a remote virtual lecture about CRISPR-Cas systems (...at 5 in the morning!)

Microbiome Analysis Workshop



- Scientists are faced with dilemmas of “big data”
- Dr. Jean Macklaim lead a workshop on analyzing 16S and transcriptome sequencing data
- Group learned fundamentals of R programming and how to avoid pitfalls of analyzing sequencing data

Poster Session and Late-Breaking News

- Well received… “Best SFA poster session in years”
- Many students and fellows acquired business cards industry reps… a positive sign!
- Four SFA presented great work at Late Breaking News!

Tour of Turku Centre for Biotechnology

- Met with experts in proteomics, genomics, and cell imaging
- → applications for better understanding mechanisms of probiotics and prebiotics

Knowledge Exchange

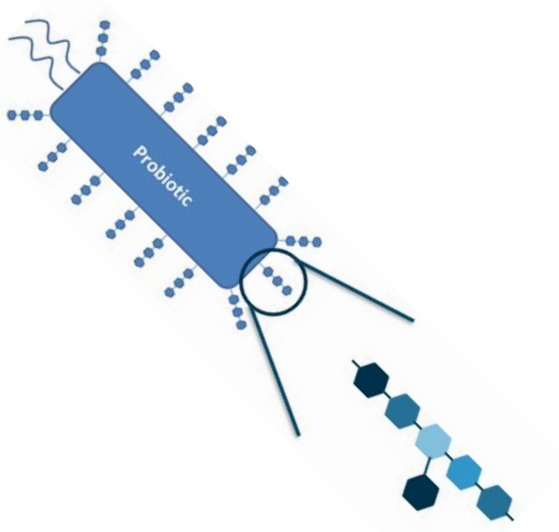
Bacterial-viral-human cells assay - Elke Lievens (Belgium)

- “How to keep everybody happy?” Take into account the needs of each partner of the experiment (bacteria, epithelial cells and virus) since each of them has specific growth restrictions.
- Use appropriate controls - as the more you have, the clearer antiviral activity can be observed

Polyamines in lactation; effects on the microbiome - Carlos Gómez Gallego (Finland)

- Polyamine supplemented milk formula - steer the development of the GUT microbiota of mice to levels similar to the normal lactation
- Polyamine supplemented milk formula - increase Bifidobacterium, *Lactobacillus*, *Akkermansia*, *Bacteroides-Prevotella* and Immune related gene expression in the small intestine

Knowledge Exchange



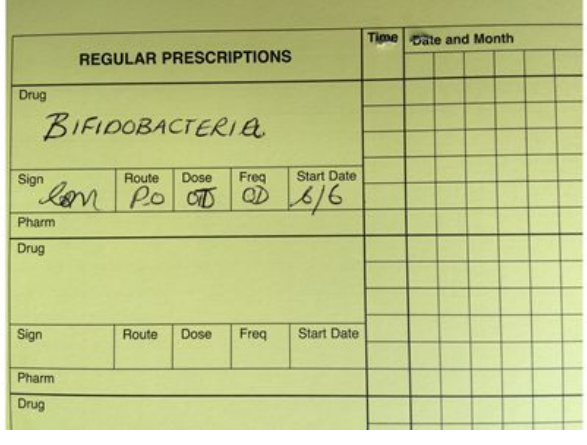
Antibacterial/ pathogen inhibition assay - Marianne van den Broek and Camille Allonsius (Belgium)

- Various antimicrobial assays to study activity of live *Lactobacillus* sp., secreted molecules and cell wall associated molecules
- Collaborative problem solving

Translation of probiotics research into clinical practice - Dr. Claire Merrifield (UK)

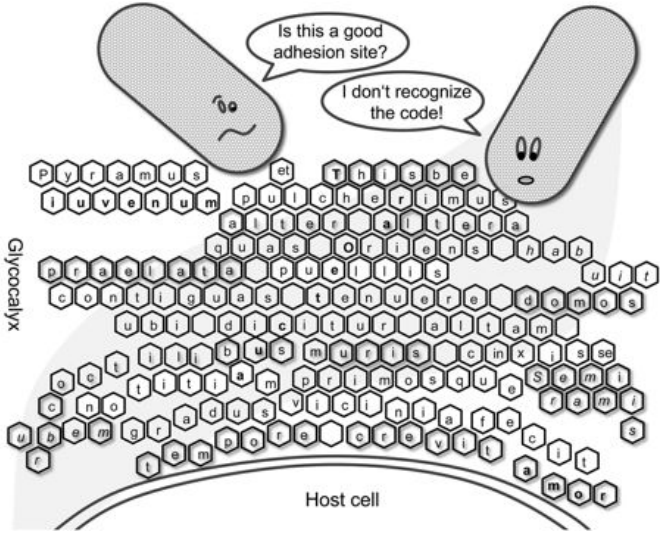
Use of probiotics and prebiotics in clinical settings in UK:

- Probiotics for infants - BioCare, infant formula (*Bifidobacterium lactis* + Fructooligosaccharides)
- Probiotics for prevention of pediatric antibiotic-associated diarrhea
- Hepatic Encephalopathy - Lactulose



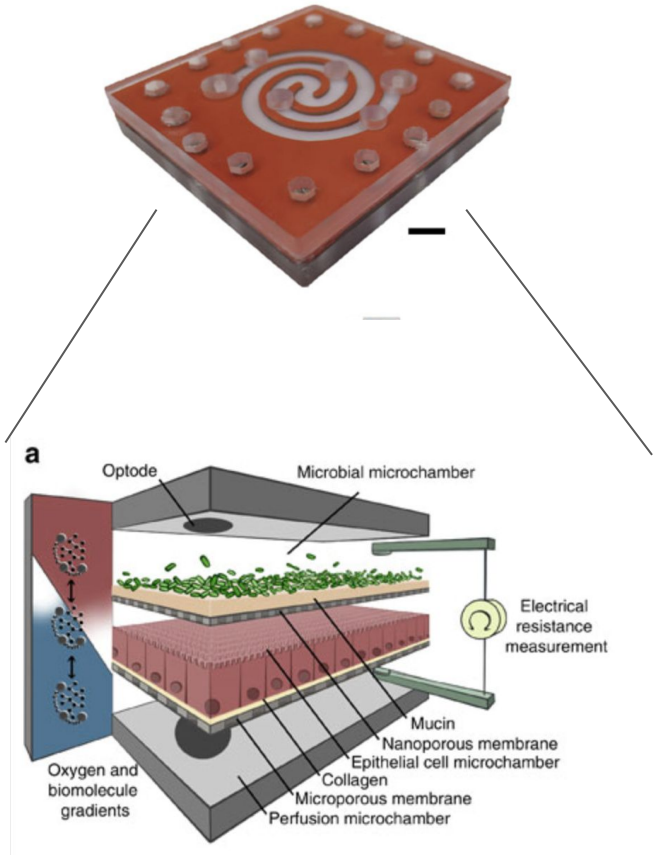
Emerging themes

- “Weapons” of mass probiotics
  - New mechanisms of probiotics
  - “Pathogenic” strategies used for good - lectins, SLAPs ...
- Probiotics for **prevention** vs **treatment**
  - Endothelial dysfunction as an early marker for heart disease
  - Allergies
  - Diabetes
  - Obesity
  - Chronic rhinosinusitis
- Delivery and storage
  - Non-dairy - Bread, muesli
  - Viability over storage conditions



Emerging themes

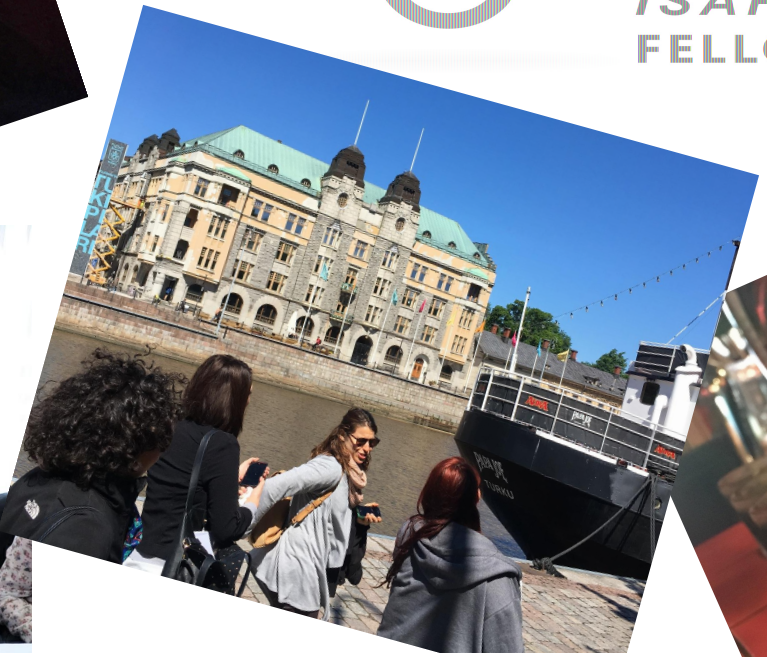
- Site-specific
  - Ear, nasal, oral
  - Breast milk
- Models of pre/probiotics
  - Gut machine thingy (gut model)
  - Piglet, mouse
  - HuMiX
- Unconventional pre/probiotics
  - Genetically modified - incl CRISPR/Cas, viruses
  - Prebiotics directly affecting host
  - Drug delivery with probiotics
  - Agriculture



Kacy Greenhalgh - Luxembourg

SFA

ISAPP STUDENT
FELLOWS ASSOCIA



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