
Section for Nutrition
Research

Who’s in the section

Dr Jonathan Swann

Dr Jia Li

Dr Izabelle Garcia Perez

Dr Ed Chambers

Dr Elaine Holmes

Dr Simon Gabe

Prof Gary Frost

Dr Arron Letts

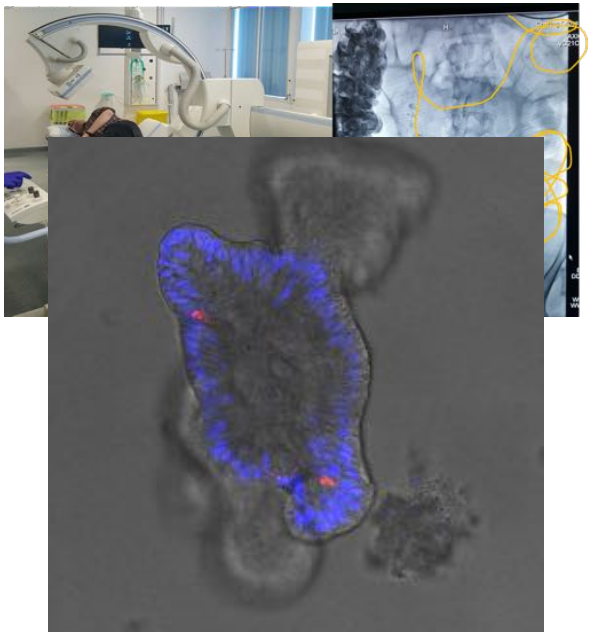
Dr Suzie Barr

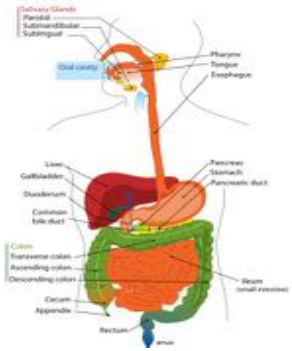
Dr Lina Johasson

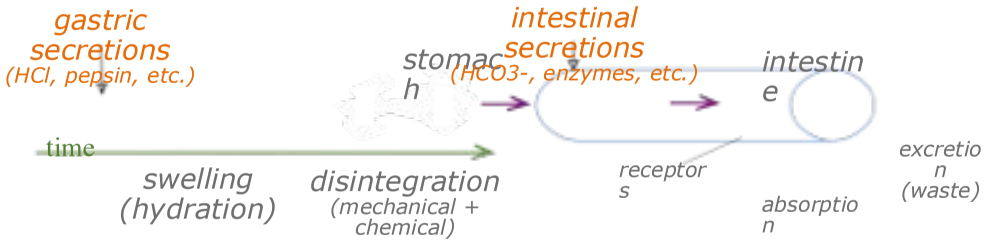
Dr Kevin Marshall-Walsh

Frost Group – Nutrition, Food, Metabolism

- Dietary Assessment
  - Metabolomics – Isabell Garcia
  - Camera - Benny Lo
- Dietary Carbohydrates
  - Fermentable carbohydrate
    - Inulin propionate ester
- Relationship between food and the gut
  - Intubation technology
  - G-protein signalling
  - Organoid systems
  - Food structure
- Development of enhanced feeding systems to support SAM
- Occupational Nutritional Health

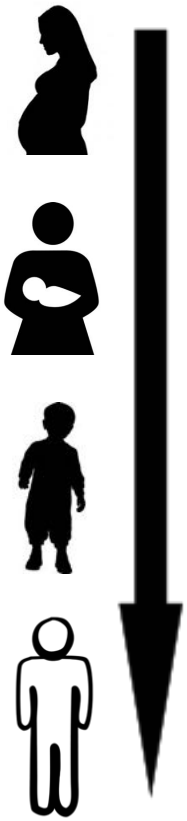






Impact of early-life events on the development of the microbiome and the host metabolic system and the implications for health and disease

Early-life events; nutrition



- Brain development
- Neurological disorders
- Gut health
- Growth and muscle
- Drug metabolism
- Metabolic regulation
- Allergies
- Circadian rhythms

Jonathan Swann

Reader in Microbiomics and Human Development

Main Research Aims

To understand mechanisms of bariatric surgery in order to seek alternative non-invasive treatment for obesity

To explore why the IBD and bariatric surgery patients have higher colon cancer risk in order to manage the cancer risk in these patients

To investigate impacts of dietary components and microbial metabolites on tumorigenesis and inflammation as well as nutritional intervention for reducing colon cancer risk

Teaching and Supervision

UG BMB Year 2: Module lead of Microbiome in Health and Disease (MHD)

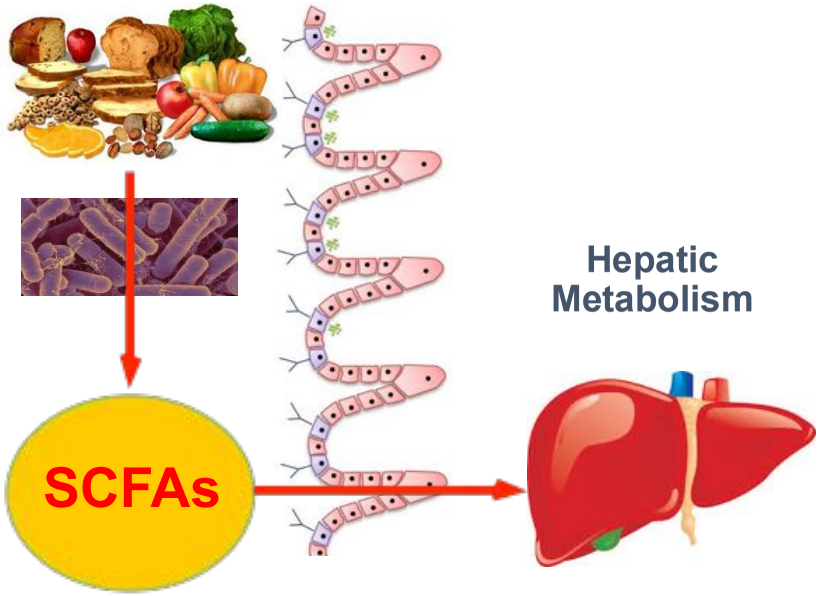
MRes: stream lead of MHD

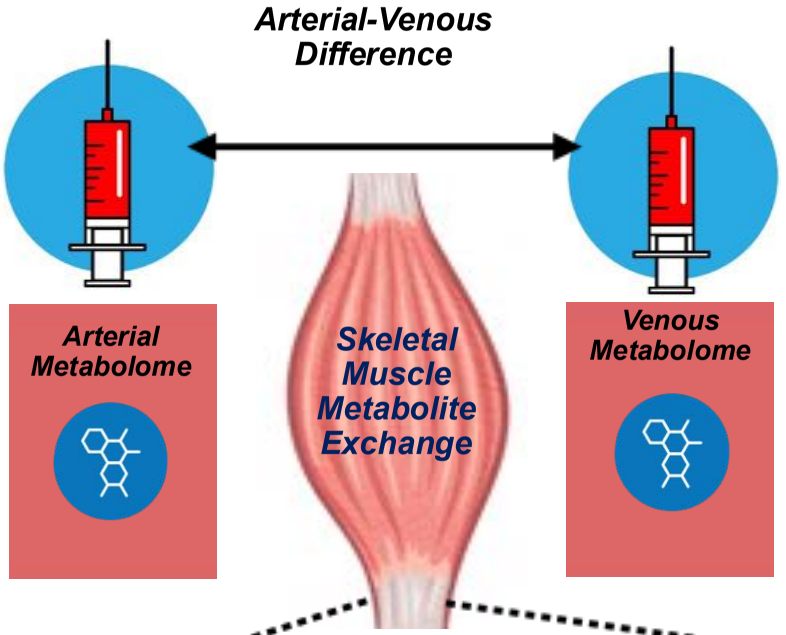
PhD: 6 primary supervisor; 5 co-supervisor; 3 overseas supervisor.

IIPTC: NMR workshop for externals and PhD students.

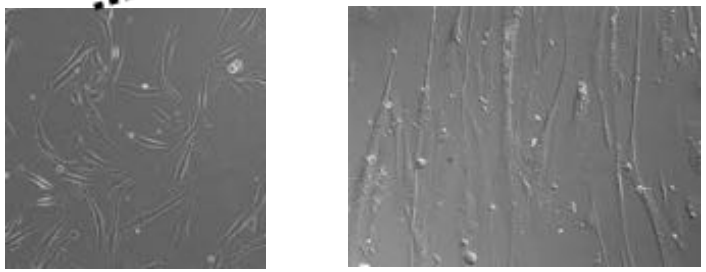
Dr Jia Li

Impact of gut-derived SCFAs on whole-body metabolism



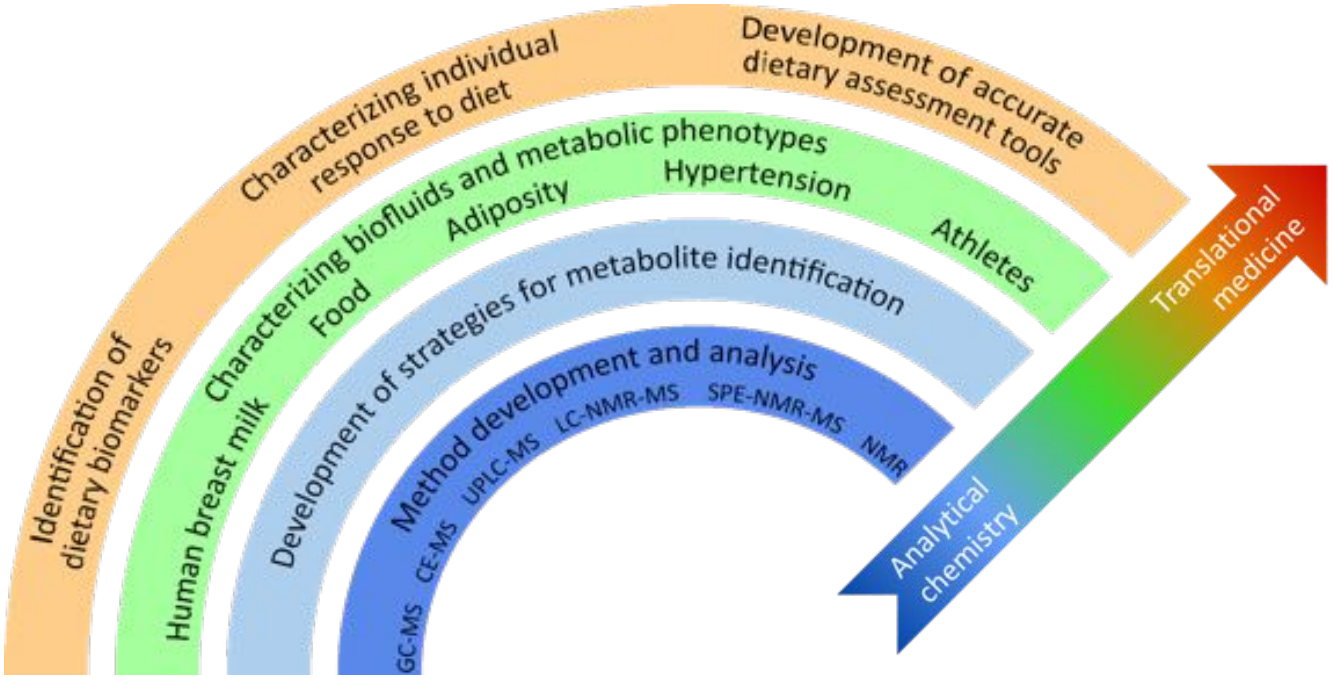


1. How do SCFAs impact hepatic metabolic processes?
2. How does this influence the composition of arterial blood that supplies skeletal muscle?
3. How does this influence metabolite consumption and release in skeletal muscle?



Dr. Isabel Garcia-Perez
Lecturer in Precision & Systems Medicine
NIHR-Research Fellow
STRATiGRAD Academic Coordinator

Research Interest: Personalised nutrition in clinic (NIHR-CDF)



Teaching:
-STRATiGRAD PhD training courses
-MRes in Human Nutrition
-MRes Microbiome in health/ MRes Biomedical Research (Journal Club)
-Hands On NMR course from the Imperial International Phenome Training Centre.

Simon Gabe

- The overall theme relates to the management of patients with intestinal failure:
- **Microbiome and metabolomics**
  - Profile in patients with intestinal failure: effect on complications (CVC infections, venous thrombosis, liver disease)
  - The impact of enteric feeding of the excluded terminal ileum and/or colon: mechanistic, qualitative and clinical aspects
- **Clinical (interventional) studies**
  - A Study of GLP-1 agonist, LIraglutide, on decreasing Parenteral Support requirements in patients with SBS (SLIPS)
  - A phase 3 trial investigating the reduction of parenteral support (PS) in SBS-IF patients under treatment with glepaglutide
- **Intestinal tissue engineering (NPIMP/St Mark's/IC)**

Computational and systems medicine

- Application of metabolic profiling technologies to systems biology and translational medicine problems
- Development of statistical spectroscopy and other data processing methods for discovery and development of metabolic biomarkers for disease
- Development and application of data integration strategies for co-analysis of complex multidimensional datasets
- Development of methods for characterizing metabolic interactions between the gut microbiome and host, with application to assessing the role of microbiome in health and disease.
- Metabolome-wide association studies (MWAS) in molecular

Project Management

- Heptares
- IPE
- MRC global health Project
- BBSRC SME engagement

Georgia Levey

Centre for Translational Nutrition and Food Research Coordinator

Aim: keep the Centre alive through increasing awareness and research collaboration.

RESEARCH /

Gut Health

Imbalances in the gut microbiome contribute to a number of pathologies, such as Inflammatory Bowel Disease (IBD), Irritable Bowel Syndrome (IBS), pouchitis, obesity and allergies. Building upon exciting new advances in microbial signalling and functionality, NIHR Imperial BRC Gut Health Theme operates in close partnership with the BRC's Institute of Translational Medicine and Therapeutics (ITMAT) to integrate and model multi-omic data for patient stratification, as well as identify novel therapeutic interventions through harnessing the power of the microbiome in patients with inflammatory diseases of the gut. Our current areas of research are summarised below.

Gut microbiota

OPEN ACCESS

ORIGINAL ARTICLE

Microbial bile salt hydrolases mediate the efficacy of faecal microbiota transplant in the treatment of recurrent *Clostridioides difficile* infection

Benjamin H Mullish, Julie A K McDonald, Alexandros Pechlivanis, Jessica R Allegretti, Dina Kao, Grace F Barker, Diya Kapila, Elaine O Petrof, Susan A Joyce, Cormac G M Gahan, Izabela Glegola-Madejska, Horace R T Williams, Elaine Holmes, Thomas B Clarke, Mark R Thursz, Julian R Marchesi

Gut microbiota

OPEN ACCESS

ORIGINAL ARTICLE

International Cancer Microbiome Consortium consensus statement on the role of the human microbiome in carcinogenesis

Alasdair J Scott, James L Alexander, Claire A Merrifield, David Cunningham, Christian Jobin, Robert Brown, John Alverdy, Stephen J O'Keefe, H Rex Gaskins, Julian Teare, Jun Yu, David J Hughes, Hans Verstraelen, Jeremy Burton, Paul W O'Toole, Daniel W Rosenberg, Julian R Marchesi, James M Kinross

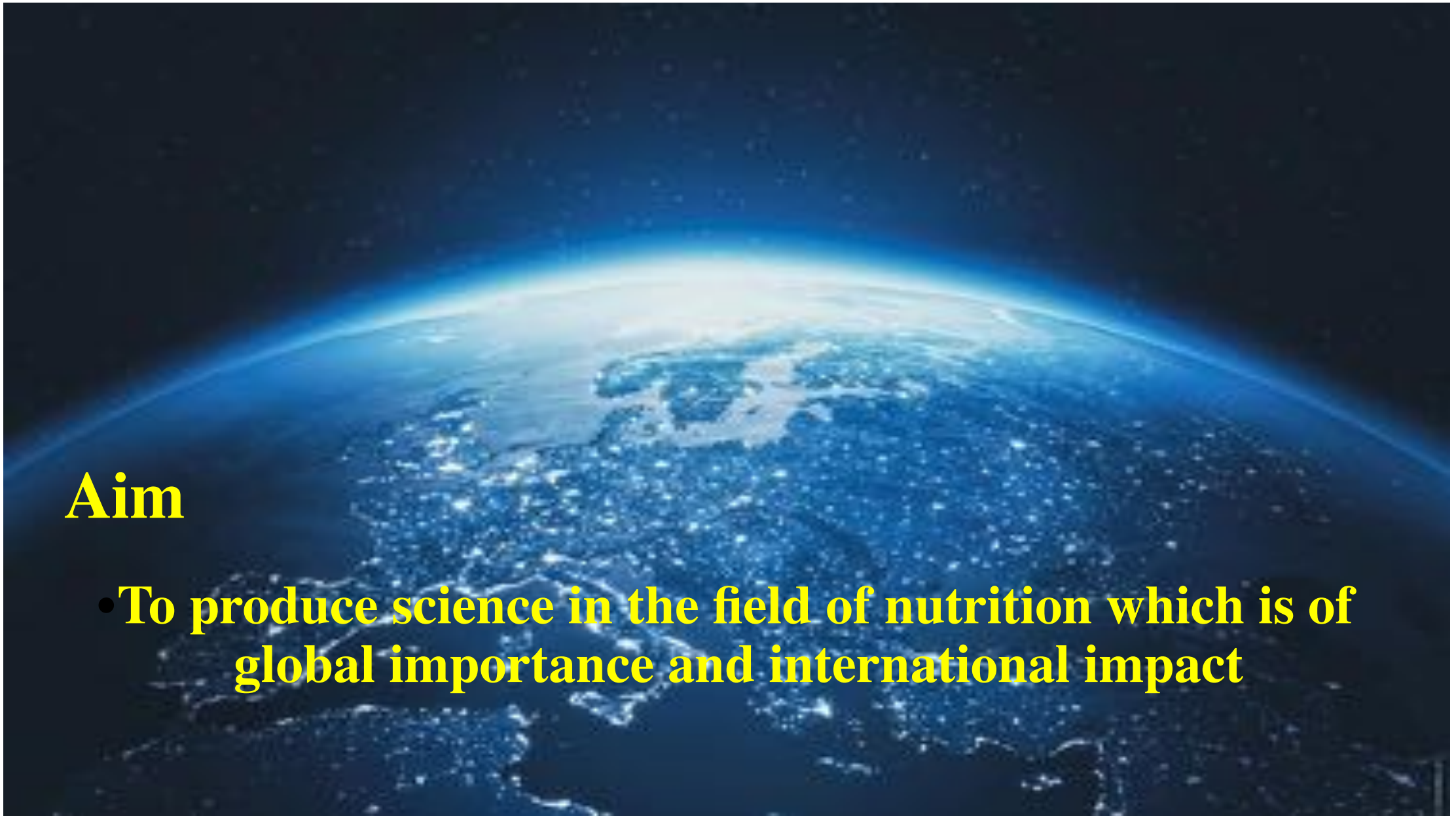
STRATiGRAD

About Training Our students Admissions

Producing outstanding scientists equipped to work at the interface between advanced science, technology and medicine to deliver solutions in personalised healthcare

MRES in Clinical Research

- **Overview**
- The MRes in Clinical Research is an umbrella programme made up of three pathways. **Diabetes and Obesity** - this pathway introduces modern investigative techniques including MRI and metabolomics and provides a deep understanding of the underlying pathophysiology of both types of diabetes, and obesity.
- **Human Nutrition** - this pathway provides a greater insight into the academic, clinical, practical, and regulatory requirements of human nutrition and introduces the latest in cutting-edge research.
- **Translational Medicine** - this pathway explores the challenges of research in non-drug interventional research, including regenerative medicine, and illustrate the use of humans as an experimental animal.



Aim

- To produce science in the field of nutrition which is of global importance and international impact