PhD position at Imperial College London to apply state-of-the-art metabolomics and lipidomics approaches for the analysis of the neonatal faecal microbiome.

RESEARCH FIELDS
Chemistry › Biochemistry
Biological sciences › Biology, Biomedical Sciences, Biotechnology or Molecular Life Sciences
Data Sciences › Bio-informatics
RESEARCHER PROFILE
Early Stage Researcher (≤ 4 years of research experience at time of recruitment)
APPLICATION DEADLINE
30 April 2019 18:00h - Europe/Brussels
LOCATION
- Imperial College London (United Kingdom).

TYPE OF CONTRACT
Temporary, 36 months.
JOB STATUS
Full-time
HOURS PER WEEK
40
OFFER STARTING DATE
Flexible starting June – October 2019
EU RESEARCH FRAMEWORK PROGRAMME
H2020 / Marie Skłodowska-Curie Actions / European Industrial Doctorates
MARIE CURIE GRANT AGREEMENT NUMBER
814168

ABOUT IMPERIAL COLLEGE LONDON

Imperial College London (ICL) embodies and delivers world-class scholarship, education and research in science, engineering, medicine and business, with particular regard to their application in industry, commerce and healthcare. The college fosters multidisciplinary, works internally and collaborates widely externally. Imperial is home to >15,000 students and 7,000 staff and over 6,500 degrees are awarded by ICL every year. The department of Surgery and the National Phenome Centre embedded in the Faculty of Medicine of ICL participate in GROWTH. The highly translational research performed in collaboration between these departments is particularly focused on surgical nutrition and modulation of gut microbiota by pro and prebiotics for improved operative outcomes and perform metabolic phenotyping using high resolution accurate mass instrumentation for the discovery and identification of unknown biomarkers. Dr James Kinross (Colorectal Surgery) and Prof. Dr Zoltan Takats (Professor in Analytical Chemistry and Deputy-Director of the National Phenome Centre) will be supervising the ESR project at ICL.

ABOUT GROWTH

The GROWTH consortium, funded by the European Commission (2019-2023), is made up to train a new generation of researchers working on new pathological insights, biomarker diagnostics and personalized nutritional interventions for intestinal failure in neonates and preterm infants. Academic and industry partners, covering various disciplines ranging from

fundamental research to clinical paediatrics and analytical chemistry to organoid and gut-on-chip applications, have teamed up in the EU:

- Gut Research BV (The Netherlands)
- University Hospital Bonn (Germany)
- Imperial College London (United Kingdom)
- Reckitt Benckiser (United Kingdom)
- Academic Medical Center (The Netherlands)
- Cherry Biotech (France)
- VU Medical Center (The Netherlands)
- TNO Research (The Netherlands)
- Radboud University Medical Center (The Netherlands)

GROWTH is a European Industrial Doctorate programme that requires PhD students to spend at least 50% of their time (18 months) in the non-academic sector.

GROWTH website url: http://www.growth-horizon2020.eu/

ABOUT THE ESR PROJECT

The PhD student will be enrolled in the Imperial College Graduate School of Life Sciences and Medicine and supervised by an academic and non-academic supervisor, equally exposing the candidate to the academic and non-academic sector. He/she will deploy untargeted NMR on a unique neonatal faecal sample set to develop multivariate models for clinical outcome prediction for intestinal failure in preterm neonates based on NMR and MS data sets. Next, he/she will develop a UPLCMS assay for the quantified analysis of faecal bile acids, short chain fatty acids and metabolite species identified by the NMR experiments that will be followed by MS analysis and the development of a novel lipidomic analysis of neonatal faecal samples for biomarker discovery using REIMS analysis. The second part of this project entails the bio-informatics integration of NMR and MS/REIMS data with fungisome and microbiome genomic data sets to generate mechanistic insights of co-metabolic pathways. He/she will also study the clinical feasibility of candidate biomarkers.

COLLABORATORS IN THIS ESR PROJECT:

- GUT RESEARCH BV (Amsterdam, The Netherlands)
- Academic Medical Center (Amsterdam, The Netherlands)
    - Microbiota Center Amsterdam
- TNO, Microbiology & Systems Biology (Zeist, The Netherlands)

SECONDMENTS

During the first 36 months of the ESR project, the candidate will have the opportunity to spend 18 months at GUT RESEARCH (Amsterdam, The Netherlands) to integrate NMR and MS/REIMS data with fungisome and microbiome genomic data sets to generate mechanistic insights of co-metabolic pathways in neonatal intestinal failure. GUT RESEARCH premises are closely affiliated to the Academic Medical Center (Amsterdam) and the University Hospital Bonn emphasizing the open and collaborative atmosphere in our company. The GUT RESEARCH team in Amsterdam consists of scientists, business developers and technicians lead by a principle scientist.

CANDIDATE REQUIREMENTS

REQUIRED EDUCATION LEVEL
A degree (MSc, or equivalent) in Chemistry (Biochemistry) or Health and/or Life Sciences (Biology, Microbiology, Molecular Biology, Immunology, Biomedical Sciences or closely related fields) or Data Sciences (Bio-informatics, Machine Learning). Candidates in the final stages of obtaining their degree are eligible to apply.

REQUIRED LANGUAGES
ENGLISH: Excellent, both written and spoken.

SKILLS/QUALIFICATIONS
We expect a Master´s degree (or equivalent) in Biochemistry, Health and/or Life Sciences or Data Sciences. Furthermore, the applicant should be able to perform team-oriented as well as independent work. Desirable methodological skills: excellent background in molecular biology, biochemistry, cell biology, immunology and/or microbiology, hands-on knowledge of analytical methods. A previous experience of mass spectrometry is desirable.

ADDITIONAL INFORMATION

ELIGIBILITY
Applicants can be of any nationality and must be Early Stage Researchers and shall at the date of recruitment by Imperial College London, be in the first four years (full-time equivalent research experience) of their research careers and have not been awarded a doctoral degree. Furthermore. the applicant must not have resided or carried out his/her main activity (work, studies, etc) in the country of his/her host organisation for more than 12 months in the 3 years immediately prior to his/her recruitment.

RENUMERATION
The per annum MSCA PhD student living and mobility allowance (plus family allowance if applicable, family status is assessed at recruitment) is in line with EU-MSCA requirements. This amount will be subject to tax and employee's National insurance deductions and will be paid in British Pounds.

HOW TO APPLY
Complete applications in English should include the GROWTH Application Form and its mandatory attachments (http://growth-horizon2020.eu/apply-for-a-growth-position). Please note that applications that do not meet these requirements WILL NOT BE CONSIDERED.

Please send the complete package as 1 PDF file via email to info@growth-horizon2020.eu before 30 April 2019 18:00h - Europe/Brussels.

Please familiarize yourself also with the other 7 ESR postings (PhD positions) within the GROWTH consortium (www.growth-horizon2020.eu). Selected applicants will be invited to an Onsite Recruitment Event in Amsterdam on 13 May 2019. Awarding decisions will be announced shortly thereafter, and candidates are expected to be available to start their projects between June and October 2019.

HOW YOUR DATA IS KEPT
The data submitted in the Application Form will be used for recruitment purposes only and shared by members of the GROWTH consortium. The data will be held securely at Gut Research BV (network coordinator of GROWTH) and shared by secure cloud-based storage. Data is intended to be kept for a maximum of four years (the life-span of the project). Further information may be collected from the above-named institutes. Candidates can request deletion of their data by contacting info@growth-horizon2020.eu.