

2023 R&D Postdoctoral Challenge Winner Biographies



Tobi Ayorinde

Specialist Registrar (SpR) in General Surgery, North Middlesex NHS Foundation trust, UK

Biography

Tobi Ayorinde read medicine at the University of Cambridge, followed by clinical training at UCL where he graduated with distinction. He returned to Cambridge as an Organ Retrieval Surgeon, where he began combining clinical and academic interests. There, his doctoral thesis was aimed at advancing quality assessments of kidney transplants. Tobi has remained focussed on translational research with real potential for patient benefit, and his projects have attracted funding totalling £250k, helping him to secure a position as an NIHR Academic Clinical Fellow in North London. His work has earned national awards from the Herrick Society and has led to 20 publications in renowned medical journals. Tobi's writings have explored AI applications in renal pathology, surgical assessments of deceased donor kidneys, and the effects of social media on organ donation, and he participates in AstraZeneca's postdoc challenge with an eye towards collaboration and driving forward innovation.

Proposal title

Bridging the Gap: Utilizing 3D Histopathology and Deep Learning in Renal Transplantation to Decipher the Underpinnings of Chronic Kidney Disease



Sarah Barron

PhD student, Cambridge University, UK

Biography

Sarah Barron is a highly interdisciplinary scientist with a passion for creating biotechnologies capable of sensing at the interface between biology and electronics. She holds a BSc and MSc degree in neuroscience and an MRes in sensor technologies. Sarah has just completed her PhD in Engineering and Biotechnology at the University of Cambridge, where she focused on developing bioelectronic lab-on-chip platforms for drug discovery applications. Since her degrees span a variety of fields, she has gained an extensive and interdisciplinary skill set. Additionally, her collaborative partnerships include academic, industrial and clinical professionals, providing her with the ability to create solutions from a unique perspective, that are fit for the end application. Outside of research, Sarah is equally passionate about STEM outreach, scientific communication and increasing accessibility. She has accumulated 100+ hours volunteering for STEM UK and in 2022 received the Cambridge Vice Chancellor's award for social impact.

Proposal title

A 3D gut-lung-axis model for screening novel antibody-drug-conjugates mediated by FcRn transytosis



Igor Beckers

Postdoctoral researcher, KU Leuven, Belgium

Biography

Igor Beckers is a currently a postdoctoral researcher in the field of homogeneous catalysis and organic synthesis at KU Leuven (Belgium). Holding the degrees of Bachelor and Master in Bioscience Engineering, with the options Cell and Gene Technology (Bachelor) and Catalytic Technology (Master), he is intrigued by both chemistry and life sciences.

His current research focuses on the step-efficient synthesis of pharmaceuticals via Pd catalyzed C-H activation in the De Vos Group (KULeuven). He investigated the design of catalysts for the European Horizon2020 project H-CCAT, in which he also committed to research coordination and international collaboration. In the final year of his PhD, Igor has continued on the development of advanced synthetic methodologies as a visiting researcher in the Stoltz Group (California Institute of Technology). Igor is open to opportunities to continue his postdoctoral research in a related field to further strengthen his scientific experience.

Proposal title

Organocatalytic activation of amino acids and peptides in C(sp³)-C(sp²) cross-coupling reactions



Santosh Gupta

Postdoctoral researcher, Centre for Eye Research and Innovative Diagnostics, University of Oslo, Norway

Biography

Santosh Gupta is a Scientia (Marie Curie) post-doctoral fellow at the Centre for Eye Research and Innovative Diagnostics, University of Oslo, Norway. He is currently working on developing clinical grade Retinal Pigment epithelium patch for Age related macular degeneration treatment along with developing drug-based treatment for improving vision in albinism patients. He completed his PhD in stem cell-based liver regeneration and engineering from Indian Institute of Technology Madras, India in 2021. In his PhD, he developed a time and cost-efficient method for hepatocytes differentiation and its application in cell therapy for liver regeneration and engineering. He completed his masters in biotechnology from KIIT University, India and subsequently joined Indian Institute of Technology Kharagpur in the capacity of project scientist for his pre-doctoral research work on drug delivery system. With immense interest in cell therapy domain, he has also acquired experience and expertise in multidisciplinary topics encompassing biomaterials, tissue engineering and advanced drug delivery in his scientific career.

Proposal title

RepReg - A dual cell therapy strategy for repairing and regenerating fibrotic liver



Bariaa Khalil

PhD student, University of Sharjah, UAE

Biography

Bariaa Khalil is originally from Lebanon. In 2008, she got her bachelor's degree in medical laboratory technology from the American University of Beirut. Then, she worked for one year as a clinical research assistant on a study investigating the genes underlying cardiac diseases. In 2012, she finished her master's degree in biology during which she investigated the preclinical efficacy of the synthetic retinoid ST1926 for treating adult T-cell leukemia. After that, she moved to Saudi Arabia and worked as a research assistant in King Faisal Specialized Hospital and Research Center. During her stay in Saudi Arabia, she finished her second master's degree in international management specializing in healthcare administration at the University of Liverpool. In 2014, she moved to Dubai and worked for 5 years in the medical insurance domain where she started as a senior medical insurance specialist and got promoted after two years to manage the medical insurance team.

Proposal title

Inflammasome pathway at the single cell level in severe steroid resistant asthma (SSRA) and its mechanisms of action on steroid resistance



Sabrina Mackinnon

Postdoctoral Researcher, Biosciences Institute, Newcastle University, UK

Biography

Sabrina Mackinnon is a postdoctoral research associate at the Biosciences Institute, Newcastle University, UK. During her undergraduate studies at Robert Gordon University, Aberdeen, Sabrina became intrigued by how metabolic enzymes as a whole have the diversity to catalyse all chemical reactions in all living things, and yet follow the same general principles.

This led to her PhD at the University of Oxford, working on several different metabolic enzymes before investigating two as drug targets. This work attracted funding for her subsequent postdoctoral positions, evolving the discovered hits into leads, first working with Evotec at the University of Oxford for a year then her current position at Newcastle University, guided by senior industry scientists through the Harrington Discovery Institute. In both positions, Sabrina aimed to bridge the distance between clinical scientists – who know the patients' needs – and industrial scientists – who have the technical knowhow to develop new therapies.

Proposal title

Investigation of substrate reduction and pharmacological chaperone therapeutic approaches to treat primary hyperoxaluria and other disorders of oxalate homeostasis



Javier Aguirre Rivera

Postdoctoral Researcher, Uppsala University, Sweden

Biography

Javier was born in Chihuahua, Mexico, where he studied Chemical Engineering, earning the highest GPA in his class. He was granted a full scholarship by Mexico's National Council for Research and Technology to pursue a Master's in Applied Biotechnology at Uppsala University.

During his Master's, Javier initiated the development of a ground-breaking single-molecule fluorescence microscopy technique to study real-time protein synthesis in live bacteria, which continued into his Ph.D. His doctoral work applied the method to investigate the effect of different antibiotics on bacterial protein synthesis, contributing to the understanding of their molecular mechanisms of action. After defending his Ph.D., Javier became a post-doctoral researcher at Sebastian Deindl's lab, focusing on the development of a multiplex microscopy-based method that aims to explore the effect of sequence identity on DNA hybridization and protein-DNA interactions. Javier's journey reflects his commitment to scientific advancement, using biophysics tools to understand the mechanisms of life.

Proposal title

Multiplexed optimization of mRNA translation for nucleotide therapies



Jacob Franklin Wardman

PhD student, University of British Columbia, Canada

Biography

Jacob Wardman is currently a biochemistry PhD candidate in the laboratory of Stephen Withers at the University of British Columbia. His undergraduate education was carried out at the University of Calgary, where he finished with the highest standing within the Department of Biological Sciences. His PhD research focused upon the discovery and engineering of enzymes to modify and manipulate certain sugar structures present on glycoproteins. To carry out these protein engineering and discovery campaigns, he applied a number of (ultra)high-throughput screening methods. Further, as part of his PhD, he carried out a research exchange at the University of Cambridge under Prof. Florian Hollfelder to learn cutting edge techniques in microfluidics. His work has also shown the utility in leveraging synthetic biology to enable new approaches for engineering enzymatic activities as evidenced by his recent publication in Nature Chemical Biology.

Proposal title

Towards bespoke protein modification and next-generation therapeutics via engineered enzymes