UCAM framework 2024 project call

Research interest areas and Criteria

2024

Innovative Technologies and Platforms Research focussed on the development and delivery of new technologies and platforms used in early research.

Chemistry focused research topics

- Automation and high throughput experimentation in chemistry

- miRNA mimics as new modalities

- biorthogonal Chemistry for small and large modalities

- Research to support new & novel drug delivery technologies including polymer based systems, viral vectors for RNA and tumour targeted delivery.

Bioscience focused research topics

- Applying multi-omics and advanced analytics to understand pathogenesis of disease and generate precision medicine hypotheses in chronic disease in the cardio vascular, renal and metabolism fields

- Advanced 'omic urinary analysis for novel understanding of the pathogenesis of cardio-renal metabolic diseases

- Patient & Disease Centricity and Clinical Trial Transformation

- How to deliver high subcutaneous doses of biopharmaceutical drugs through for example stabilising high concentration protein formulations, and prediction/modelling of their bioavailability post administration.

- Improving expression and product quality of multi-chain therapeutic glycoproteins

Novel Biological and Chemistry Research Novel research aiming to expand our understanding of the drivers of disease and developing new methodologies to support development of new therapies

Chemistry focused research topics

- New Synthetic chemistry methodologies including scale up

- New Catalysis and Bio-catalysis for more sustainable chemistry

- Formulation of inhaled biologics

Bioscience focused research topics

- Human models to interrogate biological pathways and mechanisms in Respiratory & Immunological chronic disease

- Understanding the mechanisms and therapeutic interventions of the DNA damage response pathways

- Research into the RAS signalling pathway to generate new insights

- Research to develop understanding of tumour driving oncogenic pathways

- Causal insights in respiratory, gastroenterological, dermatological and rheumatological chronic diseases

Continued..

Novel Biological and Chemistry Research aiming to expand our understanding of the drivers of disease and developing new methodologies to support development of new therapies

Bioscience focused research topics

- Research into the Epithelial barrier in lung, skin and gut to generate novel insights

- Understanding the mechanisms which drive chronic inflammation in metabolic diseases

- The role of microbiome in pain and inflammation

- Accelerating & Humanising Predictive Safety

- Biology of Endocytosis

- Endosomal escape for delivery vectors

- Investigation of mechanisms that can lead to functional repolarisation of myeloid cells in the TME

- Exploring novel approaches to overcome T cell dysfunction

- Identification of novel tumour specific antigens for use in synthetic (T cell engagers / CART) immunity

Science, Data and Technology research which brings data, technology and science together to provide new insights and novel approaches to drug discovery and development

Chemistry focused research topics

- Novel analytical, modelling and computational methodologies in Chemistry (including AI)

- Artificial Intelligence, Machine learning and automation to accelerate drug design & synthesis

Bioscience focused research topics

- Predicting synergistic target combinations for the treatment of respiratory and immunological chronic disease

- Longitudinal phenotyping of ALS patients, polygenic risk score and co-correlates

- Redefining wet lab approaches using Data and AI

- Optimising clinical trials for speed, cost and success

- Optimising medicines for patients

- Harnessing Data, AI & Automation In clinical pharmacology and safety science

Submission criteria

- Submissions must align with one or more of the research themes

- Submissions are limited to one per PI

- Projects must be truly collaborative with AZ participation throughout advertisement, recruitment and delivery of the project

- Projects need to be advertised via the university jobs and CATS website as AstraZeneca funded projects.

- Prioritisation of submissions to PIs who have not had an AZ funded studentship in previous call