Biochemistry

1. Using AI to Predict Drug Response in Cancer

Principal Investigator: Dr Frances Pearl
Description:
In this project, you will develop artificial intelligence methods to predict drug responses in cancer patients. By integrating multi-omics data, the research aims to identify biomarkers that can guide personalised therapy.
References:

- Identifying actionable synthetically lethal cancer vulnerabilities (2021)

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2. Exploring the Dynamic Interactions of the HPV Oncoproteins in Head and Neck Cancer

Principal Investigator: Ethan L Morgan
Description:
Head and neck squamous cell cancer (HNSCC) is a highly prevalent and aggressive disease. This project investigates the molecular interactions between HPV oncoproteins and host cellular pathways to uncover new therapeutic targets.
References:

- Morgan EL, Saleh AD, Cornelius S, Carlson SM et al. (2020)

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3. Understanding and Overcoming Immune Escape in Pancreatic Cancer

Principal Investigator: Leandro Castellano
Description:
Pancreatic adenocarcinoma is one of the deadliest cancers due to its ability to evade immune responses. This project focuses on characterising immune evasion mechanisms and developing strategies to enhance immune recognition and therapy.

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4. The Development of Novel Vaccine Antigens and Therapeutic Targets for Pathogenic Viruses

Principal Investigator: Edward Wright

Description:

The World Health Organization has identified priority pathogens requiring novel

vaccine development. This project aims to design and test new antigens and therapeutic approaches for emerging viral infections.

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5. Uncovering the Structural and Molecular Mechanisms of Early Vertebrate Development

Principal Investigator: Erika Mancini
Description:
During early vertebrate development, cell fate decisions are tightly regulated by molecular interactions. This project explores the structural mechanisms underlying these processes using advanced imaging and biochemical techniques.