Pfizer-Technion Pharma-AI Initiative

Call for Proposals in Next-Gen Drug Safety

Under the Technion-Pfizer Initiative, we are seeking proposals in the following area:

Multi-omic perturbation analysis and prediction to bridge the cross-species gap

Submission Deadline: April 7th, 2024

Although animal data is pivotal in assessing drug safety, FDA now mandates a strong reduction in animal model use while seeking improved accuracy of drug safety. The recent explosion in multiple 'omic technologies and AI offers a unique time to introduce novel hybrid (data & algorithmic) approaches to address issues in drug safety.

Submissions are invited along three tracks:

Track 1: Multi-omics time series experiment in animals and organoids to learn perturbation effects on toxicity (compound data to be provided by Pfizer + standard of care therapies). Generating time-series multi-omic perturbation experiments in mice/rats to answer questions such as: What is the perturbation effect ? Which biological changes associate with toxicity effects ? Which experimental design would be most useful to predict toxicity ?

Track 2: Development of bioinformatics tools tailored for animal models. Current bioinformatics tools (such as gene ontology) primarily rely on a backbone built on human data. Using data-driven approach develop annotation tools that are species specific, and can yield better signal interpretation and translational understanding.

Track 3: Computational approaches for bridging the cross-species gap. Building machine learning approaches to address drug safety challenges such as: predicting the most fitting species safety studies or predicting the effect of a perturbation in a large animal model or human, given mouse perturbation data.

APPLICANTS:
Principal investigators from the Technion are invited to submit research proposals for projects covering one or more of the proposed tracks. Consortia are encouraged. The ideal team spans AI, biology and translational expertise.

PROJECT CRITERIA:
The proposal must be led by Technion PI.
Each PI can only apply to one project.

SUBMISSION PROCESS:
Step 1: Submit a one-page non-confidential pre-proposal to outline:
Main Goal and Research Synopsis | Scientific background |Proposal theme and scientific edge. Pre-proposals once finalized should be submitted to Technion Tech AI (info-biomed@tech-ai.technion.ac.il).
Step 2: The non-confidential pre-proposals will be reviewed by a Pfizer and Technion team and certain proposals may be selected to advance to confidential (full-proposal) discussions.
Step 3: Pfizer and Technion team may select certain full proposals for funding contingent on the execution of an agreement with mutually agreeable budget and terms that would cover the proposed collaboration.

For more information about submission process, areas of interest, and/ or clarifications contact Renana Sabi renana.s@technion.ac.il

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