Sanofi iDEA-TECH Awards North America 2024-2025 Call for Pre-Proposals

Description & Objectives

Sanofi is a global pharmaceutical company committed to improving access to healthcare and supporting the patients we serve throughout the continuum of care.

The Sanofi iDEA-TECH Awards initiative is designed to innovate through collaborations, with a focus on **cutting-edge digital and data tools and new technologies for R&D applications.** The goal is to:

- Identify **new projects** and help develop new approaches and translational technologies from key academic institutions and start-ups
- **De-risk** cutting-edge science and technologies that can bring high potential value to R&D
- Build strong **relationships** with new partners that can lead to **longer-term partnerships**

Each selected Investigator will collaborate with Sanofi and receive up to **$150K USD*,** have a **dedicated Sanofi scientific expert assigned to the project** for 1-year and gain **privileged access to developing an extended collaboration**.
*Funding includes indirect costs and cannot be used to fund a clinical trial

Sanofi's main objectives in creating the iDEA-TECH Awards program are to rapidly start one-year projects that maximize the opportunity for continued collaborations of mutual interest.

Application Process

iDEA-TECH Awards 2024-2025 is open to **academic institutions and start-ups across North America**.

Ideas must be submitted using the provided *Pre-proposal template* and submitted via the *iDEA-TECH portal link*. Before submitting, please work with your **Tech Transfer Office (TTO)** or business office to make sure that your proposal is aligned with the scope and fulfills the application criteria of the call (see below for a list of discussion points to have with your TTO or business office):
- Selected institutions will collaborate with Sanofi during the 12-month iDEA-TECH award
- Selected institutions will agree to allow Sanofi a 30-day review prior to submittal of any outputs of this funding award (i.e., publications, etc.)
- Selected institutions will pre-negotiate any third-party involvement, as applicable, between the selected institution and the third party prior to signing the iDEA-TECH award contract
- Receiving the iDEA-TECH award is contingent on the institution completing the various contracting stages (research plan development, initial contract redlines, contract signing) within the Sanofi contracting timeline (see below timeline)

Pre-proposals that are not validated by your institution TTO (for academic PIs) or do not fit with the guidelines (format, timeline, etc.) will not be evaluated. Please note that pre-proposals must not contain any confidential information or unpublished results and cannot include 3rd party collaborators other than those involved in the iDEA-TECH Awards initiative.

Submission portal link: iDEA-TECH North America 2024

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Selection process

Projects will be prioritized through a **2-step selection process**.

Step 1: The first step involves the evaluation of the 3-page pre-proposal form (enclosed template), which was designed to be easy to populate and review. Please note that there is no requirement around the level of maturity for each project at this stage. However, the Investigator must provide clear objectives and a concrete work-plan achievable within 12 months. Pre-proposals should also address one or several of the priority areas of interest described below under the "scope of the call".

Step 2: Selected pre-proposals will need to be developed further in the form of a detailed proposal (8 to 10-pages document) and reviewed for final selection by the Sanofi Steering Committee. Based on the feedback the Investigator may be asked to work with a Sanofi Champion to refine their proposal.

Sanofi iDEA-TECH Awards timeline

Main steps	Due date
Call for Pre-Proposals	**November 4, 2024**
Deadline for Pre-Proposals submission	December 12, 2024
Call for detailed proposals	**February 3, 2025**
Deadline for Detailed Proposals submission	March 7, 2025
Steering Committee Meeting	May 16, 2025
Awardees notified, pending contract signing	**June 6, 2025**
Research plan finalization	July 11, 2025
Contract redlines/comments	August 29, 2025
Contract signed	October 6, 2025
Start of projects	**November 3, 2025**

Should you have any further question regarding the initiative, application, selection process, scope, etc. please contact:
SRI-NA@sanofi.com

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Scope of the Call

iDEA-TECH Awards 2024-2025 Cycle

Evidence Generation and Decision Science (EGDS)

Artificial Intelligence/Machine Learning in Clinical Trials

AI/ML methods to support clinical trial design and decision-making.

AI digital twins, causal AI, and individualized treatment effect inference.

AI methods to enhance patient inclusion and diversity in trials.

Optimization of endpoint selection in clinical trials.

Development and use of digital biomarkers.

Real-World Evidence (RWE)

- Real-world target trial emulation.
- Therapy Effectiveness and Indication Prioritization in real-world settings, including long-term follow-up.
- Disease modeling (progression and natural history).
- Prediction models to prioritize drug combinations using patient real-world data (RWD).
- Alternatives to knowledge graphs for drug repurposing.

Health Value Translation (HVT)

Natural Language Processing (NLP) and AI algorithms to analyze Patient Experience Data (PED) from various sources like social media, patient forums, and electronic health records.

Dynamic tools for sentiment analysis and PED from multiple sources, segmented by sub-populations (e.g., gender, age, race/ethnicity, country of origin) to visualize and translate insights into a structured patient journey, with a focus on immunological conditions like asthma, hidradenitis suppurativa, and osteoarthritis.

Precision Medicine & Computational Biology (PMCB)

Data- and AI-driven analytical and experimental frameworks to dissect cellular and molecular etiology of immune, immune-oncology and neurodegenerative conditions. These can include, but are not limited to:

Analytical tools to gain biological insights through integration of single cell, spatial biology, and other orthogonal data types.

Multi-omics and/or digital biomarkers of disease onset and longitudinal progression of diseases

Multi-modal molecular characterization of immune conditions to develop biomarker-driven precision medicine strategies.

Technologies linking different reads outs such as protein and RNA expression, functional readouts at single cell resolution.

Parallel CRISPR-Based Genetic Perturbation Screening at Single-Cell Resolution (Perturb-seq), particularly for combinatorial perturbations in immune cells or immune-disease-relevant structural cells.

Drug Metabolism and Pharmacokinetics (DMPK)

- Machine Learning/PK-PD modeling framework combining data-driven insights with mechanistic understanding to predict disease progression, treatment response and improve decision-making.
- ML-driven prediction of ADME enzyme liabilities and kinetic parameters to support mechanistic pharmacokinetic modeling.
- New scalable and applicable 3D/Microphysiological system (MPS) of Blood-Brain Barrier Organ-on-Chip Platform for the evaluation of brain penetration and toxicity of small molecule drugs and biologics.

Integrated Drug Discovery (IDD)

RNA Targeting Small Molecules
- Cell screening and tool validation.
- RNA-small molecule binding using structural biology and biophysics.
- In-Silico Design of RNA-targeting molecules.
- RNA-focused chemical libraries for RNA binders/modulators.

Structural Biology and Imaging
- Integrative structural biology to study drug interactions with membrane targets.
- Use of Cryo Electron Tomography to understand target engagement and mechanisms of action.

AI and Machine Learning approaches
- Physics-based and ML methods to analyze biological macromolecule flexibility
- Methods to explain AI-based models for multi-parametric optimization.
- AI tools to develop biological assays.
- Generative AI to enhance hit identification in drug discovery screens.
- AI tools to identify mechanisms of action from cell painting assays.

Chemistry and Drug Design
- Design of chameleonic leads with improved ADME properties using novel chromatographic and spectroscopic methods.
- Synthesis of new bioisosters and peptidomimetics for macrocyclic bioactive compounds and molecular glues.
- New molecular glue compounds that regulate immunology target proteins through degradation assays or protein ternary complex formation.
- High-yielding reactions with low equivalents of C-X building blocks, including CO_2 or other surrogates.
- Transition from peptide to ligand (drug) design.
- Green chemistry options to reduce the use of DMF in drug discovery.
- Translational human cellular 3D/microphysiological systems for high-throughput pharmaceutical compound

Large Molecule Research (LMR)

- **Oral Delivery of Biologics**: Technologies to enhance the bioavailability of biologics (e.g., antibodies, VHH, darpin) when taken orally, using active transport or formulation methods.

- **Intracellular Delivery of Biologics**: Methods to deliver biologics (e.g., antibodies, VHH, darpin) into the cytosol, including novel protein scaffolds, endosomal escape mechanisms, and cell-penetrating modules (excluding nucleic acid delivery).

- **Topical Delivery of Biologics**: Technologies, including computer-assisted strategies and formulations, for localized treatment of the skin, ensuring effective delivery of biologics to the appropriate skin layer.

- **Digital Technologies**: Computer-assisted methods to enhance the generation of biologics (e.g., antibodies, VHH) for targeting diseases in immunology, inflammation, rare and neuro diseases, and oncology. This includes in silico protein

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Translational Models (TIMs)

Development and validation of complex i3D-organoid in vitro models for human diseases.

Use of multicompartmental human organ-on-chip and 3D organoids to test new therapeutic molecules and understand their mechanisms of action.

Novel tissue expansion microscopy and super-resolution imaging for high-resolution spatial analysis of tissue samples in combination with antibody staining and biomolecule-specific fluorescent dyes to investigate specific targets, disease-driven tissue changes, and inflammation in complex tissues.

New AI/ML tools for automated annotation and analysis of digital pathology and multimodal images (e.g., MRI, microCT, ultrasound).

Application of large language models in digital pathology.

Pre-Clinical Safety (PCS)

Gen-AI driven chatbot for intuitive and easy searching of preclinical safety data that can be adapted and tailored for Sanofi preclinical safety reports:

Capable of supporting searches of reports

Capable of drafting reports

Capable of mining study designs and extracting optimized parameters to enable better safety assessment and preclinical/clinical translation.

In vitro 3D microphysiological system using neuronal human cells for understanding ADME and safety questions related to large and small molecule interactions with the blood brain barrier.

Vaccines

Use of Artificial Intelligence

To develop virtual patient vaccination models.

To build on "Smart RNA vaccines" for regulated and cell-specific expression.

To streamline the sequence-to-mRNA vaccine process.

To design new vaccine antigens and analyze vaccine data.

Targeting and Disease-Specific Vaccines

New targeting systems for cell-guided vaccines.

New technologies for vaccines against autoimmune diseases (e.g., IBD, MS, lupus) and allergies.

New biological approaches to prevent aging-related diseases.

New Vaccination and Administration Technologies

- Tolerogenic approaches for T cell vaccines, focusing on route, adjuvant, formulation, and design.
- Improvement of mRNA vaccine delivery into the cytosol.
- Alternative vectors and administration routes.
- Develop controlled release mechanisms, eliminating the need for boosters.

Immunological Analysis and Evaluation

Multiparametric immunological analysis on microsamples.

New technologies to assess mucosal immunology post-vaccination.

In-vitro and in-silico immunogenicity readouts of drug product formulations.

Vaccine Stability and Production

Enhance the stability of RNA-based vaccines.

Protein Production with cell-free systems, scalable to GMP manufacturing.

Improved E. coli Strains combined with antibiotic-free selection systems for plasmid manufacturing.

Universal Liquid Formulation for thermostable vaccines.

Tests and Equipment

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Genomic medicine (GMU)

- Gene therapy delivery of antibodies.
- Non-viral gene therapy (RNA or DNA payloads) for CNS, ocular, or muscle delivery.
- Modulation of non-viral gene therapy -mediated immune responses.
- Development of novel cell internalization sequences, degradation motifs, or active sites to enable targeted immunotherapies.
- AI-driven discovery of novel, tissue-specific viral and non-viral delivery methods.
- Structural biology driven discovery of novel, tissue-specific viral and non-viral delivery methods (including synthetic protein-based delivery vectors).
- Hybrid viral-non-viral delivery tools.
- Discovery/identification of targetable human receptors to aid rational design of delivery vectors.
- Non-viral delivery platforms that are less than 35nm.
- Gene Regulation
  Development of a compact, tunable alternative splicing platform for the co-expression of multiple proteins from a single RNA transcript.
  Small molecule transcriptional modulators for gene regulation, enabling divergent/convergent regulation of two genes.

Chemistry Manufacturing and Controls (CMC)

Gene therapy CMC
Economic analysis for viral and non-viral gene therapy manufacturing process
Strategies for improving viral vector volumetric productivity and full capsid packaging.
PAT for viral titer and product quality (Empty/Full) inline measurement
In silico Process Development/modeling for USP and DSP viral production
Relationship between adenovirus and AAV packaging and identify virus replication modulators.
Non-viral gene therapy: Developability of antibody fragment lipid micelles for targeted LNP delivery
Developability and Process development of Nanobody lipid micelles for targeted LNP delivery

Drug Substance
  Biologics
Process Intensification to reduce Cost of Development and Cost of Goods.
Understanding of CHO metabolism and regulation of signaling cascade to improve design of media.
High expression CHO host and vector technology development.
High Throughput Tools & Simulation/Modelling Tools to Increase Development Efficiency.
Novel sensors and analyzers for inline / online analysis of product quality attributes.
Process automation and digitalization for microbial processes.
  Synthetics
Predictive Solubility, Predictive Reactivity and automated reaction or formulation optimization.
AI/ML in chemical process definition from High Throughput Screening.
Self Driving laboratories.
Definition of a chemical mechanistic discrimination methodology using AI/ML in closed loop system.
Next Generation of biocatalysts: enzyme catalyzed CSP2-CSP2 bond forming reactions or cycloadditions.

Drug Product
  Biologics
- Stabilization of unstable/fragile proteins in liquid form at 5C and/or room temperature.
- Very high concentration formulations: focus on protein power suspension-based formulation in non-aqueous vehicle compatible for subcutaneous delivery.
- Device-formulation compatibility and optimization for novel routs of delivery (intrathecal, ocular, etc.)
- Cryopreservation, cold denaturation, and freeze-thaw optimization of DS/DP (ultracold handling and shipping).
  Synthetics
Continuous Process for Drug Product manufacturing to reduce time to market & development cycle costs & ensure sustainable Eco-Design.
Development of Next generation of Process Analytical Tools (PAT) to support better quality in batch and/or continuous manufacturing.
In-vitro Predictive tool considering permeability.
Enabling technologies for BCS3/BCS4 compounds & macromolecules.

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