**RFAs on AI**

1. **Notice of Special Interest (NOSI): Advanced Computational Approaches to Elucidate Disease Pathology and Identify Novel Therapeutics for Addiction** – NIDA: NOT-DA-21-004

<https://grants.nih.gov/grants/guide/notice-files/NOT-DA-21-004.html>

(A NOSI is an announcement published by the NIH that describes a specific topic that an NIH institute or center is interested in supporting, such as a specific area of research. The NOSI directs applicants to one or more active funding announcements to which they can submit applications on the NOSI topic).

Supports applications that will develop or use advanced computational approaches to describe complex drug-disease relationships that will rapidly advance the development of newtreatments for substance use disorder drug discovery and improve health care. The sponsor has a particular interest in applications that include approaches in **artificial intelligence, including machine learning** and deep learning.

Application Deadlines: Several through 07-Jan-2025

Submit applications for this initiative using one of the following funding opportunity announcements

* **PA-20-185**- NIH Research Project Grant (Parent R01 Clinical Trial Not Allowed) Foreign Institutions - <https://grants.nih.gov/grants/guide/pa-files/PA-20-185.html>
* PA-20-184 - NIH Research Project Grant (Parent R01 Basic Experimental Studies with Humans Required) - <https://grants.nih.gov/grants/guide/pa-files/PA-20-184.html>
* PA-20-183 - NIH Research Project Grant (Parent R01 Clinical Trial Required) - <https://grants.nih.gov/grants/guide/pa-files/PA-20-183.html>

Non-domestic (non-U.S.) Entities (Foreign Institutions) are eligible to apply.

Non-domestic (non-U.S.) components of U.S. Organizations are eligible to apply.

Foreign components, as defined in the NIH Grants Policy Statement, are allowed.

1. **Notice of Special Interest (NOSI): Targeting Epigenetic Regulators for Treating Addiction and Substance Use Disorders** – NIDA - NOT-DA-24-004 (RO1s, R21s, RO3)

<https://grants.nih.gov/grants/guide/notice-files/NOT-DA-24-004.html>

**Application Deadlines**: Several until January 07, 2026

This program supports basic preclinical research aimed at identifying and targeting specific enzymes and pathways that play a key role in epigenetic changes induced by addictive drugs. The goal is to develop pharmacological tools and therapeutic interventions for the treatment of substance use disorders and addiction. One of the research areas of interest in this context includes the use of **AI and machine learning** approaches to aid epigenetic target discovery and identify drugs that can be repurposed.

1. **Notice of Special Interest (NOSI): High Priority Areas in Genetics, Epigenetics, and Developmental Neuroscience Branch in the Division of Neuroscience and Behavior** - NOT-DA-23-004

<https://grants.nih.gov/grants/guide/notice-files/NOT-DA-23-004.html>

**Application Deadlines**: Several through September 8, 2025.

Supports research on the genetics, epigenetics, and developmental mechanisms that underlie addiction and substance use disorders (SUD). Areas of interest include omics, **machine learning, and AI for precision medicine** to diagnose and treat opioid use disorders.

1. **Notice of Special Interest (NOSI): Chemoproteomic Approaches for Discovery of Targets and Therapeutics to Treat Substance Use Disorders** - NOT-DA-24-005

<https://grants.nih.gov/grants/guide/notice-files/NOT-DA-24-005.html>

**Application Deadlines:** Several through January 8, 2026

Supports basic research on the application of chemoproteomic approaches for the discovery of targets, and for development of drugs to treat addiction and substance use disorders. Research areas of interest include the use of virtual screening, **artificial intelligence, machine learning** and computational approaches to aid in covalent ligand discovery and lead optimization

1. **Notice of Special Interest (NOSI): Integrative Omics Analysis of NHLBI TOPMed Data (Parent R01 Clinical Trial Not Allowed)** - National Heart, Lung, and Blood Institute - NOT-HL-23-067

<https://grants.nih.gov/grants/guide/notice-files/NOT-HL-23-067.html>

**Application Deadlines**: Several through May 7, 2026

This announcement states that our understanding of the molecular mechanisms underlying many of the HLBS diseases has remained elusive, and in most cases the impact of genetic variation on the severity of disease and treatment outcomes remains unknown. Therefore, the institute has created the Trans-omics for Precision Medicine (TOPMed) program, which aims to utilize genomics data to characterize a variety of HLBS diseases. The goal is to uncover biological function and disease pathobiology through the power of **AI and machine learning**.