2025: ALS Finding a Cure Request for Proposals

Advancing ALS Discovery through Artificial Intelligence and Natural Language Processing

Overview:

ALS Finding a Cure® is pleased to announce a Request for Proposals (RFP) to support innovative research projects leveraging Artificial Intelligence (AI) and Natural Language Processing (NLP) to advance ALS discovery. This funding opportunity seeks to catalyze transformative research that integrates AI-driven methodologies to improve diagnosis, biomarker identification, disease progression modeling, and therapeutic target discovery in ALS.

Background:

ALS is a devastating neurodegenerative disease with no cure and limited therapeutic options. AI and NLP offer the potential to revolutionize ALS research by enabling the extraction of meaningful insights from complex datasets, including electronic health records (EHRs), published medical literature, clinical trial data, omics datasets, and real-world patient-reported data. Through this RFP, we aim to support high-impact projects that will enhance our understanding of ALS and accelerate novel therapeutic strategies.

Examples of large data sources include but are not limited to:
Answer ALS, ALS Compute, UK Bio Bank. ProACT, NeuroBank, Project MINE

Scope of the RFP:

We invite applications proposing AI and/or NLP-based approaches to address critical challenges in ALS research. Areas of interest include, but are not limited to:

- **Drug Discovery and Repurposing:** Machine learning-based identification of potential ALS drug targets or repurposed therapies using AI-driven drug screening techniques.
- **Biomarker Discovery and Validation:** Integration of AI/NLP with multi-omics, imaging, and patient-reported outcomes to identify and validate ALS biomarkers.
- **AI-Driven Early Diagnosis:** Use of AI and NLP for automated extraction of early clinical features from EHRs, speech and language analysis, or fluid biomarker or imaging data to improve early detection of ALS.
- **Pathomechanistic Knowledge Graphs:** Integration of NLP tools with the published medical literature for discovery of previously underappreciated mechanistic targets.
- **Disease Progression Modeling:** AI-based analysis of longitudinal clinical and /or biomarker data to enhance prediction models for disease progression and stratification of patients.
- **Optimizing Clinical Trials:** AI-powered patient stratification, automated NLP-based extraction of clinical endpoints from records, virtual comparison groups and trial recruitment optimization.

  Data Subtypes: Use of AI technology to separate ALS from Controls and to find ALS subtypes in the Answer ALS data set by combining clinical, biomarker, genetic and motor

neuron omics data.

Eligibility Criteria:

- Open to researchers at academic, medical, and research institutions worldwide.
- Multidisciplinary and collaborative proposals integrating AI/NLP expertise with ALS clinical or biological research are encouraged.
- Prior AI/NLP experience is not required, but partnerships with computational experts are recommended.

  Pharmaceutical & Clinical Collaboration: Synergistic collaboration between industry and institutions with data-driven models encouraged

Funding and Award Information:

- **Grant Duration:** Up to 2 years
- **Funding Amount:** Up to $400,000 USD total (inclusive of both direct and indirect costs)
- **Number of Awards:** 3 awarded teams
- **Indirect Costs:** Maximum of 15%

Application Timeline:

- **Initial Letter of Interest (LOI) Submission Deadline:** Friday May 23, 2025
- **Notification of LOI Submission:** July 2025
- **Full Proposals Due:** Wednesday August 8, 2025
- **Project Start Date:** Wednesday October 1, 2025

Review Criteria:

Proposals will be evaluated based on:

1. **Scientific Merit and Innovation:** Potential of AI/NLP methodologies to transform ALS research.
2. **Feasibility and Approach:** Strength of study design, methodology, and data integration strategy.
3. **Investigative Team:** Expertise and collaborative potential of the research team.

4. **Translational Potential:** Likelihood of findings contributing to improved ALS diagnostics, treatments, or patient outcomes.

How to Apply:

Application Process

This will be a two-step process. Applicants will first submit a formal Letter of Interest. Selected applicants will then be asked to submit a full proposal if chosen.

1. First Step – Letter of Intent:

    Letter of Intent should be max 2 pages in length and include the following:

    - Proposal Title
    - Team's highlighted experience
    - Brief overview of project
    - Expected Outcomes

2. Second Step – Expanded Application

- If Letter of Interest is accepted, you will be asked to provide a cover letter addressed to ALS Finding a Cure and the Leandro P. Rizzuto Foundation including:
    - Proposal Title
    - Total costs (15% overhead cap)
    - Number of milestones and related costs (to equal amount above)
    - List of all investigators and institutions
    - Name and contact information for person(s) responsible for contracts
    - Address for mailing of payments
- Provide a study plan including:
    - A brief abstract suitable for media release to the lay public if the application is successful
    - Project Plan, Background, and Timeline (max. 5 pages) including:
    - Study background and rationale/significance
    - Study objectives/specific aims

- Supporting/preliminary data;
- Experimental design/research plan;
- Source of data and confirmation of access;
- Detailed itemized budget and budget justification
- Description of study milestones, including the costs associated and timeline of specific deliverables
- Any research funding from other funding sources that relates to the proposed work

- Signed and dated investigator CVs
- Financial Disclosure Form: *use either NIH form https://ethics.od.nih.gov/forms450), or institutional form.*

Submit LOI to: https://app.box.com/f/33b7d67838bb4bc987eb5e65686411ea

Please submit questions to info@alsfac.org

ALS Finding a Cure® is committed to supporting cutting-edge research that will drive meaningful advancements in ALS discovery through AI and NLP.