RFA-DA-20-025
STEP UP FOR SUBSTANCE USE DISORDERS (SUD): A DRUG TARGET INITIATIVE FOR SCIENTISTS ENGAGED IN FUNDAMENTAL RESEARCH (U18 - CLINICAL TRIAL NOT ALLOWED)

WEBINAR FOR APPLICANTS
ELENA KOUSTOVA, PHD, MBA

DATE: DECEMBER 12, 2019
CONTACT: RAM ARUDCHANDRAN, PH.D., TEL: 301-827-6889
EMAIL: RAMACHANDRAN.ARUDCHANDRAN@NIH.GOV
Part I (Elena Koustova)
  - Outline the NIH grant processes
  - Explain the FOA goals
  - Provide tips for successful submission

Part II (Ram Arudchandran)
  - For new and foreign applicants, provide detailed explanations about the application process

National Institute on Drug Abuse (NIDA) is the lead federal agency supporting research on drug use and its consequences. …To advance science on the causes and consequences of drug use and addiction.
• Targeted Funding Opportunity
Announcements (RFA DA20-025)
  ➢ $ Set aside ($10 million for fiscal year 2020)
  ➢ peer review at NIDA
• Intent to fund up to 50 awards
• Budget limited to $150,000 direct cost per year
• One year project period
Solicitation to Award Process

- Targeted Funding Opportunity Announcements (RFA DA20-025)
  - In-house review
  - $ Set aside
- Intends to fund up to 50 awards
- Budget limited to $150,000 direct cost per year
- One year project period

1) Registrations:
   - Dun and Bradstreet Universal Numbering System (DUNS)
   - NATO Commercial and government entity (NCAGE) code for foreign applicants
   - System for Award Management (SAM)
   - NIH's Electronic Research Administration System (eRA)
   - Grants.gov (Register with Grants.gov)
   - Small Business Administration Company Registry (SBA) for small businesses
   - Employer Identification Number (EIN)

2) Follow the Research (R) Instructions in the SF424 (R&R) Application Guide

3) Apply through RFA-DA-20-025
Solicitation to Award Process

1) Registrations:
   - Dun and Bradstreet Universal Numbering System (DUNS)
   - NATO Commercial and government entity (NCAGE) code for foreign applicants
   - System for Award Management (SAM)
   - NIH's Electronic Research Administration System (eRA)
   - Grants.gov (Register with Grants.gov)
   - Small Business Administration Company Registry (SBA) for small businesses
   - Employer Identification Number (EIN) for small businesses

2) Follow the Research (R) Instructions in the SF424 (R&R) Application Guide

3) Apply through RFA-DA-20-025

1. Significance
2. Investigators
3. Innovation
4. Approach
5. Environment

<table>
<thead>
<tr>
<th>IMPACT</th>
<th>PRIORITY SCORE</th>
<th>DESCRIPTOR</th>
</tr>
</thead>
<tbody>
<tr>
<td>HIGH</td>
<td>1</td>
<td>Exceptional</td>
</tr>
<tr>
<td></td>
<td>2</td>
<td>Outstanding</td>
</tr>
<tr>
<td></td>
<td>3</td>
<td>Excellent</td>
</tr>
<tr>
<td></td>
<td>4</td>
<td>Very Good</td>
</tr>
<tr>
<td>MODERATE</td>
<td>5</td>
<td>Good</td>
</tr>
<tr>
<td></td>
<td>6</td>
<td>Satisfactory</td>
</tr>
<tr>
<td></td>
<td>7</td>
<td>Fair</td>
</tr>
<tr>
<td>LOW</td>
<td>8</td>
<td>Marginal</td>
</tr>
<tr>
<td></td>
<td>9</td>
<td>Poor</td>
</tr>
</tbody>
</table>

- Targeted Funding Opportunity Announcements (RFA DA20-025)
  - In-house review
  - $ Set aside
- Intends to fund up to 50 awards
- Budget limited to $150,000 direct cost per year
- One year project period
Solicitation to Award Process

1) Registrations:
- Dun and Bradstreet Universal Numbering System (DUNS)
- NATO Commercial and government entity (NCAGE) code for foreign applicants
- System for Award Management (SAM)
- NIH's Electronic Research Administration System (eRA)
- Grants.gov (Register with Grants.gov)
- Small Business Administration Company Registry (SBA) for small businesses
- Employer Identification Number (EIN) for small businesses

2) Follow the Research (R) Instructions in the SF424 (R&R) Application Guide

3) Apply through RFA-DA-20-025

1. Significance
2. Investigators
3. Innovation
4. Approach
5. Environment

**IMPACT** | **PRIORITY SCORE** | **DESCRIPTION**
--- | --- | ---
**HIGH** | 1 | Exceptional
2 | Outstanding
3 | Excellent
4 | Very Good
5 | Good
6 | Satisfactory
7 | Fair
8 | Marginal
9 | Poor

- Activity code U18 - cooperative agreement
- Interactions between participating PI, institutions, and the sponsoring NIH Institute
- Cooperative Agreement Terms and Conditions of Award, including conflict resolution
- Making conclusions which are generalizable to others – all results will be reported
- Project Development Team (PDT) comprising of Program Official (PO), Science Officer (SO), the PD/PI and appropriate NIH expert consultants.
KEY DATES

- Letter of Intent Due Date(s): January 13, 2020 *(for instruction, see Section IV.2 of RFA)*

- Application Due Date(s) February 13, 2020
  - No late applications will be accepted for this Funding Opportunity Announcement.
  - All applications are due by 5:00 PM local time of applicant organization.
  - Applicants are encouraged to apply early to allow adequate time to make any corrections to errors found in the application during the submission process by the due date.

- Scientific Merit Review: May/June 2020
- Advisory Council Review: August 2020
- Earliest Start Date: September 2020
- Expiration Date: February 14, 2020

FOA GOALS

- Allow scientists doing fundamental research to contribute to drug development and still remain basic scientists:
  - Provide access to specialized expertise and train 50 PIs in rapid experimentation for maximum impact
    - Some will return to (hopefully, improved) basic science work
    - Some will establish collaborations and move into translational space (patent, license, DTMC, BPN and SBIR, or pivot)
  - Allow young investigators to join NIH-funded force

- Align the outputs of NIDA-funded basic research with requirements of privately-financed biomedical product development
  - Implement a stepladder approach for target validation/invalidation to allow the project to proceed or fail fast

- Validate/de-validate 50 targets for SUD
  - Disclose both negative and positive results in NIH Reporter
  - Publish RFA findings summary
The proposed studies could include, but not limited to, the following:

- Validation of targets for SUD treatment;
- Experiments to assure data robustness (e.g., reproducing the key (including published) in vitro and in vivo finding in at least 2 duplicate studies using same material, doses, readouts);
- Determination of biological criteria for hit designation;
- Determination of approach for hit-to-lead discovery;
- Developing the target-specific screening paradigms and decision trees;
- Development and validation of in vitro and in vivo assays;
- General mechanism of action (MOA) and selectivity testing;
- Composing drug product concepts (e.g., Target Product Profile (TPP));
- Compound screening (including FDA-approved drugs for other indications, drugs approved outside of US, etc.) to yield hits and leads;
- Business case preparation work;
- Experiments to strengthen the intellectual property (IP) position.

Monoclonal antibodies, recombinant proteins, nucleus acid-based therapeutics and viral vectors and small molecules

No diagnostics or devices, no new animal models
Part 1. Overview Information
Part 2. Full Text of the Announcement
Section I. Funding Opportunity Description
Section II. Award Information
Section III. Eligibility Information
Section IV. Application and Submission Information
Section V. Application Review Information
Section VI. Award Administration Information
Section VII. Agency Contacts
Section VIII. Other Information

HOW YOUR APPLICATION WILL BE EVALUATED?

…It is critical that applicants follow the Research (R) Instructions in the SF424 (R&R) Application Guide. Conformance to all requirements (both in the Application Guide and the FOA) is required and strictly enforced…

FOA Section V. Application Review Information

Resources:

1) https://www.youtube.com/watch?v=C5_mio9U0oY&t=

2) https://grants.nih.gov/grants/how-to-apply-application-guide/forms-e/research-forms-e.pdf : RESEARCH INSTRUCTIONS FOR NIH; SF424 (R&R) APPLICATION PACKAGES (160 pages, use Ctrl F)

3) https://www.niaid.nih.gov/grants-contracts/sample-applications#r01: R01 Sample Applications and Summary Statements from NIAID

1. Section V. Application Review Information

2.1. Criteria (example from RFA)

**Significance:** How significant an advantage does the proposed drug target or drug candidate offer over other treatments currently under development for SUDs? How strong are the data supporting the choice of drug target or drug candidate for the SUD indication? Are the proposed drug target or the drug candidates sufficiently active in assays that are relevant to the SUD indication?

---

**Innovation**

**Significance**

**Approach**

**Investigator(s)**
Clinical Impact in treating SUDs:

1. Briefly describe the current state of knowledge of the etiology, clinical characteristics, and current and projected prevalence of the particular SUD;

2. Briefly discuss available treatments, including all treatment modalities and their limitations;

3. Discuss how the proposed project relates to therapeutic development efforts underway in academia and industry.

Biological Rationale for Target Selection:

7. Target Development Level

Target development levels

$T_{\text{clin}}$ (clinical):
drug targets linked to at least one approved drug (API) by mechanism of action (MoA)

$T_{\text{chem}}$ (chemistry):
lack MoA-based links to approved drugs but are known to bind to small molecules with high potency

$T_{\text{bio}}$ (biology):
not MoA-related drug targets, have a confirmed Mendelian disease phenotype, have Gene Ontology (GO)12 leaf term annotations based on experimental evidence

$T_{\text{dark}}$ (dark genome):
the remaining proteins that have been manually curated at the primary sequence level in UniProt15 yet do not meet any of the criteria for Tclin, Tchem or Tbio
* Unexplored therapeutic opportunities in the human genome
# Target Selection Rationale

<table>
<thead>
<tr>
<th>Headings:</th>
<th>What to write:</th>
</tr>
</thead>
<tbody>
<tr>
<td>Intended biological target/pathway</td>
<td>Describe the target and whether it should be blocked or activated. Describe the cellular/physiological process being modulated</td>
</tr>
<tr>
<td>Target expression in relevant human cells/tissues</td>
<td>Describe target expression in terms of tissue and cell diversity as well as techniques used to measure expression. Describe expression in both disease-affected and normal conditions</td>
</tr>
<tr>
<td>Evidence of disease-target association based on clinical observations</td>
<td>Provide the evidence that links this target to the SUD indication. Mention the genetic linkage to SUD, with the special emphasis on equivalent modification of protein levels in response to disease status and outcome, if applicable</td>
</tr>
<tr>
<td>Relevant in vitro models</td>
<td>Describe what can be modeled in vitro and in which cellular system. If the target can be assayed in a relevant cell-based system, describe the robustness of this assay. Discuss access to the primary human material to investigate the target biology (expression/function).</td>
</tr>
</tbody>
</table>
# MUST INCLUDE SECTION TITLED TARGET SELECTION RATIONALE

<table>
<thead>
<tr>
<th>Headings:</th>
<th>What to write:</th>
</tr>
</thead>
<tbody>
<tr>
<td>Relevant in vivo models</td>
<td>Describe the in vivo system. If target validation is based on knockdown/deletion studies, describe the appropriate controls and discuss if those studies are complemented by the small molecule or antibody studies demonstrating the same phenotype. Discuss if the in vivo model is relevant to SUD, and how well it models or predicts human condition.</td>
</tr>
<tr>
<td>Target commercial viability</td>
<td>Present information about any existing target modulators used clinically, available commercially or identified in literature</td>
</tr>
<tr>
<td>Target Development Level</td>
<td>Use the Target Development Level (TDL) classification scheme which categorizes proteins into four groups with respect to the depth of investigation from a clinical chemical and biological standpoint (<a href="https://ncats.nih.gov/pubs/features/idg-proteins">https://ncats.nih.gov/pubs/features/idg-proteins</a>)</td>
</tr>
</tbody>
</table>
Submitting The Application

Required Application Instructions

It is critical that applicants follow the Research (R) Instructions in the SF424 (R Guide for Grants and Contracts). Conformance to all requirements (both in the application instructions in the Application Guide as well as any program-specific Application Guide, follow the program-specific instructions. Applications that do

There are several options available to submit your application through Grants.gov options to access the application forms for this opportunity.

1. Use the NIH ASSIST system to prepare, submit and track your application.

   Apply Online Using ASSIST

2. Use an institutional system-to-system (S2S) solution to prepare and submit your application and institutional officials regarding availability.

3. Use Grants.gov Workspace to prepare and submit your application and

Table of Contents

Part 1. Overview Information
Part 2. Full Text of the Announcement

If you have questions about grant submission or having difficulties, please contact the NIH eRA Commons Service Desk at:
Toll-free: 1-866-504-9552
Phone: 301-402-7469
TTY: 301-451-5939
Email: commons@od.nih.gov
REGISTRATIONS AND APPLICATION SUBMISSION INFORMATION FOR NEW AND INTERNATIONAL APPLICANTS
Your organization must be registered in multiple systems to submit a grant application to NIH.

<table>
<thead>
<tr>
<th>System Name</th>
<th>Description</th>
</tr>
</thead>
<tbody>
<tr>
<td>Dun &amp; Bradstreet Universal (DUNS)</td>
<td>Provides unique organization identifier</td>
</tr>
<tr>
<td>System for Award Management (SAM)</td>
<td>Needed to do business with US government</td>
</tr>
<tr>
<td>eRA Commons</td>
<td>Required to do business with NIH</td>
</tr>
<tr>
<td>Grants.gov</td>
<td>Required to submit grant applications</td>
</tr>
<tr>
<td>Small Business Administration (SBA)</td>
<td>Required for small business applications</td>
</tr>
</tbody>
</table>

If your organization isn’t registered, get started now! Start early – can take 6 weeks!

## THE REGISTRATION PROCESS PRIOR TO APPLICATION SUBMISSION

<table>
<thead>
<tr>
<th>Registration Process</th>
<th>US Institutions</th>
<th>US Small Businesses</th>
<th>International Institutions</th>
</tr>
</thead>
<tbody>
<tr>
<td>Dun &amp; Bradstreet Universal Numbering System (DUNS) #</td>
<td>✓ 1</td>
<td>✓ 1</td>
<td>✓ 2</td>
</tr>
<tr>
<td>System for Award Management (SAM) #</td>
<td>✓ 2</td>
<td>✓ 2</td>
<td>✓ 3</td>
</tr>
<tr>
<td><a href="https://www.sam.gov/SAM/">https://www.sam.gov/SAM/</a></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>eRA Commons *</td>
<td>✓ 3</td>
<td>✓ 3</td>
<td>✓ 4</td>
</tr>
<tr>
<td><a href="https://public.era.nih.gov/commons/">https://public.era.nih.gov/commons/</a></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Grants.gov*</td>
<td>✓ 4</td>
<td>✓ 4</td>
<td>✓ 5</td>
</tr>
<tr>
<td><a href="https://www.grants.gov/">https://www.grants.gov/</a></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Small Business Administration (SBA) #</td>
<td>N/A</td>
<td>✓</td>
<td>N/A</td>
</tr>
<tr>
<td><a href="https://www.sbir.gov/registration">https://www.sbir.gov/registration</a></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>NATO Commercial and Government Entity (NCAGE) #</td>
<td>N/A</td>
<td>N/A</td>
<td>✓ 1</td>
</tr>
<tr>
<td><a href="https://eportal.nspa.nato.int/AC135Public/default.aspx">https://eportal.nspa.nato.int/AC135Public/default.aspx</a></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Employer Identification Number (EIN) #</td>
<td>✓</td>
<td>✓</td>
<td>N/A</td>
</tr>
</tbody>
</table>

- International institutions must have NCAGE number to get the DUNS number
- For SAM, eRA commons and Grants.gov registrations DUNS registration is required
- Organizations with an address containing APO, FPO, or AE do not need an NCAGE code
- A few countries may have trouble accessing the SAM website. If so, call 334-206-7828

✓ - Required, N/A – Not Applicable, I - Order of operations *, - Both Organization and PI/PD # - Organization only
MULTI SUBMISSION OPTIONS ARE SUPPORTED BY NIH

NIH's web-based service for the preparation, submission and tracking of grant applications

A shared, online environment managed by Grants.gov

Institution’s own system to prepare and submit application

The on-line portal used by all federal grant making agencies and their applicants

ELECTRONIC SUBMISSION PROCESS OF APPLICATIONS THROUGH GRANTS.GOV

- Principal Investigators (PI/PD) prepare application
- Authorized institutional official (AOR) submits application to Grants.gov
- Grants.gov and eRA Commons electronically validate forms and attachments
  - Applications with “errors” are rejected
  - Submit corrected application by the receipt date
- You may view “assembled” application in eRA Commons
  - You will see what the reviewers will see
  - Call eRA Help Desk if there are assembly problems

Available NIH Online Resources to help in the application process
- NIH Grants and Funding
  [https://grants.nih.gov/grants/oer.htm](https://grants.nih.gov/grants/oer.htm)
- How to Apply – Application Guide
- Preparing Your Application Using ASSIST
FORMS COMMONS TO MOST APPLICATIONS

<table>
<thead>
<tr>
<th>SF424 (R&amp;R)</th>
</tr>
</thead>
<tbody>
<tr>
<td>PHS 398 Cover Page Supplement</td>
</tr>
<tr>
<td>R&amp;R Other Project Information</td>
</tr>
<tr>
<td>Project/Performance Site Location(s)</td>
</tr>
<tr>
<td>R&amp;R Senior/Key Person Profile (Expanded)</td>
</tr>
<tr>
<td>SBIR/STTR Information</td>
</tr>
<tr>
<td>PHS Human Subjects and Clinical Trials Information</td>
</tr>
<tr>
<td>PHS Assignment Request Form</td>
</tr>
</tbody>
</table>

**Budget Forms**
- PHS Modular Budget
- R&R Budget
- R&R Subaward Budget Attachment(s) Form
- PHS 398 Training Budget
- Training Subaward Budget Attachment Form
- PHS Additional Indirect Costs
- Construction Budget

**Research Plan and Equivalent Forms**
- PHS 398 Research Plan
- PHS 398 Career Development Award Supplemental Form
- PHS 398 Research Training Program Plan
- PHS Fellowship Supplemental Form

COMPLETING APPLICATION FORMS

ANNOTATED FORM SETS ARE AVAILABLE AT: HTTPS://GRANTS.NIH.GOV/GRANTS/ELECTRONICRECEIPT/FILES/ANNOTATED_FORMS_GENERAL_FORMS-E.PDF

AND PROVIDE GUIDANCE IN COMPLETING ALL REQUIRED FORMS
TIPS FOR INTERNATIONAL APPLICANTS TO COMPLETE THE FORMS

- **SF424 R&R COVER FORM – ITEM 6, EMPLOYER IDENTIFICATION NUMBER (EIN): USE 44-4444444 IF YOU DON’T HAVE AN EIN.**

- **ITEM 13, CONGRESSIONAL DISTRICT: ENTER 00-000**

[https://grants.nih.gov/grants/electronicreceipt/files/annotated_forms_general_forms-e.pdf](https://grants.nih.gov/grants/electronicreceipt/files/annotated_forms_general_forms-e.pdf)
TIPS FOR INTERNATIONAL APPLICANTS TO COMPLETE THE FORMS

- R&R Budget form – Use the ‘detailed’ (non-modular) budget form and request budgets in U.S. dollars.
- Foreign institutions may request funds for limited Facilities & Administrative (F&A) costs (8 percent of modified total direct costs less equipment) to support the costs of compliance with NIH requirements.
- R&R Other Project Information form – Complete section 6 covering activities outside the U.S and add an attachment titled “Foreign Justification” under item 12, Other Attachment.
- PHS 398 Research Plan form – Provide the names of the countries where select agent research will be performed in the Select Agent Research attachment.
- R&R Senior/Key Person Profile form – Include the PD/PI eRA Commons username in the “Credential, e.g. agency login” field.
- Project/Performance Site Location form – Enter 00-0000 for Project/Performance Site Congressional District.

HELPFUL RESOURCES

How To Apply – Application Guide

eRA Commons Service Desk
Help with: eRA Commons registration, ASSIST, addressing errors/warnings, and post submission functionality
Web: http://grants.nih.gov/support/
Phone: 1-866-504-9552
International: 301-402-7469
Hours: Monday – Friday, 7 a.m. to 8 p.m. ET

Grants Info
Help with: NIH funding opportunity, application guidelines and grant-related resources
Phone: 301-710-0267
Email: GrantsInfo@nih.gov

Grants.gov Contact Center
Help with: Grants.gov registration and submission issues
Phone: 1-800-518-4726
International: 606-545-5035
Email: support@grants.gov

Dun & Bradstreet (DUNS)
Phone: 1-866-705-5711
Online DUNS # request: http://fedgov.dnb.com/webform
Email: govt@dnb.com (U.S.)
Email: SAMhelp@dnb.com (non-U.S.)

System for Award Management
Phone: 1-866-606-8220
International: 334-206-7828
Service Desk: www.fsd.gov
Hours: Monday – Friday, 8 a.m. to 8 p.m. ET
Complete all registrations before the due date.

Submit your application early (days, not minutes) to allow time for correcting any errors found during the period of application viewing prior to the due date.

NIH’s late policy does not allow corrections after the due date.

Error-free applications must be accepted by Grants.gov with a stamp on or before 5.00 PM (local time of the submitting organization) on the application due date.