भारतीय आयुर्विज्ञान अनुसंधान परिषद
स्वास्थ्य अनुसंधान विभाग, स्वास्थ्य और परिवार
कल्याण मंत्रालय, भारत सरकार

Indian Council of Medical Research
Department of Health Research, Ministry of Health
and Family Welfare, Government of India

Dated: 05.01.2022

Call for Ad-hoc Research Proposals
"Reproducible AI in Medicine and Health"

Background

Artificial Intelligence (AI) has tremendous potential to transform healthcare. A variety of AI tools are being developed to supplement healthcare professionals and researchers. It is envisaged that AI tools will improve patient outcomes in particular by enabling systems that improve diagnostic accuracy, advance drug development, provide more sophisticated patient monitoring, and tailor care to the individual's needs. As a result, AI for health has been recognized as one of the core areas by researchers as well as the governments.

The fundamentals of transparency and reproducibility when applying AI methods in medicine is of utmost importance considering the implications of the AI tool on patient outcomes. Taking this forward, the ICMR-Artificial Intelligence Cell seeks full proposals which have significant potential to provide reproducible public health solutions in the field of diagnostics, therapeutics, epidemiology and clinical care.

Who can apply?

The project proposal can be submitted for financial support through ONLINE MODE ONLY by scientists/professionals who have a regular employment in medical colleges/ Research Institutes/Universities/recognized Research & Development laboratories/ Government and semi-government organizations and NGOs/Industry/Innovators (documentary evidence of their recognition including valid DSIR/SIRO certificate would be required with the application).Each proposal should have investigators from the field of medicine and AI. Researchers working in the industry are not eligible to apply alone but can apply with academic partners.

Scope

Research Proposals are invited under the following thematic areas:

- Diagnostics
- Preventive
- Therapeutic
- Screening
- Epidemiology
- Clinical care

The proposals may focus on development of AI tools that include Machine learning (ML), natural language processing (NLP), speech recognition, computer vision and/or automated reasoning techniques or clinical validation of the AI technology. The solution should be reproducible, scalable and implementable during the lifetime of the project.

General Terms and Conditions for the Grant

- Duration of the projects will be maximum for **two years**, extendable for up to three years.
- Multidisciplinary collaborations with expertise from both AI and healthcare is mandatory.
- The outcomes of the project should have translational potential and focus on providing scalable and implementable public health solutions using AI.
- International collaborations are not allowed under this call.
- Anonymised data and code sharing as per ICMR rules.

Selection criteria

Proposals will be reviewed based on the following criteria:

- Scientific merit of the project.
- Novelty or innovativeness of the proposed project.
- Translational potential in terms of reproducibility, implementation and scalability.
- Organization and Investigator capabilities.
- Interdisciplinary collaborations.

Submission guidelines:

1. Last date for submission of detailed proposal is **22 February 2022, 5:00 PM**

2. Format of submitting full proposals is mentioned in **Annexure I**.

3. Please follow the following steps to submit detailed proposal:
Open the ICMR Electronics Project Management System (e-PMS) portal https://epms.icmr.org.in.

   - Step 1: PI Registration/Login
   - Step 2: Verify Email Id and Complete/Update PI Profile
   - Step 3: Apply for Grant through submission of Ad-hoc proposal

4. Click on "LOGIN and select "Register a new membership" for new registration OR else if registered enter details to login into the application at e-PMS portal.

5. After registration in the portal, login in the portal. Verify your registered email and complete the PI profile. PI profile includes Personal detail such as Salute, Name, DOB as per 10th certificate, Details of 10th (Board name, roll number, Year of passing), Attachment (10th certificate/mark sheet), Gender (Male/Female), Category (GEN, OBC, SC, ST), State, District, Institute Name (if name doesn't exist in the drop down list then there is an option to add the new institute also), Designation, Nature of Employment, Department, Broad Area of Research, Subject Area.

6. After completing mandatory section of PI Profile, click on **"Submit New Proposal"** under "Proposal Submission" menu. New screen will display. Select **"ICMR Ad-hoc Project Program"** from drop down list to submit new proposal. Under the Broad Area select **"ICMR AI Cell", under advertisement select "Reproducible AI in Medicine and Health"** , Select Disciple any one of thematic mentioned in scope section.

7. The user manual of e-PMS (Guidelines-> e-PMS menu) https://epms.icmr.org.in/user-manual and ICMR Ad-hoc Project Program guideline (Guidelines-> Ad-hoc Program menu) are available at https://epms.icmr.org.in/adhoc. Before proceed to submission the proposal, it is suggested to read user manual and guidelines; and make ready all relevant

information, documents and research plan.

8. There is no separate budget head for the consumables. It will be required to added under budget head contingency.

9. Registration in e-PMS portal and filling the Personal, Education and Experience information is mandatory for Co-PI also.

10. As per Guidelines for Extramural Research Programme of ICMR. (Letter No.16/107/2008-(3) Admn.11 Dated: 01.01.2018) Scientists/ Professionals who have a regular employment are eligible to apply for research grant in Adhoc project program. The contractual, adhoc, project staff etc. are not eligible to apply for research grant in Adhoc project program. Therefore, all PIs are advised to ensure the nature of employment of PI/Co-PI before process to submission or addition as PI/Co-PI.

You may contact the following official if you have any queries:

Program related query	e-PMS related query
Dr. M. Vishnu Vardhana Rao Scientist G & Head ICMR- Artificial Intelligence Cell & Director ICMR-NIMS Indian Council of Medical Research. New Delhi – 110029 Email: head-aicell@icmr.gov.in	**Dr. Lokesh Sharma** Scientist E, Division of Biomedical Informatics Indian Council of Medical Research New Delhi – 110029 Email: po.epms@icmr.gov.in

Annexure I

FORMAT FOR SUBMISSION OF FULL PROPOSAL

1. **Title:**
2. **Contact details of Coordinator/PI/Co-PIs** (Name, designation, address, email, mobile number).
3. **Summary (up to 250 words):** A structured summary should contain the following subheadings: Background, Novelty, Objectives, Methods, and Expected outcome.
4. **Background (up to 500 words):** State the background information to adequately present the problem, mention how the research question addresses the critical barrier(s) in scientific knowledge, technical capability, and/or programmatic/clinical/lab practice and its relevance to local, national and international context.
5. **Literature review (up to 1000 words):** Review to be written cohesively to build justification for the research question to be addressed with reference of key publications in the field. Reference up to 30 in Vancouver style may be provided at the end of literature review. (References will not be included in the word count).
6. **Novelty/Innovation (up to 250 words):** Describe how the proposal challenges and seeks to shift the current research/knowledge/clinical practice paradigms etc. by utilizing novel theoretical concepts, approaches or methodologies, instrumentation, or interventions etc. Mention if there is a refinement, improvement, or new application of theoretical concepts, approaches or methodologies, instrumentation, or interventions in the proposed study.
7. **Study Objectives:** Define the objectives clearly and in measurable terms; mention as primary and secondary objectives if necessary.
8. **Relevant AI expertise available**: mention Name, Position and Expertise.
9. **Infrastructure available** (Specific major equipment and facilities available with reference to this proposal):
10. **Brief description of the previous work in this area.**

11. **Methodology and Technical Work Plan.**

12. **Data-** Brief description of data/information (structured or semi structured/unstructured) that will be utilised. Type of data (e.g. images, time series, laboratory tests, "omics", text, electronic health records, etc. or combinations thereof. Size of the data (file size, number of samples). Structure of the data (database type, file format and content etc). Description of how the data can be loaded (special software required, data loader/importer functions available for common programming languages). If the proposal seeks to generate new data, then sample size and collaborator details to be mentioned.

13. **Ethics Review:** Address review requirements including ethics review /approvals as applicable. Details of obtaining informed consent and its documentation to data acquisition, processing and sharing should be described along with risks and benefits to the participants.

14. **Project Implementation Plan:** Detailed technical (or general) problem solving approach, including 3-5 key project milestones (including data and/or code release plan) and expected completion date.

15. **Budget:** Should be as per ICMR guidelines available on the website. Justification for staff along with their roles and responsibilities in the project to be provided.

16. **Expected Outcomes:** Clear measurable deliverables - Immediate and Long term.