

Special Notice (SN) ARPA-H-SN-24-105

Proposers’ Day Announcement for Advanced Research Projects Agency for Health (ARPA-H)/Health Science Futures (HSF) Office

Opportunity: Lymphatic Imaging, Genomic, and pHenotyping Technologies - LIGHT

I. KEY INFORMATION

Table 1. Proposers’ Day Key Information	
Proposers’ Day	May 14, 2024 from 9:00 AM to 4:00 PM EDT
Location	Philadelphia (Hybrid)
Website for registration	Proposers' Day Registration
Registration opens	April 11 th , 2024, at 10:00 AM EDT
Registration closes	May 7 th , 2024, at 12:00 PM EDT or when capacity is reached, whichever comes first
Technical Point of Contact	Kimberley Steele, MD, PhD, Program Manager, ARPA-H / HSF Office
Program email	LIGHT@ARPA-H.gov
Program Solicitation	ARPA-H-SOL-24-102 (Anticipated by end of April 2024)
Optional proposer deliverables, details below	One (1) physical poster (to fit within a space measuring 3.75 feet wide by 3.75 feet high - landscape layout preferred) One (1) PDF page “teaming profile” (proposer’s capabilities, composition, research areas of interest, etc.)

II. INTRODUCTION

This SN is intended to alert the scientific community to a newly approved ARPA-H Program and notify potential proposers of an associated Proposers’ Day (PD). Under the cognizance of HSF, ARPA-H intends to release an Innovative Solutions Opening (ISO) for the LIGHT Program by the end of April (ARPA-H-SOL-24-102).

Potential proposers are encouraged to attend the optional Proposers’ Day. While not mandatory, ARPA-H is hosting the LIGHT PD to achieve the following objectives:

- Provide information about the Program to potential proposers, including details about the overall Program goals, and forthcoming* Innovative Solutions Opening (ISO).
- Share the intended scope, timeline, and scale of LIGHT and how proposers, in collaboration with the ARPA-H team and resources, can accomplish the collective mission of accelerating equitable healthcare outcomes for all Americans.

- Provide a venue to foster potential collaborations and teaming opportunities.

ARPA-H will collect participant questions throughout the event and publish answers in a publicly available Frequently Asked Questions (FAQ) site.

Attendance at this event is **not** a requirement for submission of Solutions in response to the ISO. However, the event has been designed to maximize benefits to potential proposers, including the teaming and collaboration opportunities available to participants.

Information relayed during the PD will be made available on the HSF Office section of the ARPA-H Opportunities page: [ARPA-H LIGHT](#) as well as SAM.gov.

Advance Registration is required. Registration requests will only be accepted from the potential proposer community as participation is not intended for patients, patient advocates, media or a general interest audience.

*ARPA-H anticipates posting the ISO in April to SAM.gov.

III. LIGHT – PROGRAM INFORMATION

While full Programmatic details will be provided in the ISO, the following is a brief description of the LIGHT Program.

LIGHT aims to develop technologies for the imaging, diagnosis and analysis of the lymphatic system. These technologies include novel diagnostic approaches that will be utilized to gain critical information on the role the lymphatic system plays in health as well as its impacts when dysfunctional. LIGHT aims to improve the lives of tens of millions of Americans by creating agile tools that are scalable, accessible, accurate and clinically useful to detect lymphatic structure and function. Multiple diagnostic technologies will enable targeted interventions that result in better patient outcomes and reduced treatment costs, and will advance our understanding of lymphatic dysfunction, a key factor in the pathophysiology of many important diseases. Signs and symptoms of lymphatic dysfunction do not manifest until the disease has progressed, and current assessment tools do not adequately appraise lymphatic anatomy nor measure lymphatic function.

Today, patients with lymphatic disease may remain misdiagnosed or undiagnosed for years; some never get a diagnosis.

In the future, with a comprehensive set of tools, the journey to diagnose lymphatic dysfunction will be measured in minutes.

Technical Approach

LIGHT will develop a diagnostic toolkit to assess lymphatic structure and function, and requests that potential performers consider biomarkers, imaging, and genetics in the approach to ensure the final technology includes an imaging modality plus biomarkers and/or genomic integration. Initially performers should consider primary lymphatic diseases as the targeted disease state; however, consideration of other chronic conditions associated with lymphatic dysfunction is encouraged. To accomplish these goals LIGHT is structured into three technical areas (TAs) and three overarching “phase specific requirements” spanning over three phases.

Technical Area 1 (TA1): Diagnosis & Monitoring – *through biomarker discovery.*

Focusing on the identification or development of specific biomarkers indicative of normal and pathological lymphatic function. Approaches may include evaluation of novel biospecimens using traditional methodologies and implementation of innovative high throughput approaches. Biomarkers may consist of cells, proteins, peptides, metabolites, and nucleic acids as well as physiologic measurements such as bioimpedance.

TA1 will enable rapid and reliable diagnosis and accurate monitoring of LD using highly specific and sensitive biomarkers.

Technical Area 2 (TA2): Imaging Technologies - *through: A. Novel tracer/contrast + imaging modalities, B. Combined imaging modalities, and C. Non-invasive imaging modalities.*

Advancing clinical care for lymphatic diseases is dependent on imaging systems capable of visualizing and measuring the lymphatic system reliably and accessibly. Performers are encouraged to choose from three potential approaches but may suggest other topics. The three core potential approaches are A) Imaging tracer/contrast agent development and delivery, B) Combination of multiple imaging modalities, and C) Advancement of non-invasive imaging technology. Technologies must significantly improve the current state of the art of lymphatic imaging in at least two of six key categories: 1) Spatial resolution, 2) Temporal resolution, 3) Depth of imaging, 4) Field of view, 5) Total scan time, or 6) Affordability.

TA2 will develop novel imaging technologies to assess whole-body lymphatic structure and function qualitatively and quantitatively at a cost and user-friendliness that will encourage widespread adoption.

Technical Area 3 (TA3) – Prevention, Prediction, and Diagnostic Confirmation: *through genetics, epigenetics, and models of lymphatic dysfunction.*

The genetic and epigenetic variants of lymphatic disease and dysfunction have yet to be fully explored and are pivotal to early prediction and care for LD. Performers must discover novel disease-causing genomic variants and develop accompanying models to enable prediction, prognosis, and risk assessment for personalized patient care. TA3 has four broad

objectives: 1) establish and/or screen large scale genotyping datasets and tissue repositories, 2) apply cutting edge approaches in discovering genetic or epigenetic variants to lymphatic disease and dysfunction, 3) validate genomic targets with novel models of lymphatic dysfunction and disease, and 4) apply radiogenomic or similar methodologies to predict variant expression via imaging phenotype.

TA3 will identify genetic and epigenetic variants causing lymphatic dysfunction, allowing in combination with biomarkers and imaging for early and definitive diagnosis, prevention, prediction and refinement of prognosis and therapy.

Program Structure

LIGHT is structured as a 5-year effort consisting of three (3) phases, Phase I (24 months), Phase II (24 months) and Phase III (12 months). LIGHT Phases I-III include realistic and measurable goals for performers to ensure the success of the program as well as regular checkpoints throughout the entire period of performance. Attendees of the Proposer's Day should consider the timeline, program structure and metrics information in the forthcoming ISO within their posters and teaming profiles.

IV: LIGHT – PROPOSERS' DAY INFORMATION

Proposer's Day Structure

LIGHT – *Let's Discuss All Things Lymphatics.*

Attend sessions to learn about the funding opportunity. Learn why, what, when and how to apply. Learn from our ARPA-H team experts on contracting, regulatory expectations, and transition efforts once the technology is successful. Teaming opportunities will include optional lightning talks, a poster session, and speed networking.

Proposers' Day Participation

The overarching goal of LIGHT's Proposer's Day is to provide an overview of the lymphatic ecosystem that exists today and to present the ARPA-H vision for the LIGHT Program, thereby providing specific opportunities for prospective proposers to identify team members in an organic and naturally collaborative way.

Posters

An optional poster session is designed to facilitate collaboration and team formation. Participants who are interested in presenting a poster are invited to request space for one poster per team that summarizes the research interests and/or technical capabilities related to the diagnostic technology the team plans to propose. A detailed style guide and further directions pertaining to the poster will be provided upon your registration acceptance, but posters should measure no larger than 3.75 ft x 3.75 ft, and landscape layout is preferred.

At PD, posters will be grouped by technical area: 1. Diagnosis & Monitoring: through biomarker discovery. 2. Imaging Technologies and 3. Prevention, Prediction & Diagnostic

confirmation: through genetics, epigenetics, and models of lymphatic dysfunction. Presenters will have one hour to stand by the poster, present their work and answer questions from interested parties. Posters will be accepted on a first-come, first-served basis considering relevance and diversity of solutions, until the maximum possible number of submissions given space constraints is reached. Interested attendees must identify their intention to present a poster during registration. Poster presentations are restricted to those participating in-person.

Speed Networking

Optional speed networking will be organized to allow further discussion between and among potential collaborators. Participants will be given 5 minutes to discuss their research and capabilities with another randomized attendee.

Lightning Talks

Lightning Talks will be accepted on a first come, first served basis and will require pre-registration on the LIGHT proposer's day registration site. Participants will be granted five (5) minutes to present one (1) slide on their research as it relates to the intersection of their expertise and LIGHT's technical areas. Both virtual and in-person participants may apply to give a lightning talk.

Teaming Profiles

Interested parties are also encouraged to submit a 'teaming profile' via the Microsoft Forms link here and below: [LIGHT Teaming Profile Form](#). The teaming profile will describe the technical competencies, team capabilities, team composition, research areas of interest, unique facilities and other capabilities, as they relate to the Program, and desired technical/other competencies sought from other potential team partners. The profile will include, at a minimum:

- Contact information, to include name, organization, email, telephone number, mailing address, and website.
- Brief description of the proposer's technical competencies and relevant facilities.
- Desired technical competencies and facilities from other potential team members, if applicable.

Specific content, communications, networking, and team formation are the sole responsibility of participants. ARPA-H does not endorse any participating organization or exercise any responsibility for improper dissemination of the team profiles.

Registration Information

Participants must register in advance through the registration website. Due to in-person and webinar capacity limitations, in-person registration is limited. To facilitate easier access to all, Proposers' Day will be a hybrid event. Adherence to attendance guidelines will be managed by LIGHT Program staff. There is no registration fee for the LIGHT Proposers'

Day. **There will be no same-day registration.** An online registration form and various other meeting details can be found at the registration website, [Proposers' Day Registration](#).

Upon entry to the physical meeting, all attendees will be required to present valid, Government issued photo identification. Individuals who are unable to register because the deadline has passed, or capacity has been reached for the PD will be added to a waitlist. After registration closes if space opens due to cancellations, space may be filled on a first-come, first-served basis from the waitlist.

All inquiries should reference “LIGHT Proposers’ Day (ARPA-H-SN-24-105)” in the subject line of the email. Prior to submitting an e-mail inquiry, please check the [General Program FAQs](#) to see if your question is answered there.

VIRTUAL PARTICIPATION INFORMATION

The link to the webinar registration confirmation will be released to potential proposers’ whose registration request is accepted.

V. DISCLAIMER

This SN is issued solely for information and potential new program planning purposes; the SN does not constitute a formal solicitation for solutions. Participation is voluntary and is not required to respond to subsequent ISOs (if any) or research solicitations (if any) on this topic. ARPA-H will not provide reimbursement for costs incurred in responding to this SN. Further, this announcement is not a request for solutions; any so sent will not be reviewed. Respondents are advised ARPA-H is under no obligation to acknowledge receipt of the information received or provide feedback to respondents with respect to any information submitted under this SN.