American Heart Association.

Request for Proposal to Test the Impact of Social Determinants on Health Risks and Outcomes

Contents

Key Dates

RFA Posted:	November, 2021
Letter of Intent Pre-proposal (Required via email) Deadline:	December 8, 2021
American Heart Association Pre-proposal (LOI) review and invitations:	December, 2022
Application Deadline (for invited participants only):	February, 2022
American Heart Association Peer Review:	March, 2022
Notification of Awards:	March 15, 2022
Award Start Date:	April 1, 2022

Overview

Social determinants of health (SDOH) are the *structural determinants and conditions in which people are born, grow, live, work, and age that affect health, functioning, and quality of life*[1]. There are typically five key domains of SDOH, including economic stability, neighborhood and built environment, education, social and community context, and health and health care. Each of these domains may have relevance at the individual, the neighborhood, and environmental level.

It is widely recognized that health disparities are largely influenced by social determinants. Given that social factors represent the soil upon which health impact is experienced, data about social determinants of health have been generally assessed and addressed in isolation of one another, leading to widely disparate forms of data and data collection strategies. The absence of a standard approach to collecting these data is a potential barrier to our ability to compare, extrapolate, and apply evidence-based findings to larger populations[2,3].

The establishment of a common language and standard set of metrics in this field is critical to furthering the ability to combine data from multiple studies, measure impact, and improve our understanding of social and environmental variables that impact quality-of-life related risks and outcomes.

This Request for Proposal announcement invites researchers to design and implement an approach for measuring the impact of social, environmental, and structural determinants of health across the United States with the aim of establishing standards for measuring SDOH and evaluating their impact on risk of cardiovascular disease and quality-of-life outcomes.

What **we're looking for**

As SDOH impact communities across medical and non-medical disciplines, our goal is to bring together mission-aligned expert groups to establish standards to harmonize the collection, interpretation, validation, and access to data about SDOH and their relationship to quality-of-life and incidence of cardiovascular outcomes in the United States.

Consistent data across fields of expertise and community-based initiatives is critical for effective assessment of the impact on health and quality of life of structural determinants and conditions in which people are born, grow, live, work, and age.

The American Heart Association's suite of resources and investments, including the Precision Medicine Platform, Social Impact Fund, and Research Goes Red, strongly position researchers and stakeholders to advance the evidence needed to improve the understanding of and strategies needed to address impact of SDOH on cardiovascular risk, quality of life, and other health outcomes.

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[1] Commission on Social Determinants of Health (2008). Closing the gap in a generation: health equity through action on the social determinants of health. Final Report of the Commission on Social Determinants of Health. Geneva, World Health Organization. Available at: https://www.who.int/social_determinants/final_report/csdh_finalreport_2008.pdf

[2] Office of Disease Prevention and Health Promotion. Healthy People 2020. Social Determinants of Health. Available from: https://www.healthypeople.gov/2020/topics-objectives/topic/social-determinants-of-health

[3] Havranek, E. P., Mujahid, M. S., Barr, D. A., Blair, I. V., Cohen, M. S., Cruz-Flores, S., Davey-Smith, G., Dennison-Himmelfarb, C. R., Lauer, M. S., Lockwood, D. W., Rosal, M., Yancy, C. W., & American Heart Association Council on Quality of Care and Outcomes Research, Council on Epidemiology and Prevention, Council on Cardiovascular and Stroke Nursing, Council on Lifestyle and Cardiometabolic Health, and Stroke Council (2015). Social Determinants of Risk and Outcomes for Cardiovascular Disease: A Scientific Statement From the American Heart Association. Circulation, 132(9), 873–898. https://doi.org/10.1161/CIR.0000000000000228

At the American Heart Association, equity and science are at the center of everything we do. This grant will help researchers across disciplines come together to help create better understandings of how SDOH can be analyzed with the goal of addressing unmet health needs and disparities in health and economic relationships.

Who we're looking for

This request for proposal aims to bring together experts from across the spectrum of qualitative and quantitative sciences, health impact assessment and policy, social environmental disciplines, data science, quality of life, community-based participatory research, and public health.

- Applicants *will be required* to leverage the established cloud-based infrastructure of the American Heart Association's Precision Medicine Platform to measure, harmonize, and standardize SDOH information.
- Applicants *will be required* to incorporate data from a portfolio of over 80 community projects funded by the American Heart Association that comprise the American Heart Association Social Impact Fund to minimize the social and economic barriers to health equity. These projects are driven by local entrepreneurs and organizations focused on addressing areas such as housing, access to healthy foods, water, employment, and mental health programs.
- Applications may incorporate Research Goes Red, a joint initiative between the American Heart Association and Verily, into the research and analysis plan. Research Goes Red is a network of more than 11,000 women in the community, scientists, and clinicians focused on addressing women's cardiovascular health.

In other words, we are *not* looking for experts to create a technical data platform from the ground-up. Rather, we intend researchers to leverage workspaces equipped with analysis tools and computational power on the existing Precision Medicine Platform for data analysis, and to harness data from the American Heart Association's Social Impact Fund.

Before you apply

- For teams that are invited to submit a full application, the project lead must be an American Heart Association professional member.
    - Join or renew when preparing an application in Proposal Central, online or by phone at 301-223-2307 or 800-787-8984.
    - Membership/Partnership processing takes 3 to 5 days; do not wait until the application deadline to renew or join.

- Projects can include collaborators from across sectors and countries; however, the project proposal must be submitted by a project lead representing an academic or non-profit organization based in the United States.

- Any member of the team can serve as the project lead. Projects may have co-investigators from other collaborating organizations. We strongly recommend that organizations identify only one project lead per project.

- Preference will be given to applicant organizations that are institutes of higher education, public entities, or nonprofits that are tax exempt under Section 501(c)(3) of the Internal Revenue Code and are not private foundations or Type III supporting organizations. Other types of nonprofit and for-profit organizations are also eligible to apply. The American Heart Association may require additional documentation.

- Preference will be given to projects received from organizations with expertise in the following areas: qualitative and quantitative sciences, health impact assessment and policy, social environmental disciplines, technology, and experts in quality of life and public health.

- Awardees will be selected based on health impact, scientific merit, feasibility, and scalability. Projects will be considered that:
    - Are aligned with the American Heart Association's mission and goals
    - Provide a clear plan of action for leveraging:
        - The American Heart Association Precision Medicine Platform (required)
        - The American Heart Association's Social Impact Fund (required)
        - Research Goes Red (not necessary but available)

- Organizations that are currently funded through other American Heart Association funding mechanisms can apply.

- Organizations can submit multiple proposals.

How to apply: pre-proposal

1. Pre-proposal Letters of Intent are due Dec 8, 2021
2. Email in PDF format to pmp@heart.org
3. Your letter of intent should include the following information about the proposed project:
    - Project title
    - Names, titles, affiliations, relevant expertise, any collaborating organizations
    - Contact information for organizational representative with signing authority
    - Percent effort for all key project personnel, including project lead
    - Approximate budget per year of the study
    - Data collection and security standards, including any relevant information on Institutional Review Board for Human Subjects research
    - Planned approach and activities to achieve the goals
    - Biosketch of project lead

How to apply: invited proposal

Applications must be submitted using ProposalCENTRAL, the American Heart Association's online submission portal.

An initial review will take place with a diverse, selected section of the peer review committee. Committee members will include data scientists and public health experts. Proposals that receive the highest priority scores will advance to a video interview.

Applicants who are invited to submit a full proposal will be asked to provide information for the below points. See *Details and requirements* for additional guidance.

A plan of action to use the research to establish a common language and standard set of metrics for measuring the impact of various social determinants of health on quality-of-life related risks and outcomes.

A research plan that can be up to 6 pages (12-point font, 1-inch margins on all sides):

1. Operational plan with links to the data analysis plan (see below)
2. Rationale
3. Expertise (names, titles, affiliations, relevant expertise)
4. Methods/results section:
    - A clear description of the tools and types of analysis grantees will perform in the workspace
    - An explanation of how the Precision Medicine Platform will be leveraged to share data and code within the team and to accelerate collaboration across research communities
    - A plan for interoperability of data with national or international standards
5. Expected outcomes and deliverables, a timeline, and project success milestones
6. A data analysis plan that includes a link to the Jupyter notebook created in a workspace on the Precision Medicine Platform. The submitted notebook should be in HTML format. In Jupyter, follow these steps:
    a. In the File Menu, selecting *Download as > HTML (.html)*. The HTML file will download to a temporary downloads folder.
    b. Re-upload the HTML file to the workspace by clicking the *upload* icon in JupyterLab or clicking the *Upload* button on the Jupyter Home tab.
    c. In the workspace, save the notebook in the /mnt/workspace/My_Notebooks directory this will sync the notebook with the workspace portal.
    d. The notebook will be listed on the workspace portal page. To the right of the notebook, click the box with the arrow that shows "Share for Grant Application" when you hover over it.
    e. Sharing the notebook creates a static link that will be used by the peer review team.
7. Discussion of how the proposal is aligned with and will leverage:
    - The American Heart Association's mission and goals (required)
    - The American Heart Association's Precision Medicine Platform (required)
    - The American Heart Association's Social Impact Fund (required)
    - Research Goes Red (only if used)
8. Works Cited (pages for Works Cited are not included in 6-page limitation)
9. Biosketches of all key personnel (not included in 6-page limitation)
10. Project technical summary to briefly describe the proposed work (not included in 6-page limitation)
11. Non-scientist summary to describe your work to people without science or medical backgrounds. Address the following: (not included in 6-page limitation)
    - Problem being addressed
    - Specific questions and how you will attempt to answer them
    - Potential impact of this work
12. Budget information including:
    - Salary and fringe benefits of the project lead, collaborating investigators, and other participating research staff or faculty.
    - Project-related expenses, such as salaries of technical personnel essential to the conduct of the project, travel, and publication costs in accordance with institutional and American Heart Association policies. Please note that the American Heart Association does not fund the costs of program implementation or operations beyond what is established in an approved budget.

- Each project is required to budget $5,000 annually to subsidize the cost of technical assistance, licenses and fees associated with the Precision Medicine Platform.
- Consultation services are available from American Heart Association experts in data science, computation, and metrics and evaluation to improve the rigor and impact of the proposed research study.
- Maximum of 10% institutional indirect costs may be claimed on the award.
- *The awardee will be responsible for overseeing the total budget for the grant. If awarded, the project lead and the institution assume an obligation to expend grant funds for the research purposes set forth in the application and in accordance with all regulations and policies governing the grant programs of the American Heart Association*.

Details and requirements

Duration

Up to 2 years from date of funding, contingent upon milestones and timelines being met.

Number of Awards

The American Heart Association anticipates awarding two grants for this RFP.
The American Heart Association reserves the right to determine the final number of awardees.

Award Amount

- $225,000/year ($450,000 cash total)
- An additional Amazon Web Services (AWS) service credit for use of the American Heart Association Precision Medicine Platform may be provided for computational time, use of AWS tools and infrastructure, and storage. Credit amount will be determined based on estimated need over duration of the grant.

Precision Medicine Platform, research environment, trial workspace

Projects must be conducted via the American Heart Association's Precision Medicine Platform, powered by Amazon Web Services.

Each team may be eligible to receive Amazon Web Services computational credits to cover the cost of cloud computing for a secure and private workspace on the American Heart Association's Precision Medicine Platform to enable investigators in each team to collaborate and analyze data securely.

Data analysis is enabled in secure workspaces by a web interface that allows researchers to code in various languages, including R and Python, and to use statistical software including but not limited to SAS and R studio. The most up-to-date machine learning and artificial intelligence software available from Amazon Web Services is also included. Researchers are also able to install their own tools.

The American Heart Association asks that the grantees also accelerate collaboration through the sharing of data and code as well as the coordination for interoperability of data to facilitate findability and sustainability. The American Heart Association fully supports the FAIR (**F**indable, **A**ccessible, **I**nteroperable and **R**eusable) guiding principles of data stewardship.

The Platform is HIPAA and FedRAMP compliant. Learn more about the Platform's Security Information.

To learn more about the Precision Medicine Platform:

- Overview
- Full list of available analytical tools
- Videos:
    - Learn more about the platform – video 1
    - Explore the capabilities of the platform – video 2

1. Register here for a 60-day complimentary trial workspace to use during the application period
2. Once registered, login and go to the Search page, click Request Workspace.

3. Within the form, please include the following text for your Researcher Purpose:
   Trial Workspace for Impact of Social Determinants on Health Risks and Outcomes.

Note: While the request form mentions billing, there is no charge for use of the Precision Medicine Platform during the 60-day trial period.

Interim assessment

Awardees must report progress on a minimum annual basis. Progress reports may take the form of a required written report in addition to video conferencing, phone calls, and/or face-to-face visits. Reporting will be focused on achievement of stated milestones as indicated in the project timeline. The American Heart Association reserves the right to request additional updates, site visits, or reporting.

Public access

The American Heart Association's public access policy requires that all journal articles resulting from American Heart Association funding be made freely available in PubMed Central and attributed to a specific American Heart Association award within 12 months of publication. It is the responsibility of the awardee to ensure journal articles are deposited into PubMed Central

Open data

Any factual data that is needed for independent verification of research results must be made freely and publicly available in a repository approved by the American Heart Association within 12 months of the end of the funding period (and any no-cost extension).

For more information on the above policies, see the American Heart Association's Open Science Policy webpage.

Additional requirements

- The projects submitted can have no scientific or budgetary overlap with other work funded by the American Heart Association or any other source.
- Any inventions, intellectual property, and patents resulting from this funding are governed by the American Heart Association's Patent, Intellectual Property and Technology Transfer Policy.
- The applicant/awardee and institution are responsible for compliance with all American Heart Association research award policies and guidelines for the duration of any awards they may receive.
- Visit the Research Programs Awards Policies page for more information on this topic: American Heart Association Policies Governing All Research Awards

For questions and assistance: pmp@heart.org