

California Initiative to
Advance Precision Medicine

Request for Proposals

Addressing Health Impacts of
Adverse Childhood Experiences through a
Collaborative Precision Medicine Approach



Governor's Office of Planning & Research

December 3, 2019

CIAPM Request for Proposals 2019

Addressing Health Impacts of Adverse Childhood Experiences through a Collaborative Precision Medicine Approach

I. Overview

The California Initiative to Advance Precision Medicine (CIAPM) will award \$9 million total across three to five independent research teams (\$1.8 to \$3.0 million per team) over a 3-year project term to address the health impacts of Adverse Childhood Experiences (ACEs) and toxic stress. The field of Precision Medicine continues to emerge as a modern application of scientific data and clinical practice toward the individualization of prevention, diagnosis, measurement, and treatment of disease. This funding opportunity aims to drive innovation in applying a Precision Medicine approach to understanding the biological mechanisms of and improving clinical means of addressing toxic stress from ACEs, particularly as a path toward reducing health disparities.

Research teams must be co-hosted by at least one academic research institution and one nonprofit community/patient organization or county institution that provides support to people with ACEs. Projects must be located in California, and funds may not be used for indirect costs. Additional matching funds and in-kind contributions are highly encouraged and will be considered as part of the selection process. Additional funding may become available for awarded project teams to examine and potentially select and use a common data-sharing platform.

All proposal materials will be accepted electronically by the Governor's Office of Planning and Research (OPR) via the online CIAPM Submission Portal, according to the timeline below. Letters of Intent to Submit a Proposal are not scored during the selection process but must be received by the noted deadline and reflect the general theme of a forthcoming concept proposal.

II. Timeline

Request for Proposals Announced	12/3/2019
Informational Webinar	12/11/2019 at 3:00 PM
Due: Letters of Intent to Submit a Proposal	2/5/2020 by 11:59 PM
Due: Concept Proposals	4/22/2020 by 11:59 PM
Notification of Finalists	5/28/2020
Due: Full Proposals	7/22/2020 by 11:59 PM
Awardees Announced	8/31/2020
Anticipated Project Start	11/1/2020 – 11/30/2020
Duration of Projects	36 months

All times listed are in Pacific Time.

III. Background

Precision Medicine

Precision Medicine holds promise to profoundly transform health, health care, and biomedical research. As envisioned in the National Academy of Sciences (NAS) 2011 report, [“Toward Precision Medicine: Building a Knowledge Network for Biomedical Research and a New Taxonomy of Disease,”](#) the modern approach to health and disease aims to use advanced computing tools to aggregate, integrate, and analyze vast amounts of data from research, clinical, personal, environmental, and population health settings to better understand wellbeing and develop and deliver more precise diagnostics, therapeutics, and preventative measures.

While Precision Medicine approaches will likely bring about powerful insights, creating models of access for all communities will be just as important to address health disparities and positively impact clinical outcomes across socioeconomic groups.

California Initiative to Advance Precision Medicine

CIAPM was established by the State of California pursuant to passage by the Legislature to help coordinate public, private, and nonprofit partners to advance Precision Medicine approaches and foster the creation of new technologies and therapies that can improve the health of diverse populations.¹ The initiative is administered by the Governor’s Office of Planning and Research (OPR) to bring together state Precision Medicine leaders and support research projects that demonstrate the power and promise of Precision Medicine to the people of California.

Research on Adverse Childhood Experiences

This Request for Proposals (RFP) addresses a core priority of California Surgeon General Dr. Nadine Burke Harris by supporting research of toxic stress from ACEs with a Precision Medicine approach, improving targeted prevention, diagnosis, measurement, and treatment throughout the lifespan. Children who experience high levels of stress and/or trauma demonstrate lifelong vulnerabilities to numerous physical and mental disorders, thus far linked to the effects of a disrupted physiological stress response on the neuro-endocrine-immune system and/or genetic regulation.

Recommendations from the 2019 NAS Report, [“Vibrant and Healthy Kids: Aligning Science, Practice, and Policy to Advance Health Equity,”](#) underscore structural and policy barriers to data integration, cross-sector collaboration, and screenings for early detection of trauma and adversity that collectively prevent patients from receiving holistic health care. Improvement in clinical outcomes relies upon, in part, the creation and expansion of referral systems, rapid coordination of cross-sector expertise, and routine training for trauma-informed care and social determinants of health.

At present, limited studies and interventions have been conducted to better comprehend ACEs from a biological and health perspective. This funding opportunity seeks to inspire collaborative research throughout the state into the broad field of ACEs, using Precision Medicine approaches to improve our understanding of, for example, new biomarkers predictive of

¹ AB 1602, Chapter 24, Statutes of 2016, which establishes Article 6. California Initiative to Advance Precision Medicine under Chapter 1.5 of Division 1 of Title 7 of the Government Code

individual risk for future negative health outcomes, individual variation in response to therapeutic approaches, and impacts of toxic stress from ACEs on communities reflective of the diverse California population.

IV. Purpose: Collaborative Demonstration Projects

Both NAS reports emphasize the need for strong partnerships and collaboration to achieve the vision of a healthier and more equitable society. As part of that process, pilot projects should be undertaken at various levels to identify barriers, define effective practices, and achieve some early, albeit modest scale, successes. Therefore, one of OPR's primary approaches is to support collaborative demonstration projects that leverage the state's expansive and diverse patient data, research expertise, and technological capabilities to advance Precision Medicine for ACEs and toxic stress.

For this RFP, up to \$9 million will be provided by the State for three to five proof-of-principle demonstration projects with the aim to address ACEs through collaborations between academic, community, public, nonprofit, and private partners. Additional funds may become available to awarded demonstration projects to examine and potentially select and use a common data-sharing platform.

Projects should be co-led by Principle Investigators (PIs) from at least one public or private academic institution and at least one nonprofit community/patient organization or county institution that provides support for people with ACEs. Successful proposals will also leverage contributions from other nonprofit or for-profit organizations in the community as well as industry partners.

Demonstration projects will be selected through a three-stage process, involving (1) submission of Letters of Intent to Submit a Proposal; (2) submission of Concept Proposals; and (3) submission of Full Proposals, based on selected Concept Proposals, from which the final selection of awards will be made. Once the out-of-state expert Selection Committee delivers its recommendations for awards, OPR will announce and work with awardees to develop concrete metrics and goals to track the progress of the demonstration projects and enter into contracts with OPR.

V. Application Instructions

Application process

All application materials must be submitted electronically by the deadlines listed in Section II.

Stage 1 *Letter of Intent to Submit a Proposal*

Applicants should submit a brief Letter of Intent by **February 5, 2020** via the online CIAPM Submission Portal at opr.ca.gov/ciapm. The webform will require the following information: (i) a tentative title, (ii) Primary Institution, (iii) Lead PI, (iv) other PIs, (v) tentative project description (maximum 5 sentences), and (vi) tentative total budget. Letters of Intent are not scored during the selection process but must be received by the deadline and reflect the general theme of the forthcoming Concept Proposal. An institutional cover letter is not required at this stage.

Applications may be re-opened by the applicant any time before the submission deadline.

Stage 2 *Concept Proposals*

On or before **April 22, 2020**, applicants should submit a three-page Concept Proposal in PDF format. Applicants must upload an additional PDF file with Biographical Sketches (resumes, in the [format of the National Institutes of Health](#), NIH) of PIs and team members. Detailed parameters are presented in the Concept Proposal section, below. All Concept Proposal titles will be made public on the OPR website following the selection process. An institutional cover letter is not required at this stage; however, all PIs must confirm that their institutions/organizations have committed to support the project, if awarded funding.

Stage 3 *Full Proposals*

The out-of-state expert Selection Committee will identify a subset of submitted Concept Proposals by May 28, 2020 to move on to the Full Proposal stage. In parallel, instructions for electronic submission of Full Proposals will be made available. Institutional cover letters will be required. Full Proposals are due **July 22, 2020**.

The Selection Committee will recommend between three and five projects to award, and OPR will announce awardees by August 31, 2020. The three-year projects are anticipated to begin between November 1 and November 30, 2020.

Eligibility

1. Applicant teams must designate a Lead Principal Investigator (Lead PI) from a public or private academic research institution, considered the “Primary Institution.” The Lead PI will serve as the main contact throughout the application process, demonstration project, and post-award evaluation. Up to ten additional PIs may also be designated. At least one PI must represent a nonprofit community/patient organization or county health institution that provides support to people with ACEs. Additional collaborations with other nonprofit and for-profit organizations and industry partners are encouraged.
2. Only one proposal per team will be accepted. An individual may serve as Lead PI for only one application; otherwise, individuals may contribute to multiple proposals.
3. There will not be more than one award per Primary Institution.
4. Demonstration projects must be located in California. Partners may be located outside of California if they provide their own funding.
5. Research teams may only use funds for direct costs. Indirect costs will not be supported.
6. Demonstration projects should aim to validate the utility of Precision Medicine approaches to improve outcomes through better prevention, diagnostics, measurements, and/or treatments for toxic stress from ACEs.

Concept proposals

Each application should address all topics listed below in maximum three pages total in PDF format; minimum Arial 11 font; and minimum 0.5-inch margins. Biosketches (in [NIH format](#)) of all PIs and team members must also be submitted as a single PDF and will not be included in the 3-page limit. Proposal materials will be accepted via the online CIAPM Submission Portal at opr.ca.gov/ciapm.

Impact on health outcomes and health disparities

Describe how the proposed project will improve health outcomes and reduce disparities among populations affected by ACEs. Provide rationale for the project by outlining existing strengths,

resources, and opportunities available (e.g., ability to study biomarkers, collect informative data, or integrate data from various sources; access to existing biobanks, databases, or medical records; an engaged participant community; or established mechanisms for responsible data sharing). Describe why the topic was selected and why the approach is impactful.

Project plan

Describe the components of the proposed project, including specific aims and research strategy.

Data

Each proposal should demonstrate its commitment to the use of robust data. Use of multiple data sets is encouraged (e.g., electronic medical records, mobile health device data, registries, and research databases). Briefly describe the data set(s) you propose to use or create, the rationale for integrating the selected data, and how the data set(s) may contribute to better outcomes by improving preventative, diagnostic, measurement, and/or treatment approaches. Please provide a rationale for use of designated standards that are already recognized, for example, by the American Academy of Pediatrics.

Precision Medicine capabilities

Describe the Precision Medicine capabilities that will be developed as a result of this project, such as infrastructure and tools that will be built, including new consortia, collaborations, personnel competencies, databases, datasets, applications, software, intellectual property, patient cohorts, participant communities and networks, and models for responsible data sharing.

Participant engagement

Describe strategies to engage patients, families, and communities for authentic partnership, such as developing opportunities to build trust, approaches to ensuring consent, or practical principles for data sharing, privacy, and security. For example, projects may integrate a community advisory board, employ patient navigators, host focus groups to better understand patient/community issues, or describe efforts to allow patients access to their medical data and/or opportunities to contribute data from this demonstration project to other research studies.

Impact for patients

To the extent it is applicable to the project, describe opportunities to improve patient outcomes within the 36-month project timeframe—and beyond.

Approaches to improving training and/or education

Describe how the proposal will develop or amplify quality opportunities for trainees and/or students to better apply Precision Medicine approaches to clinical care, for example, by creating or updating a curriculum for a graduate course or occupational certification program, engaging trainees in the implementation of the project, or assessing current training methods in clinical ACEs screenings.

Anticipated challenges and proposed solutions

Describe potential barriers to the project's success, especially those that could delay the launch, progress, or completion (e.g., human subjects, health literacy barriers, or mobile patient populations), and describe potential solutions to these challenges.

Project team

Describe collaborations between at least two California-based institutions/organizations as part of the proposal. Additional partners are highly encouraged. Describe the nature and strength of any existing collaborations. Provide biosketches for each PI and team member. Biosketches will not count toward the 3-page proposal limit.

Budget overview

Briefly outline how project funds (approximately \$1.8 million to \$3 million per project) will be used and how other resources will be leveraged, including total amount of matching funds from partners and third-party entities. Comment on why CIAPM funds are needed as opposed to other funding sources, such as federal or philanthropic grants. Examples of other resources that may be leveraged include the following: experts' time; molecular/genetic characterization; access to computational platforms, including data visualization, innovative databases, data sharing, data privacy and security, or high-performance computing; and mobile platforms to reach patients between medical encounters and/or track their health outcomes.

Note: CIAPM funds are intended to be used exclusively in California. If the project necessitates the use of CIAPM funds outside of California, provide a brief justification and estimate of the funding that would leave the state. The amount of funds that can leave the state will be subject to the final award agreement.

Data-Sharing Work Group

Teams must express a willingness to attend coordination meetings with fellow grantees, share lessons learned, discuss the use of designated data standards, and agree to examine and potentially select and use a common data-sharing platform.

Submission

Concept Proposals must be submitted electronically through the online CIAPM Submission Portal on or before **April 22, 2020** at www.opr.ca.gov/ciapm. Applications may be re-opened and edited by the applicant any time before the submission deadline.

VI. Selection

Selection Committee

A committee will be comprised of out-of-state individuals that includes subject matter experts representing the breadth of stakeholders involved in the overall initiative. Nominations for the Selection Committee will be considered from the Legislature, public, and research communities. Selection Committee members shall be deemed to be free of conflicts of interest in any contract with an applicant and will be screened according to NIH procedures. The names of Selection Committee members will be provided on the OPR website. The Selection Committee will use a process consistent with NIH procedures for reviewing the proposals and making award recommendations. OPR will use a process consistent with NIH practices to ensure proposals are evaluated in a manner that is fair, equitable, timely, and free of bias.

Selection criteria

Section 65057 of the Government Code sets forth the following selection criteria:²

- The potential for tangible benefit to patients within two to five years, including the likelihood that the study will have an immediate impact on patients.
- The potential to reduce health disparities.
- The depth and breadth of data available in the disease focus areas across institutions.
- The prospects for efficient and effective data integration and analysis.
- The expertise of potential team members.
- The resources available for the project outside of the initiative, including the leveraging of non-state funding.
- The clinical and commercial potential of the project.
- The potential to scale and leverage multiple electronic health records systems.
- The potential to develop the use of tools, measurements, and data, including publicly generated and available data.

The Selection Committee will also consider the following additional factors in reviewing the proposals:

- The innovative concepts, approaches, methodologies, instrumentation, or interventions to advance Precision Medicine.
- The feasibility of the project (can the project be achieved within the proposed timeline).
- The quality and extent of patient/participant engagement.
- Approaches to protect privacy and personal health information.
- Methods to increase access and inclusion of populations that experience disparities.
- System interoperability.
- The quality and extent of training and educational contributions to improve the integration of Precision Medicine approaches in clinical settings.
- Sharing data and/or protocols across institutions.
- Where the project is located in California to balance geographic equity of awards and diversity of awarded institutions.
- Diverse expertise and background of team members, including those underrepresented in research, including underrepresented racial and ethnic groups, persons with disabilities, and women.
- Overall impact to advance Precision Medicine.

Results

The Selection Committee will report on the justification for selecting the demonstration projects that are awarded funding and will provide a list of the demonstration projects that were not selected on the OPR website, as required by statute. Therefore, do not include in the project title any proprietary or confidential information or details that could identify the PI and applicant institution, unless there are no reservations against being identified.

² AB 1602, Chapter 24, Statutes of 2016, which establishes Article 6. California Initiative to Advance Precision Medicine under Chapter 1.5 of Division 1 of Title 7 of the Government Code

VII. Terms and Conditions of Funding Awards

Applicants of proposals that are selected will be asked to enter into an agreement with OPR. Terms and conditions will be based on [UTC](#) for UC/CSU/CSU auxiliary institutions. All agreements will include the following terms:

- **Indirect Costs** No indirect costs will be supported.
- **Intellectual Property Agreement** Agree to terms of patent and copyright agreements that balance the State's interests with the needs of the research team.
- **Funds** Funds will be disbursed monthly.
- **Start Date** Initiate work within 30 days of agreement execution.
- **Reporting** Submit biannual progress reports, work with OPR staff throughout the project on milestone and budget development and adjustments, and participate in conference calls and convening activities. Post-award expectations will be specified in award agreements, including a formal evaluation of the outcomes of the demonstration project.
- **Use of Data** Investigators and demonstration teams are expected to share data and research findings consistent with academic and state open-access standards.
- **Protection of Privacy and Health Information** Investigators and demonstration project teams are expected to follow state and federal law to protect privacy, personal health information, and rights of human subjects.

VII. RFP Administration and Contact Information

During the solicitation process, questions may be directed to CIAPM staff:

Julianne McCall, PhD
Governor's Office of Planning & Research
1400 Tenth Street, Sacramento, CA 95814
Telephone: (916) 323 – 9912
Email: ciapm@opr.ca.gov

Applicants may submit written questions via email or mail. All technical questions must be received by April 4, 2020. Non-technical questions (e.g., questions concerning format requirements or submission instructions) may be submitted to CIAPM staff at any time prior to the April 22, 2020 deadline for Concept Proposals. On a weekly basis, or as necessary, CIAPM staff will update a list of Frequently Asked Questions on the website.

Any verbal communication with CIAPM staff concerning this solicitation is not binding on the State and will in no way alter a specification, term, or condition of the solicitation. Therefore, all communication should be directed in writing, as indicated above.

If an ambiguity, conflict, discrepancy, omission, or other error is discovered in the solicitation at any time prior to a deadline, the proposer may notify CIAPM staff in writing and request modification or clarification of the solicitation. OPR, at its discretion, may provide modifications or clarifications either by an addendum to the solicitation or by a written notice to all parties who participate in the solicitation. At its discretion, OPR may re-open the technical question period to provide all applicants the opportunity to seek any further clarification required. Any change would be reflected on the CIAPM website.