California Initiative to Advance Precision Medicine
Demonstration Projects – Request for Proposal

Call for Proposals Announced	April 22, 2015
Concept Proposal Deadline	May 22, 2015
Notification of Finalists	June 1, 2015
Proposal Refinement	June 2015
Full Proposal Deadline	July 15, 2015
Awardees Announced	July 30th
Projects Commence	August 2015
Project Timeline	18 months
Funding	$2.4M total for 2 projects; no indirect costs

I. California Initiative to Advance Precision Medicine:

The University of California will host California's Initiative to Advance Precision Medicine – a collaboration of public and private academic and industry partners that will help to build the infrastructure and assemble the resources necessary to advance precision medicine-oriented data, tools and applications.

$2.4 million is provided by the state for two demonstration projects that leverage the UC's expansive and diverse patient data and research expertise, along with expertise and resources from public and private partners across the state (see Section V Selection Criteria). The demonstration projects will be focused on different disease areas and funding will be allocated based on project needs (not necessarily an even split).

II. Precision Medicine Demonstration Projects:

Precision medicine holds promise to profoundly transform health, healthcare and biomedical research, and California is positioned to lead in advancing the field. Gains are already being made, but efforts across the state are fragmented, failing to achieve the scale and scope needed to test and achieve the impact of a networked knowledgebase.

Precision medicine – as envisioned in the 2011 National Academy of Sciences' report, "Toward Precision Medicine: Building a Knowledge Network for Biomedical Research and a New Taxonomy of Disease"[i] — aims to use advanced computing tools to integrate and analyze the vast amount of basic science data, together with molecular, clinical, environmental and epidemiological data on patients worldwide, so-called "big data." The objective is to better understand diseases, with the goal of developing mechanistic insights into both rare and common illnesses, new diagnostics and therapeutics, and prevention measures. The report committee emphasized that it would take strong partnerships and collaboration to achieve the vision of precision medicine, and that pilot projects should be undertaken at the institutional or regional levels to identify barriers, define effective practices and achieve some early, albeit modest scale, successes.

The CIAPM will bring together precision medicine leaders as well as research projects to demonstrate the power and application of precision medicine, positioning California to lead in promoting this confluence of science, research, and medicine.. UC will assemble expert teams to conduct two proof-

of-principle demonstration projects in disease focus areas where the UCs have particularly deep expertise, and where private and non-profit partners are also ready to contribute assets. The demonstration projects will be developed and selected in a two stage process: 1) submission, review, and initial selection of concept proposals, and 2) active development of the selected concept proposals into full proposals (including the potential for matchmaking with internal and external collaborators) and final selection of the two demonstration projects. UC will provide guidance in developing concrete metrics and goals to track the success of this initiative over a two-year period.

III. Proposal Process:

A. Eligibility

a. Each proposal must identify a host institution who will submit the proposal and administer the grant if awarded.
b. This is a limited submission. Each UC campus may submit up to two proposals as host. Proposals must be submitted electronically by the vice chancellor for research.
c. Proposals must include collaboration across at least two UC campuses, use of patient data from at least two campuses, and collaboration at least one external public or private partner (industry, foundation, non-UC academic institution). Additional collaborators are encouraged.
d. Applicants must be willing to participate in planning and coordination activities, such as workshops and conference calls, and to submit bi-monthly progress reports.

B. Proposal – Concept proposals (maximum two pages; Arial 11 font; 0.5 inch margins) should describe:

a. Disease focus area: Describe the potential for a project to develop and demonstrate the promise of precision medicine in a specific disease area. Provide rationale for the selected disease area by outlining existing strength, resources and opportunities available (e.g., ability to obtain molecular measurements, remotely collect behavioral or other data, subtype the disease, link genomic data to EHR; access to existing biobanks; databases, medical records; an engaged participant community, established mechanisms for responsible data sharing, etc.) –*see also Selection Criteria below.*
b. Impact for patients: Describe the opportunities to improve patient outcomes within the 2 year project timeframe—and beyond.
c. Precision medicine capabilities: Describe the precision medicine capabilities that will be developed as a result of this project (i.e., outline the infrastructure and tools will be built as result of this project including physical capacity, new consortia, collaborations, personnel competencies, databases, software or computational development, startup company opportunities, intellectual property, patient cohorts, participant communities and networks, models for responsible data sharing, etc.)
d. Participant engagement: Describe strategies to engage patients (e.g. opportunities to build trust, approaches ensuring consent, approaches to data sharing, privacy, security, etc.).
e. Anticipated challenges and proposed solutions: Describe potential barriers to the project's success, paying particular attention to barriers that could delay the launch, progress or completion, and provide potential solutions to these challenges.

f. Project Team: Provide a brief description of the host institution PI and team, and the key UC and external collaborators. Describe the nature and strength of any existing external collaborations.

g. Budget, overview: Propose budget of up to $2 million with statement of what you would do with less. Note: no indirect costs will be provided with CIAPM funds. Outline how CIAPM funds will be used and other resources that will be leveraged (*e.g.,* experts' time; biomedical informaticians at each medical center to obtain and structure electronic health data; molecular characterization, including DNA, RNA and genomic sequencing; computational platforms, including genome analysis, data visualization, innovative databases, data sharing, data privacy and security, or high-performance computing; mobile platforms to reach patients between medical encounters, to track their health and outcomes, etc.)

C. Submission - Concept proposals must be submitted by the UC campus' vice chancellor for research, electronically as a PDF to ciapm@ucsf.edu by 5:00pm PT on May 22, 2015.

IV. Selection:

A. **Committee:**

a. A selection committee will be established that includes individuals from both within and outside UC, representing the breadth of stakeholders involved in the overall initiative. The selection committee will select the demonstration projects and approve the project teams and plans.

B. **Criteria:** Selection criteria will include, but not be limited to, the following:

a. potential for tangible benefit to patients within two years, including the likelihood that the study will have an immediate impact on patients;
b. depth and breadth of data available and potentially available in the disease focus area across the UCs and from partnering institutions/organizations (for example, the volume and scope of phenotypic and molecular data available for the patient cohort);
c. prospects for efficient, effective data integration and analysis;
d. expertise of potential team members;
e. resources available for the project outside of CIAPM funds, including the potential for leveraging dollars (internal, extramural, or other external);
f. clinical and commercial potential of the platforms as assessed by outside experts;
g. strength of connections between proposal team collaborators;
h. potential to scale, and to leverage the 13.6 million EHR from across the UC Health centers;
i. attention to particular challenges of interoperability, health disparities, privacy, participant engagement, consent, security and ethical concerns and establish appropriate standards.
j. potential downstream use of tools, measurements, and data, including open public accessibility of generated data and publications

[i] Toward Precision Medicine: Building a Knowledge Network for Biomedical Research and a New Taxonomy of Disease. http://www.nap.edu/catalog/13284/toward-precision-medicine-building-a-knowledge-network-for-biomedical-research