CMLH PROPOSAL TEMPLATE

PROPOSAL DEADLINE: OCTOBER 30, 2017

THE CMLH SEEKS PROPOSALS THAT ARE AS FOCUSED AS POSSIBLE (AN INITIAL AND VALUABLE USE CASE IN HEALTH CARE) THAT SOLVES THE IDENTIFIED PROBLEM WITH NOVEL SOLUTION BASED ON INNOVATIVE TECHNOLOGY. PROPOSED WORK AND TASKS ARE TO BE *COMPLETED WITHIN A YEAR* AND SHOULD BE DESIGNED TO PROVIDE A 'PROOF OF CONCEPT' AT THE END OF THE PERIOD THAT WILL SERVE AS A BASIS FOR FUNDING FURTHER RESEARCH, COMMERCIAL INCUBATION OF THE SOULUTION, OR BOTH. THE CMLH FAVORS PROPOSALS THAT PROPOSE APPLIED AS OPPOSED TO THEORETICAL INQUIRY AND THAT PRESENT A POTENTIAL PATHWAY TO COMMERCIAL APPLICATION.

YOU CAN TYPE OVER THE INSTRUCTIONS IN THE RESPONSE BOXES BELOW, CUT AND PASTE INTO THEM, OR SUBMIT A DOCUMENT THAT FOLLOWS THE FORMAT SHOWN.

Project Title:

Short descriptive title

Research Team:

List PI(s) and all researchers (name, affiliation and email address) and anticipated graduate student (Masters or PhD) involvement (name, degree program, curriculum/department). Include CMU and non-CMU researchers/collaborators.

1. **Executive Summary (please limit to one half page or so):**

An overview of the problem, solution and its enabling technology, research plan and projected impact of the work.

2. Statement of Work: (please limit to four or 5 pages minus diagrams if used)

A. *A description of the unmet need: the problem being solved, why it is important, and its scale: number of individuals affected/size of the market, expenditures incurred, associated trends, etc. It is useful to have an initial, valuable focus for the work even if it is extensible beyond this initial projected application.*

How your solution solves the problem: please describe how the technology will be deployed and by whom to solve the problem.

B. *Research Plan: please walk through the major stages of your planned work. Highlight prior work if any that is being built upon, trials designed to validate the technology, data to be used or to be made available to drive the work.*

A statement of anticipated outcomes of the work (software, algorithms, prototype, etc.) that can be used to drive a decision to fund further research, an effort to incubate the solution for commercial use, or both.

C. *Please describe how the innovation creates value (better outcomes, lower cost/variability, reduction of waste/better resource allocation, et al) and who will use/interact with the system or tools (physicians, patients, etc.)*

Please speak to the economic/clinical incentive to adopt, and if possible to the underlying change in process that it may require for adoption in practice. Generally, excluding regulatory restrictions (patient privacy, etc.), adoption of digital solutions in health care tends to focus on physician decision making processes that may have to evolve or patient behaviors that technology seeks to enhance or modify.

3. Project Budget Information (CMU costs plus subcontracted items)

Please see appendix for an example budget format. You may enter the budget here as line items, or insert a spreadsheet as an image. Please note:

- *Period of Performance = 12 months*
- *Indirect rate: 51.66% MTDC (note that this is a specific rate for CMLH projects funded by UPMC)*
- *Graduate student (Masters or PhD) support: Use standard tuition/stipend rate for your department.*
- *Benefits rate: Please use current non-federal rate of 27.5%*
- *Budget: $200K - $400K for Early Stage Research projects (note: final budget to be agreed with CMLH and UPMC Enterprises)*
- *Travel and Conferences are not eligible expenses unless they are directly contributing to the proposed work.*

4. Additional Information required. Please include in your submission answers to ALL of the following questions. Check all project characteristics that apply and provide information as requested:

Human Subjects/IRB

Will this project be:

☐ Conducted solely at CMU

☐ Conducted at another or additional location. please describe:

[ ]

All research to be carried out by CMU faculty/students

☐ Yes

☐ No. Please identify non-CMU researchers

[ ]

Will this project involve any activities with humans or review of data derived from humans: data that may or may not be personally identifiable?

☐ No

☐ Yes. Please describe:

[ ]

Does the project Include any researcher having interaction or intervention with a living individual?

☐ No

☐ Yes. Please describe:

[ ]

Background Intellectual Property

Does the research build upon any existing IP at either CMU and/or UPMC?

☐ No

☐ Yes. Please identify by disclosure and/or patent/patent application #s:

If you answered yes above, was this background intellectual property developed in collaboration with any other 3rd parties (companies, universities, etc.) or as a part of a consortium?

☐ No

☐ Yes. Please provide details:

Have you used any third-party resources (including funding) in the creation of the background intellectual property (i.e. material or equipment from a company or university under a Material Transfer Agreement (MTA) or other formal or informal agreement)?

☐ No

☐ Yes. Please provide details, including copies of relevant agreements:

Have you used any software, libraries, etc. from other internal (e.g., CMU) sources (example projects or researchers) in the development of the background IP or does the technology otherwise build upon earlier work at CMU?

☐ No

☐ Yes

Have you used any Open Source software in the development of this background intellectual property?

☐ No

☐ Yes. Please provide details including Open Source license used:

Do you know of any other inventions, which are related to this invention?

☐ No

☐ Yes. Please describe:

SUBMIT ALL DOCUMENTS AS PDFS VIA EMAIL TO:

CMLH@CS.CMU.EDU

PLEASE USE "PROPOSAL [YOUR NAME] [SHORT PROJECT TITLE]" AS THE FILE NAME

QUESTIONS AND SUPPORT

FOR QUESTIONS REGARDING THE CMLH, REQUIREMENTS AND/OR PREPARATION OF PROPOSALS PLEASE CONTACT:

JIM CIUCA

DEVELOPMENT OFFICER FOR COMMERCIALIZATION, CMLH

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Appendix: Focus Areas and Basic Budget Format

The Focus Areas present a broad range of opportunities in the digital health space. The chart below presents just of few of the challenges/opportunities for advances in digital health to create substantial advances in health care. A broad variety of technologies and science from across CMU may be brought to bear as key drivers or in combination: machine learning, artificial intelligence, natural language processing, innovative materials/sensing, robotics, design, novel statistical inference, behavioral economics, genomics, human computer interaction, operations management, biomechanics, biology and computation, privacy and security, policy, embedded systems, and more.

Improving Outcomes	Consumer Oriented Healthcare	Infrastructure and Efficiencies
▪ How do we capitalize on the exponential growth of omics data to enable the development of new therapies, enhance diagnosis, and proactively manage disease?	▪ How do we leverage the growing infrastructure of the IoHT (health things) and the IoP (patients) to engage consumers in their wellness and therapy?	▪ How do we capitalize on the shift from health care as a 'product' to healthcare as a service?
▪ How can we utilize new data, structured and unstructured, to create and enhance support tools for clinicians?	▪ How can we make mobile/wearable/em-bedded computing more useful on the 'edge' for consumers, enable integration of this data with clinical practice and other data, and in aggregate form proactively manage population health?	▪ How can we envision and make concrete new models of capital and service design that capture both effectiveness and efficiency?
▪ How do we design tools and systems to enable individualized medicine while managing digital overload?		▪ How do we manage the financial, policy evolution, and societal risk of the evolving healthcare system and its underlying demographic challenges?
▪ How do we build new or enhanced systems to manage and protect EHR, genomic data, et al, as evidence based approaches to care create a demand for health care data liberalization?	▪ How do we enhance and create new value via 'cybertherapy' (telemedicine, monitoring etc.)?	▪ How does the growing inertia of consumer wearables to clinical grade wearables generate data that can be utilized to enhance asset and service level optimization?
▪ How can we develop and marry 'machine insight' into human expert diagnostic and therapy protocols to reduce	▪ How can we use the digital space to create opportunities to enhance interaction and extend clinical impact?	▪ How do we marry new data-driven insights into treatment pathways to eliminate waste,
	▪ How can intelligent systems modify/support	

Example Budget Format/Detail

Description	Expenditure Type	Time Period in Months	Budget
Salaries			
Prinicipal Investigator	Tech/Prof Exempt FT Local	3	3
Co-Principal investigator	Tech/Prof Exempt FT Local	0.5	0.5
Research Associate	Tech/Prof Exempt FT Local	6	$20,000
Total Salaries			$50,422
Fringe Benefits-27.5%	Benefits full time		$13,866
Total Salaries and Benefits			**$64,288**
Student Stipend-Graduate Student	Grad Stipend	12	**$28,200**
Student Tuition-Graduate Student	Grad Tuition	9	**$43,400**
Student Stipend-Graduate Student	Grad Stipend		**$0**
Student Tuition-Graduate Student	Grad Tuition		**$0**
Operating Expenses			
ITS Computing Facility Fees	IC Computing Services		$256
Human Subject Payments	Human Supject Payments		$10,000
Tech Supplies (software/hardware)	IC Technical Svcs & Equipment		$5,000
Consultant -Design/professional services	Consulting Services		$40,000
(additional line)			$0
(additional line)			$0
Total Operating Expenses			**$55,256**
Total Direct Costs			**$191,144**
MTDC Base			$147,744
Indirect Costs-51.66% (rate to be used for CMLH projects)			**$76,325**
Total Project Costs			**$267,469**