Opportunity Details

JUMP ARCHES FALL 2020 RFP CALL

Description
The Jump Applied Research for Community Health through Engineering and Simulation (Jump ARCHES) endowment offers this Request for Proposals to members of the faculty of the University of Illinois at Urbana-Champaign, health care providers of the University of Illinois College of Medicine at Peoria, and/or OSF HealthCare clinicians.

Goals
The goal of this competitive grant is to improve the quality of health care and safety of patients through collaboration between researchers, engineers, clinicians, and social and behavioral scientists. The award is for 1 year of startup/seed money support up to $75,000, and requests for continuing funding will be based upon reported progress. Proposals which identify future or matching funding from federal, state, county, or other governmental or non-governmental relief organizations will be regarded most favorably.

To achieve this goal and promote collaboration between institutions, OSF Innovation in Peoria and the Health Care Engineering Systems Center at the University of Illinois at Urbana-Champaign encourage applicants to inquire if their ideas require facilities or technologies that they cannot access at their home institution. Examples of such facilities and technologies may include simulation areas, robotics technology, 3D printing, or other prototyping and manufacturing needs. View these facilities on the HCESC website, Jump Simulation Center Urbana website, and Jump Trading Simulation & Education Center Peoria website.

Focus Areas
This Request for Proposals concerns six focus areas: digital health, social and behavioral disparities, autism, neurological sciences, COVID-19, and simulation and education. Your application should address one or more of these areas. Phase II applications in any of these areas that have been previously funded by Jump ARCHES are also encouraged.

I. Digital Health: This area concerns designing technologies to improve tele-medicine, data gathering, sensor design, designing assistive technologies, robotics and advancing the use of data science, AI, and machine learning to augment and assist in improving the costs, quality, and patient/provider experience.

II. Social and Behavioral Disparities: This area concerns mitigating the impact of age, location, and social barriers in delivering quality health care to vulnerable populations. Special emphasis will be given to proposals that address racism, social
justice, social and implicit biases, health equity, and access to complement the University of Illinois’ Call to Action initiative from the new Chancellor’s Research Program to Address Racism and Social Injustice.

III. **Autism:** This focus area concerns the diagnosis and treatment of Autism Spectrum Disorders (ASDs) through collaborative efforts with the OSF HealthCare Children’s Hospital of Illinois. Emphasis will be on early diagnosis of ASDs, enhancement of social skills associated with ASDs, support of children and adults with ASDs as they integrate their unique sensorimotor and information processing patterns while navigating everyday life at home, in school, and in the workplace, and exploration of technologies to utilize unique skills of individuals with ASDs.

IV. **Neurological Sciences:** This special focus area addresses technologies to diagnose or monitor treatment of patients. Special solicitations will be offered involving the creation of novel technologies, systems and assistive devices for communication and immobility associated barriers experienced by people with neurological disorders and projects addressing the difficulties of their families and caregivers.

V. **COVID-19:** This area concerns the development of technologies that may address COVID-19, pandemics, or similar health crises. Topics related to diagnostics, sterilization, modeling, artificial intelligence, assistive devices, and surveillance will be of high importance. Social and economic impact on health care post-COVID and effects on children will also be of importance.

VI. **Simulation and Education:** This area concerns using simulation and other virtual or augmented reality technologies to train and evaluate current and future medical professionals. New modalities, AR/VR/MR, design of hardware-based simulators with a focus on Human Factors, Interprofessional Education, etc., will be given preference.
Application

This file should be submitted as a PDF document via email to Antonios Michalos (michalos@illinois.edu) and Seth Stutzman (seth.t.stutzman@jumpsimulation.org) with the subject line, “Jump ARCHES [Last Name of PI].”

PRIMARY INVESTIGATOR:
Example: “Antonios Michalos, M.D., M.S., University of Illinois at Urbana-Champaign, The Grainger College of Engineering, Health Care Engineering Systems Center. 217-244-4563. michalos@illinois.edu.”

Name & Title (ex. Professor, M.D., Ph.D., etc):

Overarching Institution (OSF HealthCare, University of Illinois at Urbana-Champaign, or UICOMP):

College or Department (ex. The Grainger College of Engineering, Pediatrics, etc.):

Unit if applicable (ex. Cancer Center at Illinois, Department of Computer Science, etc.):

Phone Number:

Email:

NON LEAD PIs (LIST ALL):
Proposals must identify two co-investigators: one from The Grainger College of Engineering at the University of Illinois at Urbana-Champaign and one from among the clinicians at OSF HealthCare or University of Illinois College of Medicine at Peoria.

Name & Title (ex. Professor, M.D., Ph.D., etc):

Overarching Institution (OSF HealthCare, University of Illinois at Urbana-Champaign, or UICOMP):

College or Department (ex. The Grainger College of Engineering, Pediatrics, etc.):

Unit if applicable (ex. Cancer Center at Illinois, Department of Computer Science, etc.):

Phone Number:

Email:

TITLE OF PROJECT:
SECTIONS:

A. **Executive Summary** – Please limit to 1 page.
   State the application’s broad, long-term objectives, specific aims, and how the project contributes to the Jump ARCHES goal and focus area(s). Provide a succinct and accurate description of the proposed work. It should be informative to other persons working in the same or related fields and understandable to a scientifically literate reader. Do not list past accomplishments or use first person.

B. **Research Plan** – Please limit to 6 pages total.
   - **Specific Aims:** list specific aims of proposed project as actions to be taken. Bulleted list is acceptable. If sequential, place in sequential order. If non-sequential, place in order of priority.
   - **Research Strategy (Appendix I below):**
     - **Relevance/Significance:** Does this project address an important problem? If aims are achieved, how will scientific knowledge, clinical practice, or society be advanced? What will be the effect of these studies on the concepts, methods, technologies, treatments, or services in this field? Briefly address the societal impact of your research.
     - **Impact/Innovation:** Is the project original and innovative? Does it challenge existing paradigms or practices, or address an innovative hypothesis or barrier to progress? Does it employ or develop novel concepts, approaches, or technologies?
     - **Approach:** Are the conceptual or clinical frameworks, designs, methods, and analyses adequately developed, well-integrated, well-reasoned, and appropriate to the aims of the project? Does the applicant acknowledge potential problem areas and consider alternative tactics?

C. **Special Funding Area***: For proposals requesting consideration under social and behavioral sciences, neurological sciences, or autism research topics (see RFP for more information about these topics), briefly address how your proposal impacts these areas. Without this section, your proposal will be reviewed as a regular ARCHES proposal.

D. **Facilities Required*** (If you require facilities not available in your laboratory or institution please contact us - e.g, use of a simulation center, simulation equipment, 3D printers or VR/AR laboratories).

E. **Bibliography***

F. **Budget and Budget Justification*** - Please download the spreadsheet [here](#).

G. **Biosketches of Lead Investigators*** – Please use NIH/NSF style. View instructions [here](#).
H. Data Management and Request Plan* - Please fill out the form here about data usage and needs in your project. Proposal will undergo additional review by the data committee for compliance and access of data.

I. Only for Phase II Continued Funding Requests*: If you are requesting follow-up phase II funding please address the following:

   a. What specifically was accomplished under the goals in the previous phase? Describe major milestones that were reached.
   b. Describe changes in goals and/or outcome.
   c. List conferences or events where your project has been or will be presented.
   d. List publications and/or technical reports.
   e. Were external funding proposals submitted? If so, what were the results?
   f. Describe technology disclosures and any patent applications filed.
   g. List any other accomplishments not mentioned above.

* Not included in 6-page Research Plan.
Appendix I

Research Strategy – Approach: Recommended Content & Format

I. Introduction/Background Information: State what is currently known in the specific field to ground the reviewer in the subject of your research. Provide the necessary details to understand why you are proposing the work.

II. Problem: Clearly state the gap in knowledge that needs to be addressed. Convey that your project will fill this gap using the funding that you are requesting.

III. Critical Need: Emphasize the significance of the problem you are trying to address and the reason your proposal should be funded. Make it clear that your research proposes the next logical step to advance the field.

IV. Introduce solution(s): Clearly state the solution that fills the gap in knowledge. Convince your reviewers that your solution addresses the knowledge gap and that your team has the expertise to accomplish this solution. Address specific aims in both the short and long term (as applicable).

V. Hypothesis and Proposal Objectives: Your proposal should contain both of these components, depending on the goal. Clearly state your central hypothesis. You want to demonstrate to the reviewers that you have a hypothesis-driven proposal that is testable. Avoid vague hypotheses because it will be unclear to the reviewers what you expect to determine with the proposed research.

VI. Rationale: Explain how you arrived at your central hypothesis (such as using past studies and published literature). Briefly state what your project’s completion would make possible (e.g., new simulators), and tie it to the funding entity’s mission and focus area(s).

VII. Qualifications: Briefly state why your experimental design and your team are the best to accomplish the project goals. Mention factors such as your preliminary data, personnel qualifications, or laboratory equipment.

VIII. Innovation: State what is innovative about your project. What would completion of this proposal bring to the field that is not present currently?

IX. Expected Outcomes: What do you expect to see at the completion of each specific aim? Include this information only if you have not placed it in the Aims section. You may either embed or attach supplemental imaging or other diagrams to support your statements.

X. Timeline: How long do you expect this project and its various components to take? Be precise in the timeline of your research and the completion of milestones by month.

XI. Impact: State how your project would help those who need it. Include a broad impact statement about how your proposal will benefit the people or other subjects that you mentioned in the opening paragraph.