Clinical and Translational Science Institute (CTSI)
Innovative Approaches to Big Data
Pilot Project Funding Available

Release Date: September 19, 2014
REQUIRED Letter of Intent (LOI) Due Date: November 7, 2014 (Link To Form)
Application Due Date: January 12, 2015
Anticipated Award Date: February 2, 2015

I. Introduction.

Big data have already become the driving force behind many of this decade’s scientific and technical breakthroughs, and the use of big data sets will only accelerate as we learn how to better harness their full potential. In health research, big data span from the molecular level to data on populations, including for example genomics/omics/microbiome and imaging data, ambulatory assessment, population health and health finance data, and are typically housed in electronic medical records or data warehouses. There is a great need for Penn State and our potential partners to develop and implement innovative approaches to generating, managing, and analyzing big data sets that ultimately contribute to improved health and healthcare.

The Penn State Clinical and Translational Science Institute (CTSI) invites applications for pilot projects aimed at advancing health research through the use of big data. The CTSI will provide up to $300,000 to support between 5-10 multi-investigator, multi-disciplinary projects that incorporate big data to advance health and healthcare research at all points across the translational spectrum.

Successful applications should clearly describe how the proposed methods to examine big data have the potential to advance research on health and/or healthcare. Given the CTSI’s mission of expediting the translation of research to impacts on human health, applications should articulate the translational potential of the proposed project. Finally, given the enabling capacity of engaged communities for the translation process, applications should specify plans for community connections, with “community” being defined broadly (e.g., patients, health care providers, community organizations, industry, educators, researchers).

We expect that projects will capitalize on Penn State’s breadth of expertise by involving collaborators from multiple disciplines, including some whose prior research lies beyond the current boundaries of health research. New teams of investigators exploring innovative research topics will be given priority. Projects should be completed in 12 months.

II. Eligibility Criteria and Criteria for Review.

The Principal Investigator (PI) must hold a Pennsylvania State University faculty appointment. This includes faculty members at the Penn State Hershey Medical Center and research faculty at University Park. We expect that proposals from multi-disciplinary teams will be most competitive.

In addition, to be eligible, each project must include:

1. A research topic aimed at advancing health and/or healthcare research through the collection, management and/or analysis of big data.
2. A compelling statement of the project’s translational potential.
3. A research plan deemed likely to lead to external funding, including funding track records of research team members and evidence that the proposed topic aligns with the priorities of one or more external funders.

4. A detailed budget with justification. Limited salary support is available for faculty, and no more than $10,000 (direct salary) annually may be allocated to faculty salaries for a given project.

5. A detailed project timeline of 12 months. (Note that for funded projects, progress reports are required at regular intervals throughout the length of the project.)

Funds may NOT be used to support:

- Student or post-doctoral fellow research
- Tuition
- Publication costs
- Funding for the kinds of activities supported by departments and colleges (e.g., travel to conferences, basic software purchase)
- Summer salary (where applicable)

Criteria for Review

Reviewers will consider each of the five review criteria (below) to assess merit.

- **Significance**: Does the project address an important problem or critical barrier to improving health and/or healthcare? Is the project’s translational potential clear and compelling?

- **Investigators**: Do the PI and collaborators have the expertise needed to conduct the project? Do the investigators capitalize on differing disciplinary perspectives?

- **Innovation**: Does the project challenge or shift current research or practice paradigms, advance novel concepts, approaches/methods, instrumentation, or interventions or apply these in novel ways?

- **Approach**: Are the procedures and analysis plans justified and appropriate to accomplish the specific aims? Will the project provide the foundation for a competitive proposal for external funding?

- **Collaboration**: How will collection, analysis and/or application of big data benefit from this collaboration? Are the disciplines represented complementary, and does the research plan appear to be prepared by the entire team?

III. Complete REQUIRED Form to Indicate Intent to Submit a Proposal.

A non-binding letter of intent including the name of the Principal Investigator, names of co-investigators and collaborators, a working title for the proposal, and 2-4 sentences describing the broad theme(s) of the project must be received by 5 PM on November 7, 2014 (Link To Form). Letter of Intent Form must be submitted to be considered for funding.
IV. Format and Submission of Proposals.

Proposals should be submitted in two parts: 1) a MS Word file of the Proposal Title, PI Name and Abstract; and 2) a pdf file of the entire application (proposal and all supporting documents) to: Rebecca Jenkins (rjenkins@hmc.psu.edu).

Proposals should be single-spaced, in Arial 11 font, left-aligned with half-inch margins. Proposals should not exceed 4 pages for Sections 4–9 below. Appendices should not be included. Your proposal must be complete when submitted and include all items noted below.

Remember that reviewers may not have specific expertise in your area. Therefore, proposals should be written for a broad academic audience.

PROPOSAL SECTIONS

1. **Title of Proposal.**

2. **Name of Principal Investigator, Co-Investigators and Collaborators, Degree(s), Departments, Colleges.**

3. **Lay Abstract (no more than 300 words).**

   Provide a succinct overview of the proposal, including how the project will advance health/healthcare research through use of big data and the project’s translational potential. Assume that reviewers do not have technical knowledge in a specific field. Avoid or explain technical jargon, field-specific terminology, or acronyms.

4. **Specific Aims.**

   List the specific aims and the rationale for each.

5. **Significance/Impact.**

   Describe how addressing the study aims will promote the translation of scientific knowledge into health impact.

6. **Approach.**

   Describe the activities that will be undertaken to address the study aims.

7. **Investigators and Environment.**

   Describe the qualifications of the investigative team and resources in the environment that will support the conduct of the study.

8. **Timeline and Anticipated Outcomes.**

   Describe the project timeline over a 12-month period. Plans for specific products and outcomes should be specified, including dissemination of results. Examples include: presentations at CTSI events, grant submissions, papers submitted, or the development of a new interdisciplinary team for future grant submissions.

9. **Future Plans.**

   Describe plans to apply for external funding for the next phase of the research that builds on the pilot project, including potential sponsor(s) (e.g., specific NIH institute) and the expected date for submitting the first application.

10. **Literature Cited.**
11. **Budget and Justification.**

Provide an itemized budget and budget justification using SIMS format (http://www.sims.psu.edu) including salaries, fringes, and other expenses, etc., (IAFs will not be used). No more than $10,000 (direct salary) may be allocated to faculty salaries in any project year. As part of the budget justification, describe the roles and experience of the investigators and any other personnel included in the proposal.

_F&A costs (indirects) are not provided._

12. **Provide the name and phone number of your department's budget coordinator.**

13. **Investigator Information.**

For each investigator, beginning with the Principal Investigator, provide the following information:

**Principal Investigator:**
- Name and Degree(s)
- Title
- Department
- College
- Phone
- Email

**Co-Investigator(s):**
- Name and Degree(s)
- Title
- Department
- College
- Phone
- Email

13. **Letter of Support from the PI's Department and Affirmation of Participation from all collaborators.**

Applications must include a support letter or e-mail from the department head/chair or vice chair or vice dean for research as well as a note from each collaborator that acknowledges his/her participation (e-mail is acceptable).

15. **NIH Biosketches for the PI and each co-investigator and/or collaborator. Format for biosketch is available at:**

http://grants.nih.gov/grants/funding/phs398/biosketchsample.doc

Interested investigators are welcome to consult with the CTSI’s Informatics, Biostatistics and/or Ethics key function areas prior to submission. To request a consultation, submit a CTSI service request form.

**NOTE:**
For projects that will be funded, additional ‘Just-in-Time’ information will be required. This includes Institutional Review Board (IRB) and/or IACUC approval as relevant, along with conflict of interest information.

**Questions** about this Pilot Project Funding opportunity should be sent to: Rebecca Jenkins (rjenkins@hmc.psu.edu).