ILLINOIS LEARNING SCIENCES DESIGN INITIATIVE

Illinois Learning Sciences Design Initiative (ILSDI)

—————— inventing the future of teaching and learning ——————

Phase II Call for Proposals
2015-2016 Seed Funding Program
Type I—Grant Development Projects: $15,000
Type II—Pilot or Proof of Concept Projects: $40,000
<UPDATED Submission Deadline: March 15, 2016>

Overview

The mission of the Illinois Learning Sciences Design Initiative (ILSDI) as articulated in the Visioning Future Excellence at Illinois Outcomes Report (2013) is to "understand learning mechanisms and to invent learning and educational tools, practices and spaces for the future of teaching and learning across disciplines and professions" (p. 11). The campus-wide ILSDI aims to build, synthesize, translate, and apply theories of learning to guide designing, developing, building, trialing, assessing, scaling, disseminating, and commercializing evidence-based, replicable, cutting-edge, and transformational technological tools, solutions, and platforms in support of learning environments and practices.

The ILSDI was launched on February 27, 2015 with a lightning symposium, which featured [60 presentations] by 122 faculty, students, and staff from across the Illinois campus. The symposium [program] addressed **three grand challenges**:

1. Advancing the scientific understanding of learning in ways that substantially inform the design of transformative learning tools and environments;

2. Designing and evaluating physical, digital, and/or hybrid learning tools and spaces of the future; and

3. Curating and analyzing big data to transform unitary platforms into adaptive personalized learning environments.

The **ILSDI Seed Funding Program** is designed to foster inter- or trans-disciplinary intellectual engagement around the three grand challenges, facilitate development and

submission of large-scale multi-faculty proposals for external funding, and fund pilot or proof-of-concept projects to better position faculty groups for competitive external funding.

The Phase I Call for Proposals, issued May 5, 2015, funded 10 inter- and trans-disciplinary teams from across the Illinois campus, representing 10 colleges, 35 academic units, and 6 centers and institutes. The teams developed white papers (submitted November 30, 2015) to translate ILSDI overarching goals and grand challenges into articulated working themes. The themes drew on Illinois strengths to define questions and problems for cutting-edge research and development, which represented viable opportunities for pursuing significant external funding. The white papers were systematically analyzed and synthesized to frame the themes for this Phase II call for proposals.

Phase II Call for Proposals

Funding Types and Objectives

Two types of proposals will be funded in Phase II:

1. **Type I Grant Development Projects**: The target is to fund 4 proposals for up to **$15,000** per proposal. Funds will be used to convene and support multi- or trans-disciplinary teams who are ready to plan, develop, and submit at least one large-scale proposal for external funding.

2. **Type II Pilot or Proof-of-Concept Projects**: The target is to fund 2 proposals for up to **$40,000** per proposal. Funds will be used by multi- or trans-disciplinary teams that will benefit from a period of development and/or specific pilot research to generate sufficient findings to position the project for competitive external proposal submission. Type II project activities will be conducted in two stages:

   • Stage I will convene and support the conduct of specified development and/or research activities.

   • Stage II will be used to plan, develop, and submit at least one large-scale proposal for external funding.

Funding stipulations:

• Type I and Type II project funds may be used to support Illinois graduate student and academic professional salaries, meeting expenses (in compliance with OBFS Guidelines), and external consultant fees.

• For Type II projects, funds may also cover other research expenses, including materials and supplies, participant incentives, research travel, and computer programming costs (excluding the purchase of equipment).

• Indirect costs (F&A) will not be assessed.

• For the purpose of this competition, "large-scale" funding is defined as proposals seeking $500,000 or more in external funds. Preference will be given to proposals seeking federal

funding that will receive full F&A.

- Upon notification of award, the PI will receive funds via inter-unit transfer.

Eligibility

The Principal Investigator (PI) for each proposal must be a UIUC tenure-line faculty member or full-time research scientist (or the equivalent). A PI may participate in several proposals but serve as PI for only one submission. Proposals must feature multidisciplinary teams that involve at least two UIUC Colleges and/or Institutes. Preference will be given to proposals that feature wide-ranging inter- or trans-disciplinary teams.

- UIUC faculty, full-time academic professional researchers, and post-doctoral fellows from across campus may serve as Co-PIs or Senior Personnel on submissions. Graduate students may serve as Senior Personnel or collaborators.

- Projects may involve researchers affiliated with other institutions and may enlist additional consultant assistance to complement the expertise required to conduct project activities.

Deliverable

Awarded teams will develop a complete, ready-to-submit proposal for external funding—including all main and ancillary documents and materials—as stipulated by the requirements of the target funding agency. Additionally, pilot or proof-of-concept projects will submit a final report detailing the implementation of their Stage I activities, and outlining the results.

Red Team Review

ILSDI stands ready to organize campus red teams to provide substantive review for robust proposal narratives prepared for the targeted external submissions, provided that a solid draft is ready for review at least 30 days before the selected proposal submission deadline.

Proposal Development Support

Institutional support for proposal development and submission are available as follows:

- Proposals seeking $1 million+ in external funding are eligible for grant development assistance through the Office of Proposal Development (OPD) in the Office of the Vice Chancellor for Research. Teams intending to request OPD services should attend closely to OPD stipulations and requirements.

- Proposals associated with this competition, which seek $500,000+ in external funding with Principal, Co-Principal Investigators, or Senior Personnel from the College of Education, are eligible for strategic proposal development assistance and submission support through the Bureau of Educational Research (BER). Teams intending to request BER services should consult with the Bureau, proactively, at least 8 weeks before the anticipated submission date.

Selection Process

- Proposals will be reviewed by faculty panelists selected by the ILSDI Steering Committee.

- Criteria for selection include scientific merit, match with the thematic strands of the ILSDI Phase II Seed Funding Program (see below), and potential to successfully produce a competitive proposal for external funding, given the target funding agency and program.

Phase II Seed Funding Program Working Themes

The ILSDI Phase II Seed Funding Program welcomes proposals that address one or more of the following **working themes**:

1. **Development of robust models for understanding and fostering the transfer of learning.**

   This theme aims to further research and understand the nature of transfer by elucidating the various correlates of, and conditions that foster, transfer of learning. These understandings will enable the construction of highly specified models that enable the development of individualized and effective instructional/training regimes to foster transfer (of study skills across content areas, of spatial reasoning across disciplinary problems, of problem-solving strategies across domains, etc.).

2. **Optimization of learning and transfer, which occurs at the nexuses of disciplinary knowledge, skills, and practices through various representations and interactions.**

   This theme aims to understand and optimize the impacts of coupling specific forms of representation (auditory, text, visual, 2-dimensional, 3-dimensional, visual metaphor, dynamic visualization, simulations, virtual and augmented realities, etc.) with alternative input interface types (extended engagement with text, point-and-click systems, haptic and embodied interactions, etc.) and forms of feedback (text, visualization, haptic, simulations, etc.) on the acquisition and transfer of complex disciplinary knowledge, skills, and practices. This theme focuses particularly on modalities and approaches that have the potential to substantially improve currently dominant forms of representing and interacting with disciplinary knowledge, skills, and practices. These forms include, but are not limited to, textbooks, e-books, lectures, study groups, wet labs, internships, synchronous and asynchronous online learning tools, and MOOCs.

3. **Collaborative gaming and/or digital learning environments with integrated capabilities for mining user inputs to detect learning, assess progress toward learning goals, and provide users and instructors with just-in-time feedback to scaffold, support and improve learning.**

   This theme aims to spearhead the creation of next-generation gaming and digital learning platforms and environments by fostering collaborations between researchers who develop and/or research educationally-purposed games and digital technologies with

data analytics/mining experts and statisticians who are focused on utilizing user-generated data to model, detect, and assess learning.

4. **Capture, curation and harvest of big data streams to understand and improve learner/audience interactions with content and performance.**

   This theme focuses on creating or further developing existing tools and systems to capture and curate big data streams (lectures, technology user click-streams, student or audience response to learning materials or performance, etc.). Data mining/analytics could be applied in real-time to provide users and instructors/performers with immediate feedback to improve learning or interaction; or applied later to allow fine-grained, searchable, and customizable access to curated datasets in order to reinforce or further theoretical and applied findings regarding learning or performance.

Important Dates

- Deadline for proposal submission: **5:00 P.M. CST on March 15, 2016 (updated date).**
- Awards will be announced April 10, 2016.
- For Type I projects, external funding proposals must be ready for submission no later than April 30, 2017.
- For Type II projects, research activities must be completed, and external funding proposals submitted no later than July 31, 2017.

Application Process

Go to the ILSDI competition submission interface to provide the following information:

- Project type
- Proposal title
- Proposal team names, affiliations, and contact information
- A short abstract (maximum of 250 words)

The remaining proposals materials should be uploaded as a **single pdf file** in the interface, and should include:

- A cover page including: Title of the proposal; name and contact information of the PI; and a 50-word description of the disciplinary expertise of each proposal team member.

- A two-page prior support sheet listing: Key and/or relevant successful external funding received by the PI and/or Co-PIs. The list should specify the funding agency, award number, program, award dates, and total funds awarded.

- Narrative:
  - **Type I projects:** Narrative up to four-pages, single-spaced (excluding references) that describes the: (a) Anticipated funding agency (or agencies) with competition name, thematic strand or other identifying details, and target submission deadline, which should be no later than April 30, 2017; (b) Central idea and goals of the

proposed project and its alignment with one or more of the thematic strands of the ILSDI Phase II Seed Funding Program; and (c) Planned activities explicating the role of each team member toward the writing and submission of the external funding proposal. The narrative should specify the team member who will serve as Principal Investigator for overseeing the proposal for external funding through successful submission.

- **Type II projects:** Two-part narrative of up to six-pages, single-spaced (excluding references) that addresses both stages of the project. Stage I narrative describes the: (a) Research and/or development pilot project; (b) Project alignment with one or more of the thematic strands of the ILSDI Phase II Seed Funding Program; (c) Timeline for project implementation along with responsibilities of team members; and (d) Ways in which the pilot project results or products positions the team to proceed to Stage II. Stage II narrative describes the: (a) Anticipated funding agency (or agencies) with competition name, thematic strand or other identifying details, and target submission deadline, which should be no later than July 31, 2017; and (b) Planned activities, explicating the role of each team member toward the writing and submission of the external funding proposal. The narrative should specify the team member who will serve as Principal Investigator for overseeing the proposal for external funding through successful submission.

- A detailed budget for project activities. Type I and Type II funds may be used to support graduate student or academic professional salary, meeting expenses (in compliance with OBFS Guidelines), and consultant fees. Type II projects may also include funds to support materials and supplies, participant incentives, research travel, and computer programming costs. Fringe benefits are assessable on graduate student and AP salary. Neither tuition remission nor indirect costs (F&A) should be assessed. Subawards to other institutions are not allowed under this solicitation.

- The budget must be accompanied by a narrative budget justification of 1 to 3 pages, that specifies the duties of project personnel, breakdown of funds for materials and supplies, meetings, participant incentives, programming costs, and travel.

- The name and contact information of the finance officer in the PI's unit who will handle the inter-unit transfer of funds in case the proposal is awarded.

For additional information, please contact

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