NSF PIPP Planning Grant Webinar

July 13th 2021, 2-3PM EDT

Use the Q&A panel in Zoom to send questions!

After the webinar, send questions to PIPP@nsf.gov

If you require captions, please open this URL in a separate browser page:
https://www.captionedtext.com/client/event.aspx?EventID=4701514&CustomerID=321

Solicitation page: https://www.nsf.gov/pubs/2021/nsf21590/nsf21590.htm

Why Predictive Intelligence for Pandemic Prevention (PIPP)?

- **NSF recognizes that:**
  - Prevention and early detection of disease are cornerstones of strategic investments in public health, and in the resilience of wildlife populations, and in that of sustaining agricultural crops and other plants. Recent and past pandemics show the costly consequences of not containing a pathogen.
  - Mitigation of an outbreak requires multiple disciplines to collaborate.

- **NSF Response:**
  - NSF initiated PIPP to seed and catalyze fundamental research to develop trans-disciplinary capabilities needed to inform future infectious disease outbreaks

PIPP workshops

Four workshops brought together interdisciplinary experts in the biological, engineering, computer, and social and behavioral sciences to start conversations and catalyze ideas on how to advance scientific understanding beyond state-of-the-art in pre-emergence and emergence forecasting, real-time monitoring, and detection of inflection point events to prevent and mitigate the occurrence of future pandemics.

https://www.nsf.gov/events/event_summ.jsp?cntn_id=302023&org=NSF

Sponsored by CISE, BIO, ENG, SBE to build collaborations.

NSF PIPP Initiative

This initiative focuses on fundamental research in biological sciences, social science, computer and information science and engineering needed to **tackle grand challenges related to the prediction and prevention of pandemics**.

- Phase I: A solicitation for Planning Grants (discussed here)

- Phase II: NSF anticipates releasing a Phase II Center Grants solicitation around 2023. (*Not discussed here*). Note that submission or award of a Planning Grant is not required to participate in the anticipated PIPP Phase II Center Grants competition.

A **Grand Challenge** could include several of these areas
(these are examples and <u>not</u> intended to be limiting)

(a) pre-emergence studies that predict rare events in multiscale, complex, dynamical systems;

(b) technology innovation in sensing and data collection for predictive intelligence;

(c) exploring the interdependence of biological and behavioral mechanisms across scales from the molecular to the global; and

(d) the relationships between human behavior and disease development and transmission in the natural/built environment and in communities.

Key characteristics of a competitive proposal include:

- **An ambitious and forward-looking scientific grand challenge** (GC) problem motivated by PIPP with a clear justification for the choice of problem with respect to a future pandemic landscape. The GC should be centered around a critical and broad question in pandemic predictive intelligence, poised for breakthroughs by collaboration across disciplines.
- **A high-level view of the project.** A description (visual) of how the identified subproject(s) and other pieces fit the GC selected for the project, providing a bird's-eye view of the Center-scale project envisioned.
- **A research agenda.** A research agenda for one or more targeted project(s) including a range of objectives and research approaches that are clearly integrated under the coordinated vision of the GC. Proposals in which specialized research groups pursue independent projects that are not integrated in the GC are NOT encouraged. The research approaches for sub-projects must be innovative with potential to advance the involved disciplines.

Key characteristics of a competitive proposal include:

- **Diverse, multi-disciplinary, and potentially multi-organizational team.** A collaborative culture that values and benefits from shared research and interdisciplinary training is highly encouraged. Teams should be designed to achieve the goals of the GC, and to demonstrate commitment to diversity and inclusion in composition and leadership. Budgets should be commensurate with the project roles and goals. The role of each team member must be clearly described and justified. Team members may be from a single organization or multiple organizations.
- **A plan for scaling to center operations.** A plan that outlines activities to develop communities and capacity for a full Center operation through diverse activities, such as visioning, workshops, education, and training to overcome disciplinary boundaries, development of partnerships, and engagement of stakeholders most appropriate for a Center vision.

PIPP Planning Grant distinctions from other programs

- **New**, potentially transformative, capabilities:
  - **NOT an extension for research projects on infectious diseases that can be submitted to existing core or special programs in single directorates or divisions across NSF.**
  - Proposals should span research across the BIO, CISE, ENG and SBE directorates, and be compelling across the subdisciplines spanned. **Specifically, proposals submitted in response to this solicitation will address critical problems relating to predictive intelligence for pandemic prevention, and they must integrate a combination of innovative biological, computational, engineering and systems-level techniques or tools.**
  - **Larger-scale** programs
  - intellectual merit and broader impacts commensurate with the size of the award
- **Multidisciplinary** teams and a **convergence** research approach

Investigations that are outside the scope of this PIPP announcement include:

- Projects limited to specialized research groups pursuing independent projects that are not synthetically integrated across the identified GC;
- Projects that do not identify an over-arching GC problem motivated by PIPP;
- Projects that do not engage teams with balanced participation from computer and information science, biology, engineering, and social, behavioral, and economic sciences as relevant to the identified GC problem;
- Projects that fail to delineate the role and expertise of participants from different disciplines;
- Projects that do not discuss associated risks and mitigation plans.

NSF participants in this solicitation

- Directorate for Biological Sciences
- Directorate for Computer and Information Science and Engineering
- Directorate for Engineering
- Directorate for Social, Behavioral and Economic Sciences

Solicitation (See for detail instructions)

- **Planning Grant**: Identification of a GC, Fundamental, multidisciplinary, and integrative research and education
  - 18 months, up to $1 million/project
  - Possibly leading to future Phase II (Center-scale) proposals (Submission or award of a Planning Grant is not required to participate in the anticipated PIPP Phase II Center Grants competition.)
- Titles must begin with "PIPP Phase I", followed by a colon, then the title of the project.
- A person may be PI/co-PI on only one proposal.
- After submission of your proposal, send an email to: PIPP@nsf.gov with a single Microsoft PowerPoint slide summarizing the vision of your PIPP Planning Grant proposal.

Timeline

- Proposals due by October 1, 2021, 5pm local time:
  - For multiple institutions: one proposal with sub-awards (= collaborative proposal from single institution). The PAPPG category of: Collaborative proposals from multiple institutions cannot be engaged here).
  - No Letters of Intent required
- Aim to make awards by end of March 2022

Merit Review Criteria (see solicitation for details)

- Intellectual Merit and Broader Impacts
- Solicitation-specific criteria:
  - How well does the proposed project address the grand challenge?
  - Does the proposal bring together complementary expertise, build on leading-edge research across multiple disciplines, connect and contribute to a broader intellectual context of work, and develop synergistic links to related efforts as appropriate?
  - Does the Project Management address all required elements ?
    Proposals without a Project Management Plan will be returned without review.
- Reviewers may include educational & social science experts to complement the technical experts

Conditions of award (see solicitation for details)

- One or more designated project representatives (PI/co-PI/senior personnel or NSF-approved replacement) must attend two meetings during the active award period
  - a virtual kick-off meeting during the early phase of the award and
  - a meeting at the end of the fifteenth month to be held in the Washington, DC, area if possible, or virtually otherwise).
- Proposal budgets must include appropriate amounts for travel to these meetings.

For more information:

- Funding opportunity page with links to solicitation and announcements: https://www.nsf.gov/funding/pgm_summ.jsp?pims_id=505737
- Send questions and/or prospectus to the following Email: PIPP@nsf.gov
- Please keep any **prospectus** to **ONE PAGE**.

- A recording and transcript of the webinar, along with the slides, will be accessible from the event page shortly after conclusion of the webinar.

- The Frequently Asked Questions (FAQs) will be published soon after the seminar on our website.

Q&A

Submit questions using the Q&A icon in Zoom