MATHEMATICAL MODELING OF POLICY OPTIONS FOR EVOLVING PUBLIC HEALTH CHALLENGES (MPOPHC)

May 16, 2024, 1-2pm EST

Submit questions using the Q&A icon in Zoom

- **DCL page: https://www.nsf.gov/pubs/2024/nsf24088/nsf24088.jsp**

- **Webinar page:**

  https://new.nsf.gov/events/webinar-mathematical-modeling-policy-options/2024-05-16

- **Submission deadline:** June 20, 2024

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MATHEMATICAL MODELING OF POLICY OPTIONS FOR EVOLVING PUBLIC HEALTH CHALLENGES (MPOPHC) SYNOPSIS (NSF 24-088)

The **MPOPHC** funding opportunity supports innovative research on modeling policy options for evolving public health challenges that increases understanding of biological or social phenomena that affect the success of measures to prevent or mitigate infectious diseases.

With an emphasis on the transmission of respiratory pathogens among human hosts, the most likely cause of future pandemics, this activity will support multidisciplinary teams that increase the quality of mechanistic models capable of evaluating the merits of alternative policies for mitigating public health threats. Proposers are encouraged to explore a wide range of innovations that address various aspects of this challenge and to use different modeling techniques.

POSSIBILITIES FOR RESEARCH

- Collaborators in mathematics, epidemiology, or public health policy should address current research challenges and propose strategies that integrate mathematical and social/biological understanding

- Topics include, but are not limited to:
  - Attaining dynamic policy goals via available resources
  - Identifying and modeling relevant heterogeneity
  - Ensuring the reliability of model-based conclusions
  - Effectively communicating with stakeholders
  - Identifying and using novel information sources
  - Increasing the utility of multi-model comparisons
  - Combining analytical and simulation results

PROPOSAL REQUIREMENTS

- Proposals may be submitted for up to three years of funding

- All collaborative proposals submitted as separate submissions from multiple organizations must be submitted via Research.gov

- There are no restrictions or limits on the number of proposals per PI or co-PI. However, proposals that duplicate, or substantially resemble, other pending proposals at NSF will be returned without review.

- Investigators should ensure that their proposed research would be useful to stakeholders during evolving public health crises

REVIEW CRITERIA

In addition to their Intellectual Merit and Broader Impacts, proposals will be assessed on:

- Significance of biological questions to be addressed
- Innovative applications of existing mathematics to study biological/social systems or development of new mathematics
- Integration of mathematics and biology (including the applicability of mathematical results/tools to real populations)
- Strength of collaborators and range of their expertise
- Impact of research outcomes on public health and welfare

COMMON INQUIRIES - 1

➤ How does the MPOPHC funding opportunity differ from the core NSF Mathematical Biology program?

  - More focused on mathematical research with public health applications, particularly ones that interest the Coronavirus and Other Respiratory Viruses Division at the CDC due to their participation in this activity.

➤ What is the project period?

  - Awards will be for up to 3 years.

➤ What are the references / guidelines / restrictions on the topics that would be considered.

  - Mathematical modeling of the transmission of respiratory pathogens among human hosts, with a focus on policy options for evolving public health challenges.

COMMON INQUIRIES - 2

- ➢ Is it necessary to have an interdisciplinary team (i.e., is the proposal required to have PIs, Co-PIs or senior personnel with expertise from both mathematics and biology/epidemiology)?
  - No, but reviewers will be asked to evaluate the strength of interdisciplinary expertise from both the mathematical and biological or social sciences.
- ➢ Are there any restrictions on what pathogens can be studied?
  - No, but respiratory pathogens are of special interest.
- ➢ What is the nature of the biological problems to be addressed by this call? On the spectrum that ranges from high-level theory down to specific application, where are they supposed to lie?
  - All problems are considered, but there are focused topics (see slide 3).

➢ Are there any sections in addition to the standard application for this proposal?

- No. The format follows the standard NSF guide, the PAPPG, available at nsf.gov.

➢ Will this be a full proposal to the Mathematical Biology Program?

- Yes

➢ Do you want models that predict and attempt to avoid the negative outcomes of the traditional public health measures such as closing schools and businesses?

- Such models would seem to fit the call.

➤ Does the call couple mathematical modeling of diseases and socio-economic factors?

- It can, insofar as socio-economic factors affect transmission of respiratory pathogens among human hosts.

➤ Are there limits on the number of proposals that may be submitted per PI or Co-PI?

- No. There are no restrictions or limits.

➤ Is there a limit to the size of the awards?

- No. There are no restrictions or limits. But the budget should be consistent with the proposed research.

COMMON INQUIRIES - 5

➢ Can foreign researchers be included in the application from a US submitting institution?

- Yes (subaward). Collaborative proposals and subawards are allowed.

➢ What kind of team do you expect? Intramural or intercollegiate?

- Collaborations among mathematicians and epidemiologists are especially encouraged. Within or across institutions does not matter.

➢ Are there any future submission deadlines?

- While we hope that there will be future opportunities, no additional submission dates have been announced yet.

THANK YOU FOR ATTENDING

Mathematical modeling of policy options for evolving public health challenges (NSF 24-088)

Thank you for attending the Webinar

We look forward to receiving proposals from you!