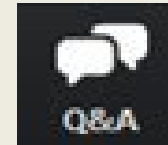


# DIVISION OF MATHEMATICAL SCIENCES EMERGING MATHEMATICS IN BIOLOGY (EMB) WEBINAR

January 19, 2023, 1-2pm EST

Submit questions using the Q&A icon in Zoom



- **Program page:**  
<https://beta.nsf.gov/funding/opportunities/emerging-mathematics-biology-emb>
- **Webinar page:** <https://beta.nsf.gov/events/emb-webinar/2023-01-19>
- **Submission target date:** March 22, 2023.
- **Program Officers:**

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Amina Eladdadi ([aeladdad@nsf.gov](mailto:aeladdad@nsf.gov))



# SYNOPSIS OF PROGRAM

## NSF 23-537

The **eMB** program supports research in mathematical biology that addresses significant biological questions by applying nontrivial mathematics or developing new theories, particularly from foundational mathematics and/or computational/statistical tools, including AI/DL/ML.

With an emphasis on new foundational mathematics and/or AI/DL/ML to advance our understanding of complex and heterogenous biological systems at all scales (**molecular, cellular, organismal, population, ecosystems, etc.**) and focused topics, the **eMB** program encourages innovative projects from strong interdisciplinary teams with the objective of developing more reliable mathematical tools for enhanced understanding of biological systems and greater societal impacts.



# POSSIBILITIES FOR RESEARCH TOPICS

- New mathematics motivated by biological applications for which current mathematical theories and methods are inadequate.
- Examples of research topics include, but are not limited to
  - Genomics
  - Mathematical **foundations** for the uses of **AI/DL/ML** theory and methods in biomathematics
  - Improved modeling approaches and tools for emerging and **reemerging** infectious diseases
  - Modeling of the effects of **climate change** and **clean energy** on biological systems;
  - Neuroscience
  - Applications of mathematics in **biotechnology**



# EMB PROPOSAL REQUIREMENTS

- Proposals may be submitted for up to three years duration
- All collaborative proposals submitted as separate submissions from multiple organizations must be submitted via Research.gov
- There are no restrictions or limits on number of proposals per PI or co-PI. However, a proposal that is a duplicate of, or substantially similar to, another proposal or a pending proposal at NSF will be returned without review.
- All proposals should include metrics to assess the success of the project.



# EMB REVIEW CRITERIA

**In addition to the Intellectual Merit and Broader Impacts, the eMB proposals will be assessed on:**

- Significance of biological questions to be addressed
- Innovative applications of mathematical theories and methods to study biological systems and/or development of new mathematics
- Integration of mathematics and biology (including the applicability of modeling tools to real biological systems)
- Strengths of interdisciplinary teams (e.g., Math, Biology)
- Impact of research outcomes on the math and bio communities



**EMERGING MATHEMATICS IN BIOLOGY**  
**NSF 23-537**

**Thank you for attending the  
eMB Webinar**

**We look forward to receiving  
proposals from you!**

