

# **Division of Mathematical Sciences (DMS)**

## **Virtual Office Hour**

**Date: February 23, 2021**

Welcome to the DMS Virtual Office Hour. We will begin soon.

Please submit questions via the Q&A box  
available to you on Zoom.



# Division of Mathematical Sciences (DMS)

## Welcome to our Virtual Office Hours!

Program Directors in attendance today

- Juan C. Meza (Division Director)
- Tomek Bartoszynski, Stefaan de Winter (Combinatorics)
- Tomek Bartoszynski, Christian Rosendal, Stefaan de Winter (Foundations)
- Zhilan Feng, Junping Wang (Mathematical Biology)
- Pedro Embiz-Droz, Zhilan Feng, Huixia (Judy) Wang, Yong Zeng (NIGMS)
- Moderators: Michelle Manes, Malgorzata Peszynska, Chris Stark

### Subscribe to DMSNEWS:

Send email to [listserv@listserv.nsf.gov](mailto:listserv@listserv.nsf.gov)

In the body of the message, put the following command:  
subscribe dmsnews [your name]

### Suggest a topic for future VOH:

Send email to [dms-voh@nsf.gov](mailto:dms-voh@nsf.gov)



# Division of Mathematical Sciences (DMS)

## Questions during VOH:

- Submit your questions via the Q&A box
  - Questions can be submitted anonymously.
  - We will focus on questions of interest to a wide audience.
  - For specific questions about a particular project, contact a cognizant Program Officer.
- For recently asked questions/copy of slides, see <https://www.nsf.gov/mps/dms/presentations.jsp>
- Next DMS Virtual Office Hour: March 23, 3:00pm-4:00pm EST
  - Topics include: Applied Mathematics program, Infrastructure, CAREER, Scale MoDL
  - Questions can be submitted in advance on the registration form.



# Division of Mathematical Sciences (DMS)

## Virtual Office Hour Topics today:

- Update from the Division Director.
- Brief overview: Combinatorics program  
[https://www.nsf.gov/funding/pgm\\_summ.jsp?pims\\_id=503570](https://www.nsf.gov/funding/pgm_summ.jsp?pims_id=503570)
- Brief presentation: Foundations program  
[https://www.nsf.gov/funding/pgm\\_summ.jsp?pims\\_id=5548&org=DMS&from=home](https://www.nsf.gov/funding/pgm_summ.jsp?pims_id=5548&org=DMS&from=home)
- Brief discussion: Mathematical Biology program  
[https://www.nsf.gov/funding/pgm\\_summ.jsp?pims\\_id=5690](https://www.nsf.gov/funding/pgm_summ.jsp?pims_id=5690)
- Brief discussion: Joint DMS/NIGMS program  
[https://www.nsf.gov/funding/pgm\\_summ.jsp?pims\\_id=5300](https://www.nsf.gov/funding/pgm_summ.jsp?pims_id=5300)
- Q&A



# Division of Mathematical Sciences (DMS)

## Opportunities and upcoming deadlines:

- Funding opportunities

<https://www.nsf.gov/funding/programs.jsp?org=DMS>

- Upcoming deadlines link

[https://www.nsf.gov/funding/pgm\\_list.jsp?ord=date&org=NSF&sel\\_org=DMS&status=1](https://www.nsf.gov/funding/pgm_list.jsp?ord=date&org=NSF&sel_org=DMS&status=1)

- Upcoming due dates

- [National Science Foundation Research Traineeship \(NRT\) Program](#)
- [Navigating the New Arctic \(NNA\)](#)
- [Future of Work at the Human-Technology Frontier: Core Research \(FW-HTF\)](#)
- [Enabling Quantum Leap: Quantum Interconnect Challenges for Transformational Advances in Quantum Systems \(QuIC-TAQS\)](#)
- [ADVANCE](#)
- [NSF CMBS Regional Research Conferences in the Mathematical Sciences](#)



# DMS Division Director Update

## February 23, 2021

- Recent News
- COVID-19 Impacts
- DMS Response



# COMBINATORICS PROGRAM

## Overview

- **Website:**

[https://www.nsf.gov/funding/pgm\\_summ.jsp?pims\\_id=503570](https://www.nsf.gov/funding/pgm_summ.jsp?pims_id=503570)

- **Program Officers for DMS:**

Tomek Bartoszynski (tbartosz@nsf.gov)

Stefaan De Winter (sgdewint@nsf.gov)

- **Submission Target Date:** Fourth Thursday in September (NSF PD 18-7970 )



# COMBINATORICS PROGRAM

## Program focus

- **Key focus is on regular proposals in broadly speaking**
  - 1) algebraic, geometric and enumerative combinatorics;
  - 2) probabilistic combinatorics, graph and design theory.
- **The program saw a recent increase in submitted proposals in the realm of operations research/combinatorial optimization. HOWEVER, the program will only entertain such proposals if there are clearly described applications to core combinatorics.**
- **The program has a vested interest in the CAREER program, RTG program, as well as the FRG program.**



# COMBINATORICS PROGRAM

## Program focus + current PIs

- **During non-COVID times the program reserves a significant budget for conference support (solicitation 21-541).**
- **For current PIs: there is always an option to apply for supplements for summer REU students or graduate students.** It can be helpful to contact us before submitting such supplement request.
- **For current PIs: the program operates under maximum flexibility due to COVID (no-cost extensions, re-budgeting requests,...)**



# Division of Mathematical Sciences (DMS)

## Virtual Office Hour

## Foundations Program

- **Website:**

[https://www.nsf.gov/funding/pgm\\_summ.jsp?pims\\_id=5548](https://www.nsf.gov/funding/pgm_summ.jsp?pims_id=5548)

### Program Officers for Foundations:

**Tomek Bartoszynski** [tbartosz@nsf.gov](mailto:tbartosz@nsf.gov)

**Pawel Hitczenko** [phitczen@nsf.gov](mailto:phitczen@nsf.gov)

**Christian Rosendal** [crosenda@nsf.gov](mailto:crosenda@nsf.gov)

**Stefaan De Winter** [sgdewint@nsf.gov](mailto:sgdewint@nsf.gov)

- **Submission Target Date:** September 28, 2021

- If your proposal is not ready by the target date, let us know.
- If it will take more than two extra weeks, give us a title and summary to plan for reviewing.



# Division of Mathematical Sciences (DMS)

## Virtual Office Hour

### Foundations Program: Conference and Workshop proposals

- Read solicitation requirements in NSF 21-541 and PAPPG requirements for proposals of this type.

NSF 21-541: <https://www.nsf.gov/pubs/2021/nsf21541/nsf21541.htm>

PAPPG, Chapter II. Section

E.7: [https://www.nsf.gov/pubs/policydocs/pappg20\\_1/pappg\\_2.jsp#IIE7](https://www.nsf.gov/pubs/policydocs/pappg20_1/pappg_2.jsp#IIE7)

- Please submit conference proposals for in-person meetings with budget requests not exceeding \$50,000 **at least four months** in advance of the conference dates. No decisions will be made on proposals to support in-person conferences **until it is established that there are not any pandemic-related travel restrictions** for the conference site and time frame.



# Mathematical Biology Program Overview

**Supports research in areas of applied and computational mathematics with relevance to the biological sciences**

- **Proposal Submission Window:**

August 20, 2021 - September 6, 2021 (Apply to PD 18-7334)

- **Website:** [https://www.nsf.gov/funding/pgm\\_summ.jsp?pims\\_id=5690](https://www.nsf.gov/funding/pgm_summ.jsp?pims_id=5690)

- **Program Officers:**

Junping Wang (jwang@nsf.gov)

Zhilan Feng (zfeng@nsf.gov)



# Mathematical Biology Program Funding Opportunities

- **Core Mathematical Biology Program:**

Successful projects are **mathematically innovative** and address challenging problems of interest to members of the **biological community**.

- **Joint DMS/NIGMS initiative:**

A program between DMS and the National Institute of General Medical Sciences (NIGMS) at NIH, which supports novel fundamental research **in mathematics and statistics** necessary to answer questions in the **biological and biomedical sciences**.

- **MODULUS: Models for Uncovering Rules and Unexpected Phenomena in Biological Systems**

A joint activity between DMS and the Division of Molecular and Cellular Biosciences (MCB) to support non-medically motivated interdisciplinary research. Successful projects should include **innovative mathematical** approaches that will **drive biological discovery** and **push the boundaries** of mathematics and biology.



# Mathematical Biology Program Other Funding Opportunities

- NSF 20-609, Collaborative Research in Computational Neuroscience (**CRCNS**):
  - ✓ November 23, 2021 (for FY 2022)
  - ✓ [https://www.nsf.gov/funding/pgm\\_summ.jsp?pims\\_id=5147](https://www.nsf.gov/funding/pgm_summ.jsp?pims_id=5147)
- NSF 21-534, Understanding the Rules of Life: Microbiome Interactions and Mechanisms (**URoL:MIM**):
  - ✓ February 23, 2021 (for FY 2021)
  - ✓ <https://www.nsf.gov/pubs/2021/nsf21534/nsf21534.htm?org=NSF>.
- NSF 21-560, Understanding the Rules of Life: Emergent Networks (**URoL:EN**):
  - ✓ May 10, 2021 (for FY 2021)
  - ✓ <https://www.nsf.gov/pubs/2021/nsf21560/nsf21560.htm>



# Joint DMS/NIGMS Initiative to Support Research at the Interface of the Biological and Mathematical Sciences (DMS/NIGMS)

- **Website:**

[https://www.nsf.gov/funding/pgm\\_summ.jsp?pims\\_id=5300](https://www.nsf.gov/funding/pgm_summ.jsp?pims_id=5300)

- **Program Officers for DMS:**

Pedro F. Embid ([DMS-NIGMS@nsf.gov](mailto:DMS-NIGMS@nsf.gov))

Zhilan J. Feng ([DMS-NIGMS@nsf.gov](mailto:DMS-NIGMS@nsf.gov))

Huixia Wang ([DMS-NIGMS@nsf.gov](mailto:DMS-NIGMS@nsf.gov))

Yong Zeng ([DMS-NIGMS@nsf.gov](mailto:DMS-NIGMS@nsf.gov))

- **Submission Deadline:** September 18, 2021 (**Solicitation NSF 20-575**)

**Submission Window:** September 1 – September 18, 2021



# Joint DMS/NIGMS Initiative to Support Research at the Interface of the Biological and Mathematical Sciences (DMS/NIGMS) (cont.)

- The program supports fundamental research in mathematics and statistics necessary to answer questions in the biological and biomedical sciences.
- Two Tracks:
  - Track1 (up to \$600K/3yrs): Exploratory projects (high risk/high reward) and/or new teams
  - Track 2 (up to \$1.2M/3-4yrs): Large scope projects from well-established teams
- Important factors:
  - Important biomedical/biological problem.
  - Innovative mathematical/statistical/computational methods
  - Integration of the mathematical approaches and the biomedical/biological problems.
- Proposals based on topics or approaches for which the PI, co-PI or Senior Personnel previously received support from the joint DMS/NIGMS program will be returned without review.



# Joint DMS/NIGMS Initiative to Support Research at the Interface of the Biological and Mathematical Sciences (DMS/NIGMS) (cont. 2)

- Prospective investigators are strongly encouraged to discuss their proposals with the program directors via email ([DMS-NIGMS@nsf.gov](mailto:DMS-NIGMS@nsf.gov)) before submission to ask if the proposed project is relevant to both DMS and NIGMS.
- Biological application areas are restricted to those currently supported by the NIGMS (see <http://www.nigms.nih.gov/Research/>); projects which fall clearly within the scope of other NIH institutes will be returned without review.
- Proposal preparation instructions must be meticulously followed. Non-compliant proposals will be returned without review.



# Virtual Office Hour: Questions from registration

## 1. General topic:

- A. Can 4-year undergrad programs receive support? We have talented faculty who can do strong undergraduate research.
- B. Can I get extra time for submission? The pandemic slowed me down.
- C. Can I get extra time to complete my NSF funded project? The pandemic slowed me down.
- D. How to write a successful proposal? I wrote many times and have not been successful.
- E. Is there any chance for cross-disciplinary applications outside Math/Biology to be supported? For example, engineering?

## 2. Combinatorics/Foundations:

- A. I am interested in an overview. Thank you!

## 3. Math Biology/NIGMS:

- A. Please elaborate on the URoL solicitation.
- B. Please articulate the differences between the NSF Math Bio and the DMS/NIGMS Initiative.
- C. Can someone be funded by the joint DMS/NIGMS program more than once? Is it true there are no renewals under this program.



# Division of Mathematical Sciences (DMS)

## Virtual Office Hour: Thank you

- For slides and recently asked questions, see <https://www.nsf.gov/mps/dms/presentations.jsp>
- Submit questions/suggestions to [DMS-VOH@nsf.gov](mailto:DMS-VOH@nsf.gov)
- Submit questions through event registration form
- For specific questions about your project, contact a Program Officer
- For future Virtual Office Hour topics, see [https://www.nsf.gov/events/index.jsp?org=NSF&event\\_type=12&orgToSearch=MPS&month=&year=2021](https://www.nsf.gov/events/index.jsp?org=NSF&event_type=12&orgToSearch=MPS&month=&year=2021)
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