

Division of Mathematical Sciences (DMS)

Virtual Office Hour

Date: January 21, 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)
- Stefaan De Winter, Tiziana Giorgi, Cesar Silva, and Sandra Spiroff (Research Experiences for Undergraduates)
- Huixia (Judy) Wang (Smart Health)
- Michelle Manes (Tips for new PIs)
- Moderators: Michelle Manes, Malgorzata Peszynska, Christopher Stark

Subscribe to DMSNEWS:

Send email to 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



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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: Tuesday, February 23, 2PM EST
 - Topics include: Math Bio program, NIGMS, Combinatorics and Foundations programs.
 - Questions can be submitted in advance on the registration form.



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Virtual Office Hour Topics today:

- Update from the Division Director.
- Research Experiences for Undergraduates (REU).
https://www.nsf.gov/funding/pgm_summ.jsp?pims_id=5517&org=DMS&from=home
- Smart Health and Biomedical Research in the Era of Artificial Intelligence and Advanced Data Science (SCH).
https://www.nsf.gov/funding/pgm_summ.jsp?pims_id=504739&org=DMS&from=home
- Tips for New PIs
- Q&A



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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

- Upcoming due dates

- Quantum Leap Challenge Institutes: February 1, 2021
- ADVANCE: February 4, 2021
- HDR Data Science Corps: January 26 – February 12, 2021
- Smart Health: February 16, 2021
- Algorithms for Threat Detection: February 17, 2021
- National Science Foundation Research Traineeship Program: February 25, 2021



DMS
UPDATE

JANUARY
2021

BUDGET UPDATE

COVID-19 IMPACTS AND
DMS RESPONSE

AGEP-GRS SUPPLEMENTS

AGEP-GRS Supplements

- EHR supports "Alliances for Graduate Education and the Professoriate" (AGEP) and DMS participates in a current offering of Graduate Research Supplements for AGEP-associated institutions.
- See the Dear Colleague Letter NSF 20-083 for more information, including links on eligibility. DMS Contact: Stefaan De Winter(sgdewint@nsf.gov)
- AGEP-GRS student candidates must be US citizens, nationals, or permanent residents. One-year supplements are potentially renewable for up to three years.
- Some masters-degree students are eligible.

Research Experiences for Undergraduates (REU) Overview

- **Website:**

https://www.nsf.gov/funding/pgm_summ.jsp?pims_id=5517

- **Program Officers for DMS:**

Stefaan De Winter (sgdewint@nsf.gov)

Zhilan Feng (zfeng@nsf.gov)

Tiziana Giorgi (tgiorgi@nsf.gov)

Cesar Silva (csilva@nsf.gov)

Sandra Spiroff (sspiroff@nsf.gov)

- **A directory of active sites:**

http://www.nsf.gov/crssprgm/reu/reu_search.cfm

- **Submission Deadline:** August 25, 2021 (for REU Sites, apply to NSF 19-582)



Research Experiences for Undergraduates (REU) Purpose

The REU program, through both **Sites** and **Supplements**, aims to provide appropriate and valuable educational experiences for undergraduate students through participation in research.

- **REU Sites:** independent proposals
 - About 8-10 students per year, most recruited from outside the host institution.
 - Total project costs should not exceed \$1,350 per student per week.
- **REU Supplements:** part of a new or ongoing NSF-funded research project
 - One or two students from the host institution.
- **RET Component:** research experiences for K-12 STEM teachers
 - Coordinate with REU projects
 - Contact REU program officer for guidance



Research Experiences for Undergraduates (REU) Review Criteria

- Appropriateness and value of the **educational experience**: quality of research project(s), nature of the students' participation.
- **Quality of research environment**: Facilities, research mentor(s), professional development opportunities.
- Appropriateness of **recruitment/selection plans**: students from underrepresented groups, outside the host institution, institutions with limited STEM research opportunities.
- Quality of plans for **student preparation** and for **follow-through**.
- Appropriateness of the **budget**, effectiveness of the plans for **project management** and **evaluation of outcomes**.
- For renewals: **effectiveness of the previous Site**.



Smart Health and Biomedical Research in the Era of Artificial Intelligence and Advanced Data Science (SCH) Overview

- **Website:**
https://www.nsf.gov/funding/pgm_summ.jsp?pims_id=504739
- **Program Officer for DMS:**
Huixia (Judy) Wang (huiwang@nsf.gov)
- A cross-cutting program supported by NSF and NIH (NSF 21-530)
- **Goal:** support high-risk, high-reward research in basic science to address pressing questions in the biomedical and public health communities
- The program funds:
 - ≤ \$1,200,000 total cost, up to 4 years
 - Interdisciplinary teams
 - Contribution to fundamental science from at least two NSF sciences: computer and information science, engineering, mathematics/statistics, behavioral and/or cognitive science



Smart Health and Biomedical Research in the Era of Artificial Intelligence and Advanced Data Science (SCH)

More information

- **Some research themes**

- Information infrastructure
- Transformative data science
- Novel multimodal sensor system
- Effective usability
- Automating health
- Medical image interpretation
- Unpacking health disparities

- **Submission Deadlines:** February 16, 2021; November 10, 2021; November 10, 2022

- **More information---Recorded webinar and presentation slides:**

https://nsf.gov/events/event_summ.jsp?cntn_id=301832&org=NSF

- **Send a **one-page summary**** about the IM of the project to:

sch-correspondence@nsf.gov



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Tips for new PIs: Basics of the Process

- **NSF:** funding opportunity
- **PI:** submit proposal to program
- **Program officers:** arrange for review (panel, ad-hoc, internal)
- **Reviewers / panel:** give advice
- **Review criteria:**
 - Intellectual merit
 - Broader impacts
- **Program Officers:** make recommendation
- Higher level review
- **PI:** receives award or declination with feedback
- Whole process: 6 months for most decisions



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Tips for new PIs: Do this!

- Read & follow PAPPG & solicitation
- Start early / proofread carefully
- Put your research in context
- Do the background work
- Be specific:
 - “Question”
 - “Conjecture”
 - “Target Theorem”
 - What tools & approaches you’ll use
 - Also for Broader Impacts!
- Be ambitious but realistic
- Write for the reviewers
 - Experts in your general field
 - Reading **a lot** of proposals
- Get help / mentorship
- Read reviews & other feedback
- Answer:
 - Why this research?
 - Why you?
 - Why now?



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Tips for new PIs: Don't do that!

- Start at the last minute
- Be vague:
 - “Investigate”
 - “Explore”
 - “Study”
- Dive into technicalities
- Fake it / lip service
 - “potential applications to cryptography”
 - “mentor students from under-represented groups”
- Do the next obvious step
- Neglect broader impacts
- Misunderstand broader impacts
 - Not applications to other areas of math or science
 - Not everyday duties of faculty
 - Not collaborating with women

Most of all, don't give up!



Virtual Office Hour: Questions from registration

1. General topic:
 - A. How is DMS handling conference funding (both awarded grants & new ones)?
 - B. Has DMS moved to research.gov? Do I need to do my grant reporting via research.gov?
 - C. Any changes to grant submission process or deadlines due to COVID-19?
 - D. How are grants impacted that budgeted for travel that cannot be used during the pandemic?
2. REU program:
 - A. Impact of COVID-19 on existing & new REUs?
 - B. How would an interdisciplinary REU be reviewed?
 - C. What can early career researchers (first year faculty) be doing now to prepare themselves to apply for REU funding?
3. SCH program:
 - A. Is preliminary data required?
 - B. Are clinical researchers required in the team?
 - C. Opportunities for AI, machine learning, etc.?
4. New PIs:
 - A. Are there any upcoming (or recurring) funding opportunities specifically for early career faculty?
 - B. Typical timeline from submission to final decision?
 - C. Is there any difference in rating CAREER and regular proposals?



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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
- 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=2020
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