Division of Mathematical Sciences (DMS)

Virtual Office Hour

Date: December 15, 2020

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)

Virtual Office Hour

Welcome!

Program Directors in attendance today

- Juan C. Meza (Division Director)
- Yuliya Gorb and Marian Bocea (Designing Materials to Revolutionize and Engineer our Future)
- Leland Jameson and Pawel Hitczenko (Algorithms for Threat Detection)
- Andrew Pollington (Secure and Trustworthy Cyberspace)
- 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

Division of Mathematical Sciences (DMS)

Virtual Office Hour

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: January 21, 11am EST

Topics include: REU, Smart Health, tips for new PIs.
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.
- Designing Materials to Revolutionize and Engineer our Future (DMREF).
  https://www.nsf.gov/funding/pgm_summ.jsp?pims_id=505073&org=DMS&from=home
- Algorithms for Threat Detection (ATD).
  https://www.nsf.gov/funding/pgm_summ.jsp?pims_id=503427&org=DMS&from=home
- Secure and Trustworthy Cyberspace (SaTC).
  https://www.nsf.gov/funding/pgm_summ.jsp?pims_id=504709&org=DMS&from=home
- Q&A

Division of Mathematical Sciences (DMS)
Virtual Office Hour
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 target dates
  - HDR Institutes: January 21, 2021
  - DMREF: January 25, 2021
  - NSF INCLUDES: January 26, 2021
  - Quantum Leap Challenge Institutes: February 1, 2021
  - ADVANCE: February 4, 2021
  - HDR Data Science Corps: January 26 – February 12, 2021

DMS Update

December 2020

- Virtual Office Hours Goals
- Budget Update
- COVID-19 Impacts
- DMS Program Deadlines
- MSPRF, Graduate Students

Division of Mathematical Sciences (DMS)

Designing Materials to Revolutionize Our Future (DMREF)

- **Website:** https://www.nsf.gov/funding/pgm_summ.jsp?pims_id=505073
- **Program Officers for DMS:**
  - Marian Bocea mbocea@nsf.gov
  - Yuliya Gorb ygorb@nsf.gov
- **Submission Deadline: January 25, 2021 (apply to NSF 21-522)**
  - Submission Window: January 11 – January 25, 2021
  - Expect proposals from well-integrated, interdisciplinary teams that draw on expertise in multiple areas including experiment, computation, and theory
  - Proposals will be co-reviewed by other divisions in the areas of science and engineering where impacts of the projects are expected
  - Follow the guidelines in the DMREF program solicitation NSF 21-522 and the PAPPG: https://www.nsf.gov/pubs/policydocs/pappg20_1/nsf20_1.pdf

Division of Mathematical Sciences (DMS)
Algorithms for Threat Detection (ATD)

Program Webpage:
https://www.nsf.gov/funding/pgm_summ.jsp?pims_id=503427&org=DMS&from=home

DMS Program Officers:

- Pawel Hitczenko (phitczen@nsf.gov)
- Leland Jameson (ljameson@nsf.gov)

Proposal Deadline: February 17, 2021

- In the current ATD portfolio we are a bit short on research topics that would be considered mathematics or applied mathematics.
- Student training housed in the mathematical sciences will have an advantage over those that are not (as per **Additional Review Criteria** in the ATD Solicitation NSF **20-531**).

Division of Mathematical Sciences (DMS)

Secure and Trustworthy Cyberspace (SaTC)

Program Webpage: https://www.nsf.gov/funding/pgm_summ.jsp?pims_id=504709

- An across-NSF flagship program in security (encompassing 5 NSF directorates and administered by CNS in CISE) with a budget of around $69M
- DMS involved through work cryptography, statistics and probability, and QIS. A recent concentration is in post quantum crypto schemes and the NIST competition.

CISE Lead Program Officer: Jeremy Epstein

DMS Program Officers:

- Andrew Pollington (adpollin@nsf.gov)
- Lee Jameson (ljameson@nsf.gov)

Proposal Window:

- Small (up to $500k) Medium ($500k to $1.2M): Anytime to Sept. 30, 2021
- Large (>$1.2M) January 21 – 29, 2021

Division of Mathematical Sciences (DMS)
Secure and Trustworthy Cyberspace (SaTC)

- Welcomes proposals that address cybersecurity and privacy and draw on expertise in one or more of these areas: computing, communication and information sciences; engineering; education; mathematics; statistics; and social, behavioral, and economic sciences.
- Proposals that advance the field of cybersecurity and privacy within a single discipline or interdisciplinary efforts that span multiple disciplines are both welcome.
- DMS topics of interest:
  - mathematical foundations of cryptography, including the development of secure post-quantum cryptographic methods such as those based on lattices, codes, multivariate functions, and super-singular isogenies;
  - cryptographically effective multilinear maps;
  - novel applications of statistics and probability to security and privacy problems, such as intrusion detection and differential privacy.

Division of Mathematical Sciences (DMS)

Virtual Office Hour: some questions from registration

1. General topic:
    A. Trends for NSF and DMS in 2021 and beyond?
    B. No-cost extensions and deadline extensions due to COVID?
2. DMREF program:
    A. Specific focus of the program?
    B. Expectation / proportion of math & data science in a proposal?
    C. Does the program address hardware & physical layer methods?
3. ATD program:
    A. Specific target applications? (Interest in proposals that involve crime prediction, cybersecurity, etc?)
    B. Is preference given to projects that involve geospatial data?
4. Other questions:
    A. Can I send a one-page description to a program officer for feedback?
    B. Possible to apply mostly for graduate student support?
    C. How to join the review panel for a specific program?
    D. Typical timeline from submission to final decision?

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
- 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
- Next DMS Virtual Office Hour: January 21, 11am EST
  - Topics include: REU, Smart Health, tips for new PIs.
  - Questions can be submitted in advance on the registration form.