

Update on the Directorate for Mathematical and Physical Sciences

May 2, 2019



Anne L. Kinney
Assistant Director

Since last time...

Darkness Visible, Finally: Astronomers Capture First Ever Image of a Black Hole

Astronomers at last have captured a picture of one of the most secretive entities in the cosmos.

SPACE SCIENCE TALK

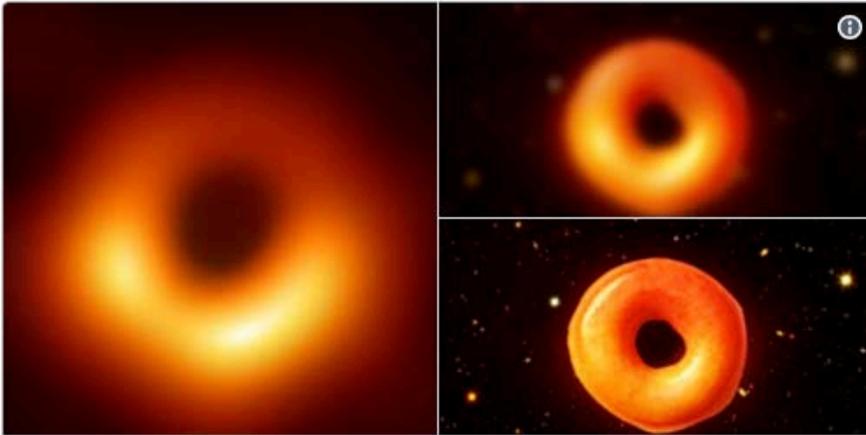
How the Black Hole Said Cheese

By Seth Fletcher, Steve Mirsky on April 29, 2019



Astrophysicist Joseph Pesce discusses significance of first-ever black hole photo

TWEET SHARE MORE



Paul Scott Canavan
@abigbat

used Photoshop's shake reduction filter on the Black Hole photo and was amazed by the result#EHTBlackHole

13.3K 10:01 AM - Apr 10, 2019

4,434 people are talking about this

This is the first photo of a black hole



By **Ashley Strickland**, CNN

Updated 12:40 PM ET, Wed April 10, 2019







NSF-Wide News

Coordinated response to shutdown

- Processing the backlog of awards
- Rescheduling cancelled panels
- Funding facilities
- Managing payroll
- Expediting clearance of new solicitations and DCLs

NSB Resolution:

“...(NSF) implemented astute measures to manage the impact on NSF operations... NSF reopened to full operations with remarkable speed..”



Budget

- FY 2019
 - Enacted: **\$8.075 billion**
- FY 2020
 - President's Budget Request released March 11
 - **\$7.066 billion** requested for NSF
 - Testimony by Dr. Córdova to House Appropriations Subcommittee on March 26



Jennifer Dionne and Mark Braverman: 2019 Alan T. Waterman awardees

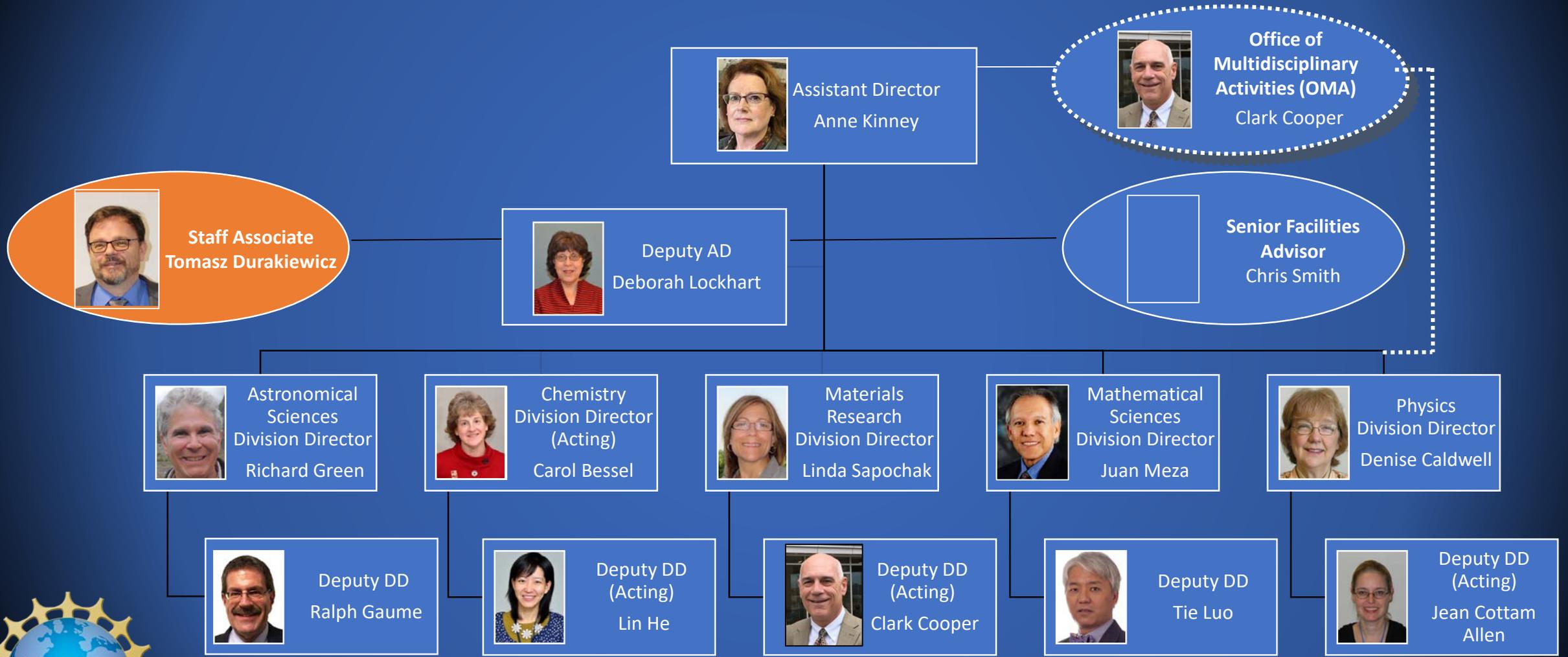


Mark Braverman
Princeton University
Computer Science
CISE

Jennifer Dionne
Stanford University
Materials Science
MPS/ENG



Directorate for Mathematical and Physical Sciences



MREFC Projects Status

- DKIST
 - Well into Integration, Testing, and Commissioning phase
 - On track for operations by June 2020
- LSST
 - M1M3 mirror now at telescope site
 - On track for operations in late-2022
- HL-LHC
 - In FY2020 Budget Request
 - Final Design Review (FDR) in September 2019
 - Projected start in April 2020

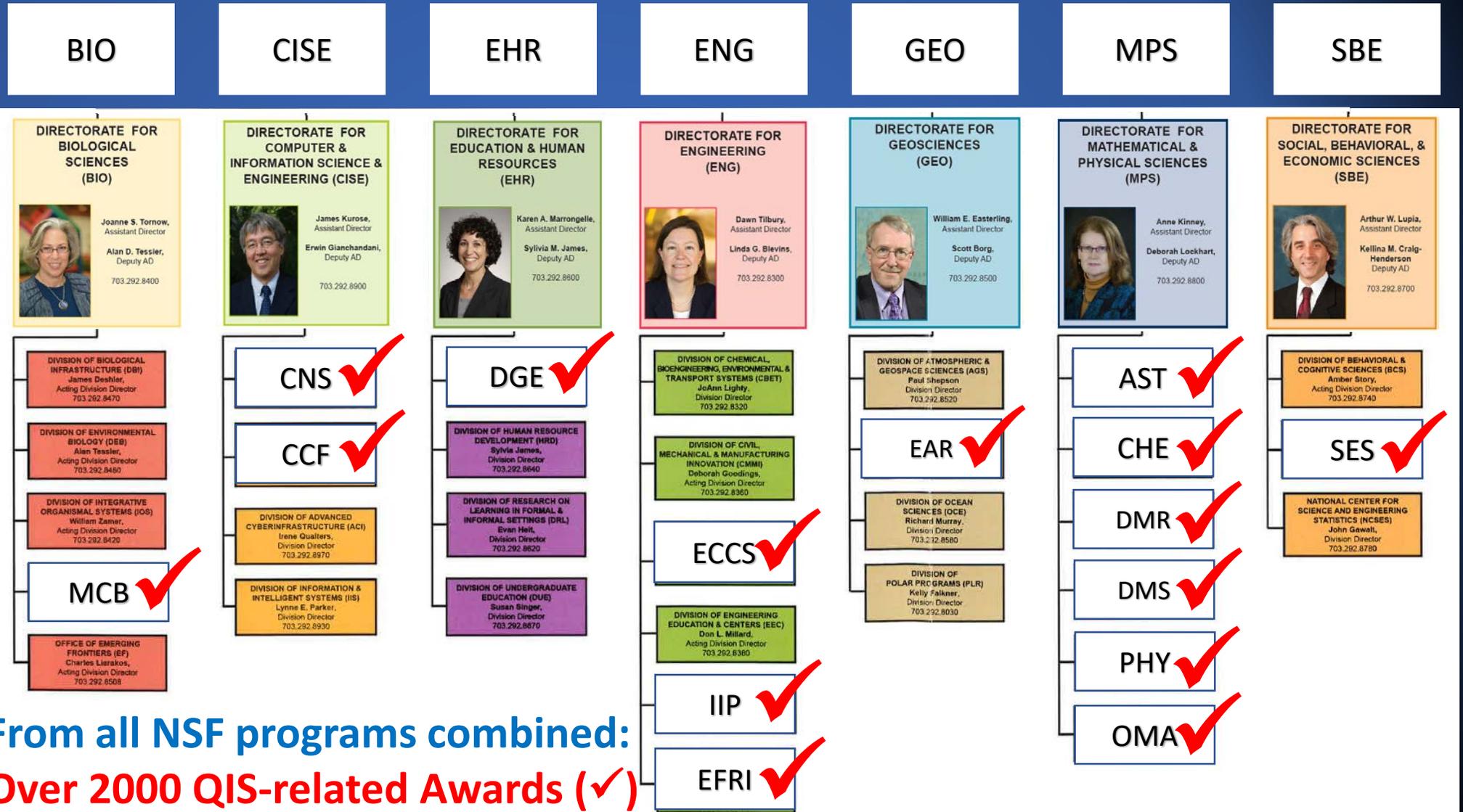


Mid-scale Research Infrastructure (MSRI)

- MSRI-1 (\$6M to <\$20M),
 - Preliminary proposal process completed
 - Invitations for full proposals sent out in April
 - Deadline for full proposals: May 20, 2019
 - Expected number of awards = 3 to 10
- MSRI-2 (\$20M to <\$70M)
 - Currently reviewing preliminary proposals
 - Invitations for full proposals to go out by mid-May
 - Deadline for full proposals: August 2, 2019
 - Expected number of awards = 4 to 6



A Note on Our Cross-Disciplinary Efforts



From all NSF programs combined:
Over 2000 QIS-related Awards (✓)



Upcoming Events

- Committees of Visitors
 - AST – June 18-20, 2019
 - PHY – June 20-21, 2019
 - DMR – September 11-13, 2019
- National Science Board Meetings
 - May 14 – 15, 2019
 - July 17 – 18, 2019
- Fall MPS AC Meeting
 - TBD November, 2019



Agenda

Day 1

- Joint Session of MPS AC and OPP AC
- Presentation and Discussion: Office of Legislative and Public Affairs and MPS Communications Team
- Prep for Meeting with NSF Chief Operating Officer
- Discussions: Small vs Large Teams and Materials Decadal Survey
- Synthetic Biology – Plans for a Possible AC Subcommittee
- Collaborations within MPS

Day 2

- Spectrum Management Update
- Update from Quantum Leap Big Idea Working Group and Steering Committee
- Discussion with NSF Chief Operating Officer
- Wrap-up Discussions



Questions for today:

- How do improve our communications strategies to best serve the mission of NSF?
- Do you recognize a need for new subcommittee on Synthetic Biology?
- What are the best mechanisms for cross-MPS collaborations?



Questions for next time:

- What are the scientific barriers, other than money, that are keeping people in your discipline from doing their best science?
- What are the strengths and weaknesses of the university structures designed for multi-disciplinary research? And how are the current NSF structures aligned with the university?
- What unique programs does NSF have to offer in your respective fields? How are they complementary to those offered by other sources/agencies? What is missing that NSF could offer uniquely?

