



NSF/AST: AAAC Update



Ralph Gaume
Division Director, MPS/AST
January 24, 2020





Outline

- AST Personnel update
- Science Highlights (AAS 235)
- AST Program Funding
 - FY 2019 actual spending
 - FY 2020 appropriation
 - FY 2021 President's Budget Request
- AST Facilities update
- Questions



AST Personnel



Division of Astronomical Sciences (AST)



Management Team



Ralph Gaume
Division Director



James Neff
Deputy Division Director
(Acting)



Craig McClure
Program Support
Manager



Donna O'Malley
Financial & Operations
Specialist

Administration



Elizabeth Pentecost
Project Administrator



Matthew Viau
Program Analyst



Allison Farrow
Program Analyst



Renee Adonteng
Program Analyst
(Pathways Student)

Individual Investigator Programs (IIP)



James Neff
Program Director
IIP Coordinator



Richard Barvainis
Program Director
Extragalactic
Astronomy &
Cosmology (EXC)



Glen Langston
Program Director
Galactic
Astronomy



Harshal Gupta
Program Director
Astronomy &
Astrophysics
Postdoctoral
Fellowships



Nigel Sharp
Program Director
AAG; CDS&E; cross-
NSF programs



Hans Krimm
Program Director
Stellar Astronomy &
Astrophysics



Peter Kurczynski
Program Director
Advanced
Technologies &
Instrumentation; EXC;
MRI



Matthew Benacquista
Program Director
REU; EXC; ESP



Kenneth Johnston
Expert
CAREER; AAG



Sarah Higdon
Program Director
AAG



Zoran Ninkov
Program Director
Advanced
Technologies &
Instrumentation

Facilities, Mid-Scale, & MREFC Projects



Christopher Davis
Program Director
AstroLab Ops. MSO,
CSDC, Gemini
Observatory



Joe Pesce
Program Director
National Radio
Astronomy Obs.;
ALMA



David Boboltz
Program Director
AstroLab Transition,
National Solar
Observatory; DKIST



Edward Ajhar
Program Director
Large Synoptic Survey
Telescope



Ashley Zauderer
Program Director
Arecibo Observatory



Richard Barvainis
Program Director
Mid-Scale Innovations Program
(MSIP)
MSRI-1, MSRI-2



Luke Sollitt
Program Director
Planetary
Astronomy



Harshal Gupta
Program Director
Green Bank
Observatory



Martin Still
Program Director
Gemini
Observatory

ESM



Jonathan Williams
Program Director



Ashley Zauderer
Program Director



Science Highlights



AAS 235: AST related events

- Other: NSF Postdoctoral Fellow Symposium
- Session 119: LIGO-Virgo 3rd Observing Run and Plans for the Future.
- Session 141: Town Hall – NSF's OIR Lab.
- Session 181: Town Hall – DKIST Commissioning and Start of Operations.
- Other: New Science Opportunities with the next generation Gemini North Adaptive Optics facility.
- Session 255: Breakthrough Science with the Atacama Large Millimeter/Submillimeter Array.
- Other: Large Synoptic Survey Telescope Open House.



AAS 235: AST related events

- Session 338: New Results from the Dark Energy Survey.
- Other: The Advanced Green Bank Telescope: Planning for the Next Decade.
- Other: Planets, exoplanets, and planet formation with the Gemini large and long programs (LLPs).
- Other: Arecibo Observatory Open House.
- Other: MSO/CSDC Open House NOAO's Transition to NSF's OIR Lab.
- Other: Gemini Open House.
- Session 383: NRAO Town Hall.
- Session 422: Town Hall – Multi-Messenger Astrophysics at NASA and NSF.
- Session 446: DESI Imaging and First Light Spectroscopy.



AST Program Funding



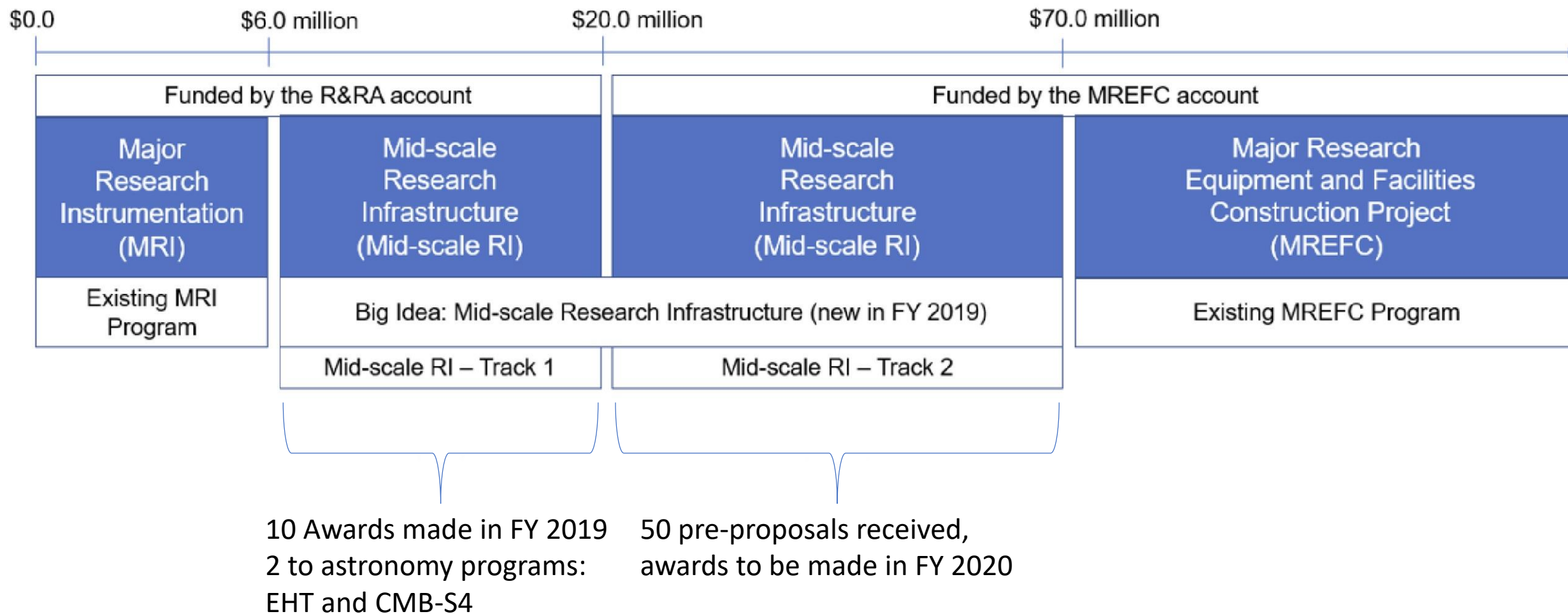
AST Grants program

- FY 2018 was a good year:
 - Astronomy and Astrophysics Grants program funded at \$51.9M, with a success rate of 22.9%.
 - Mid-scale Innovation Program (MSIP) year: funded at ~\$50M level (FY 2018/2019).
- FY 2019 also a good year (detailed breakout in the FY 2021 PBR)
 - AAG program: good year
 - MSIP (not offered this year) but funding for 2nd year of awards FY 2018 awards fully provided.
 - Mid-scale Research Infrastructure (MSRI-1): < \$20M, inaugural year, 2 astro. awards
 - ATI program: good year.
 - Windows on the Universe (NSF Big Idea) \$30M stewardship funding was planned.
 - MPS/AST, MPS/PHY, GEO/OPP
- FY 2020 appropriation:
 - AAG, could be good year.
 - MSIP year, could be a good year.
 - Mid-scale RI-2: awards planned (\$20M - \$70).



NSF-wide Mid-scale Opportunities

NSF Portfolio of Central Instrumentation and Infrastructure Implementation Programs



NSF FY 2019 Budget



- Enacted Foundation appropriation increases R&RA account by 3% (to \$6,520M).
- MREFC line re-incorporates Antarctic infrastructure; DKIST (final year, Ops begin June 2020) and LSST at requested levels.
- NSF's bill was not under consideration for passage before the end of FY 18, so operations after October 1, 2018 were under a Continuing Resolution until Dec 21st.
- Major 35-day shutdown challenge for NSF was maintaining flow of funds to facilities awardees, particularly those with Chilean labor contracts. OMB allowed cash draws for previously allocated funding, unlike the 2013 shutdown.
- FY 2019 detailed AST budget will be released and made public in the President's FY 2021 Budget Request to Congress (nominally February 2020).

NSF FY 2020 Budget



- Enacted Foundation appropriation increases R&RA 3% (to \$6,737M).
- MREFC line fully funds LSST at requested levels.
- NSF's bill was not under consideration for passage before the end of FY 19, so operations after October 1, 2019 were under Continuing Resolutions until Dec 20th.
- Relevant FY2020 Congressional Report and Explanatory language (paraphrased for brevity):
 - House: NASA should maintain current funding levels for NSF facilities wrt Planetary Defense and determine if additional funds are required.
 - Senate: Within 180 days NASA shall conduct cost and tech. eval. of installing a transmitter at Green Bank Observatory.

NSF FY 2020 Budget



- Relevant FY2020 Congressional Report and Explanatory language (paraphrased for brevity) continued:
 - House: allocate funding no less than FY 2019 levels for astronomy assets.
 - House: Committee concerned about NSF planning for the construction and development of next generation of large-scale facilities, including ground-based telescopes.
 - Senate: expects NSF to continue to support astronomy facilities and instrumentation while preliminarily preparing for upgrades and activities associated with Astro 2020. Continue to explore partnerships.
 - House & Senate: fully supports LSST construction budget request.
 - Senate: supports DKIST operations, and encourages support for existing ancillary academic partnerships that made construction successful.
 - Senate: WoU-MMA Big Idea: encouraged to support ongoing operations of existing and future astronomy and physics facilities within this budget.
 - House/Senate/Conference: MSRI-2 funded at \$45M/\$75M/\$65M in MREFC account.



AST Facility Update

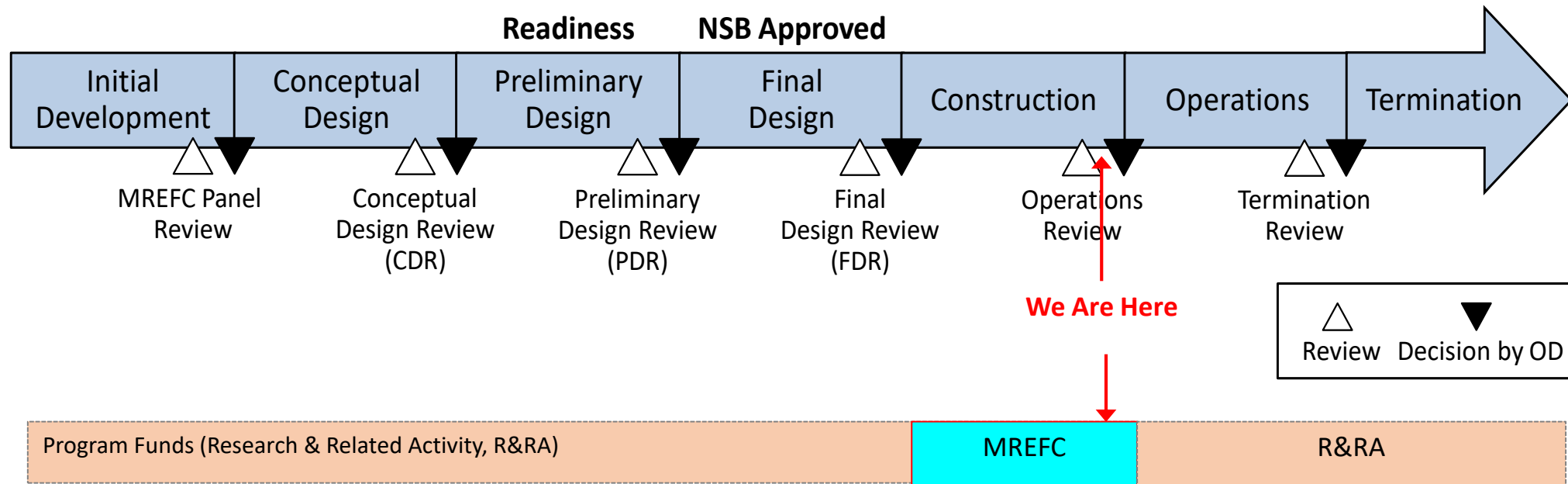
DKI Solar Telescope



DKIST Construction Webcam 2019-10-21 17:09:04



DKIST in the NSF Facility Lifecycle



DKIST Telescope



- Telescope optics in place, M1 & M2 aligned.
- Current challenges largely with instrument completion and delivery, as well as data policy.
- Commissioning of thermal control loops also a significant task.
- Still on schedule and within budget contingency.

Renaming LSST



- **Observatory: Vera C. Rubin Observatory**
- **Prime program: Legacy Survey of Space and Time (LSST)**
- **Telescope name: Simonyi Survey Telescope**

1965 Georgetown Astronomy Department



Image Credit:
Georgetown University Archives



Image Credit:
Carnegie Institute
of Washington



Questions?