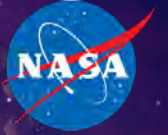


National Aeronautics and  
Space Administration



# EXPLORE SOLAR SYSTEM & BEYOND

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Director, Planetary Research Programs  
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# Planetary Science Division – ROSES 19

ROSES 19 - Program Name	Step-1 Due Date	Step-2 Due Date	Panels Held	Selections/Proposals	Selection Dates	Days from Step-2 to Select
Exoplanets (XRP)	<i>Solicited through ROSES 18 Amendment</i>					
Planetary Protection Research (PPR)	<i>Not Solicited</i>					
Emerging Worlds (EW)	<b>04/16/2019</b>	<b>06/12/2019</b>	Yes	20/100 (20%)	11/04/19	145
Development & Advance of Lunar Instruments (DALI)	<b>04/16/2019</b>	<b>06/12/2019</b>	Yes	5/44 (11%)	11/14/19	155
Solar System Obs. (SSO)	<b>04/16/2019</b>	<b>06/12/2019</b>	Yes	9/49 (18%)	1/21/19	223
MatISSE	<i>Not Solicited</i>					
Laboratory Analysis of Returned Sample (LARS)	<b>04/24/2019</b>	<b>06/25/2019</b>	Yes	7/23 (30%)	12/06/19	164
Planetary Data Archiving, Restoration, Tools (PDART)	<b>05/09/2019</b>	<b>07/11/2019</b>	Yes	17/112 (15%)	11/12/19	124
Exobiology (EXOB)	<b>05/13/2019</b>	<b>06/12/2019</b>	Yes	17/159 (11%)	11/25/19	166
Cassini Data Analysis (CDAP)	<b>05/16/2019</b>	<b>07/18/2019</b>	Yes	17/61 (28%)	11/15/19	120
New Frontiers Data Analysis Program (NFDAP)	<b>05/30/2019</b>	<b>08/01/2019</b>	Yes	11/27 (41%)	11/15/19	106
Planetary Science and Technology Through Analog Research (PSTAR)	<b>07/25/2019</b>	<b>10/10/2019</b>	Yes	4/48 (9%)	4/8/20	181
Planetary Major Equipment/Facilities (PMEF)	<b>08/20/2019</b>	<b>10/22/2019</b>	No	TBD	TBD	
Mars Data Analysis (MDAP)	<b>08/22/2019</b>	<b>10/24/2019</b>	Yes	19/101 (19%)	3/31/2020	139
Discovery Data Analysis (DDAP)	<b>08/29/2019</b>	<b>11/01/2019</b>	Yes	9/43 (21%)	4/24/2020	175
PICASSO	<b>09/20/2019</b>	<b>11/20/2019</b>	Yes	11/96 (11%)	3/20/2020	121
Early Career Award (C.19)	N/A	<b>12/02/2019</b>	Yes	6/35 (17%)	3/11/2020	100
Habitable Worlds (HW)	<b>11/15/2019</b>	<b>01/17/2020</b>	Yes	7/65 (11%)	7/10/2020	175
Solar System Workings (SSW)	<b>11/22/2019</b>	<b>02/06/2020</b>	Yes	42/372	8/12/2020	188
Lunar Data Analysis (LDAP)	<b>11/26/2019</b>	<b>02/27/2020</b>	Yes	8/31 (26%)	7/16/2020	140
Interdisciplinary Consortia for Astrobiology Research (ICAR)	<b>1/31/2020</b>	<b>05/15/2020</b>	Yes	TBD	TBD	



# Updates on ROSES 20 (and 21)

Due to budget constraints, some changes to the solicitation:

- Planetary Science and Technology from Analog Research (PSTAR) not being solicited in ROSES20 (biennial starting with ROSES21)
- Habitable Worlds (HW) not being solicited in ROSES21

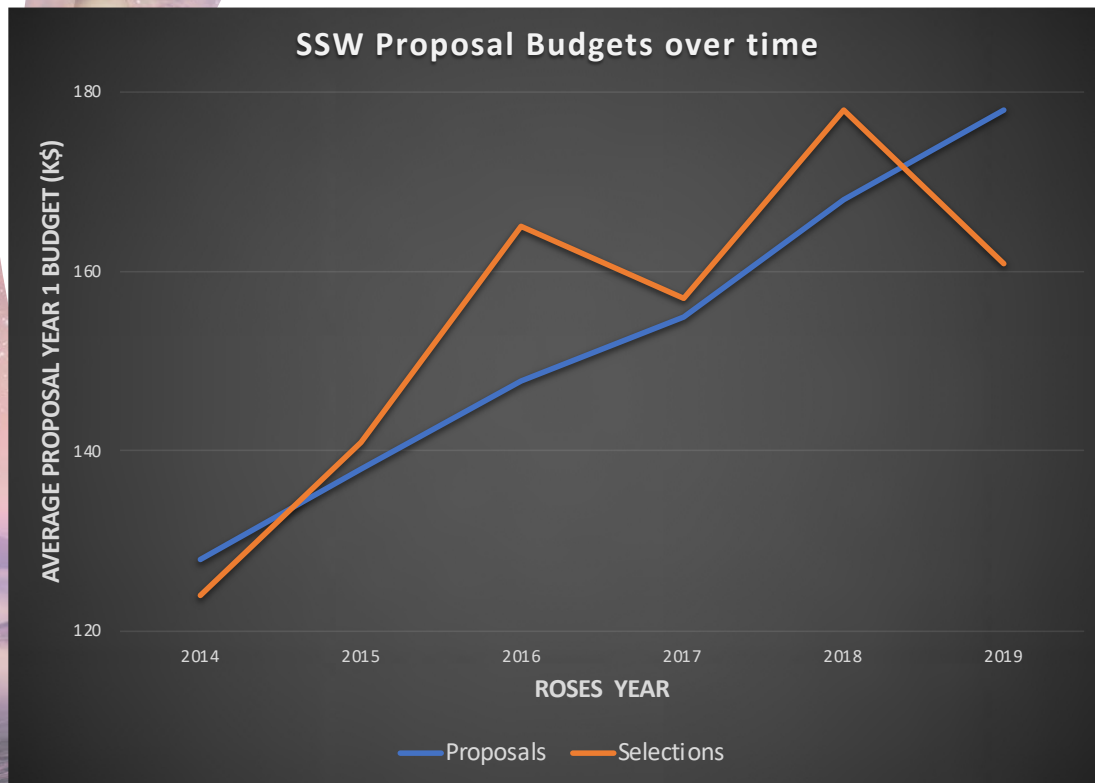
## Dual-Anonymous Peer Review (DAPR)

- HW is PSD's DAPR pilot program, but isn't happening in ROSES21
- To continue the testing/implementation, PSD will be applying DAPR to all Data Analysis Programs (DAPs) in ROSES21. This includes: MDAP, CDAP, NFDAP, DDAP, and LDAP.

ICAR: Announcements expected this fall

New RCN: "Early Cells to Multicellularity" to start up in fall as well.

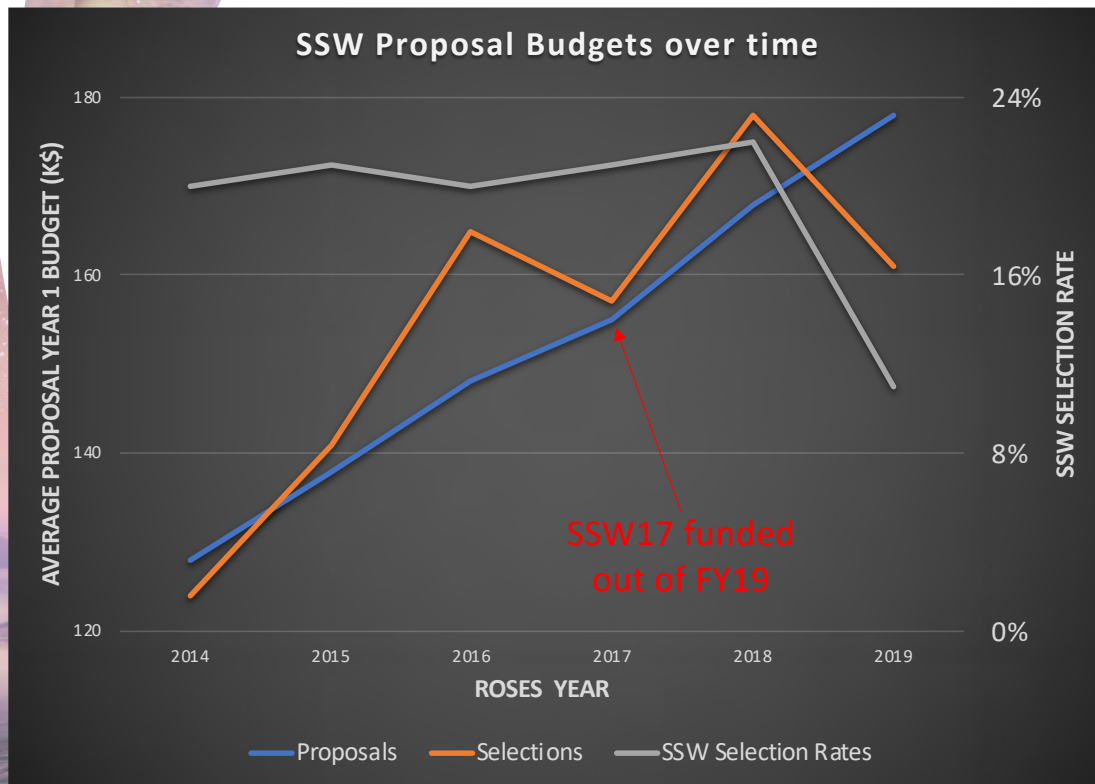
# Low Selection Rates



Solar System Workings selection rate this year is low. Why?

- The average requested budget has risen by ~40% in the last five years
- The total number of proposals has also risen (not monotonically)
- Overall, the total budget request for SSW has gone up from \$125M to \$192M (53%)

## Low Selection Rates (continued)



- Selection rates have stayed approximately constant at just over 20% (until this year) by borrowing against future years
  - For example, SSW15 was funded with FY16 funds; but there were insufficient FY18 funds for SSW17, so it got paid for out of FY19 funds
  - PSTAR18 was also skipped entirely to help balance the budget
- In addition, FY19 and FY20 both had \$10M+ hits in the final budget





# General Budget Commentary

Our primary goal is to ensure the long-term stability and sustainability of R&A programs

- We need to reduce our out-year “mortgages”
- There may be some pain for a few years as we get the long-term budget sorted, but we’re doing everything we can to minimize it
- PSD is working to reverse R&A funding trends in future budgets



# COVID

- We continue to operate in the mandatory work-at-home environment, with the same challenges faced by many members of the community
  - Childcare
  - Elder care
  - Additional stress and anxiety
  - Etc.
- The group has done a remarkable job of adapting!
- Has led to all-virtual reviews
- Planning for award augmentations to provide some relief for the effects of COVID



# Virtual Reviews

- All reviews being done virtually, and this is largely very successful
  - Most Program Officers and most Reviewers like virtual reviews (there are dissenters)
  - Generally finding it easier to find reviewers
    - Is this because they're virtual? Or because during COVID people have more time available?
  - Reduced cost for running reviews
  - Reduced carbon footprint
- We will be continuing to run a significant fraction of reviews virtually post-COVID (this is true for all of SMD)





# Augmentations

- SMD will have a call opening October 1 for augmentations to existing awards to help with COVID-related issues
  - Top priority for augmentations will be students and postdocs
  - Second priority, early-career and soft money folks
  - Then everyone else
- Requests **must** be to address COVID-related issues (not to hire a new postdoc, or to carry out new research, etc.)
- Funding for augmentations will be coming out of R&A funds for new awards (~15% of R&A funds for new awards)
- A call is out now for expressions of interest, which we'll use to gauge interest and impact, and to plan for the budget hit
  - **Please** submit an EOI if you plan on requesting augmentation



# Planetary Facilities

We are developing a detailed plan for Planetary Facilities:

- Aaron Burton on detail from JSC is helping to fill out the details
- There is insufficient funding within R&A to support the addition of a new ~\$10-15M program such as this. Therefore on hold pending future budgets
  - We are developing the plan with the intent to roll it out quickly if/when the funding becomes available
- Rolling back changes made to Planetary Major Equipment and Facilities (PMEF) call to essentially keep it as it was.
  - Planned out future year budgets to provide a better and more stable funding line for PMEF



## Gaps RFI

All of the white papers received have been evaluated, and a set of recommendations is being put together for the Science Mission Directorate. More on this next time....



## No Due Date (NoDD) Programs

SMD, PSD, and the R&A program are all facing significant challenges.

Within the R&A program, we've been looking for ways that some of these could be addressed. One thing that we can do to alleviate some of the issues is move to programs without due dates. This has been done successfully by NSF, DoE, etc.



# NoDD: Potential to Address Problems (I)

1. The COVID problem: many requests to shift due dates, and even with shifts that we have made, still have people missing them
  - This happens fairly often, due to hurricanes, floods, etc. and creates issues with trying to decide which programs to shift, and how shifting them might affect other programs
2. Program Scientist Workload
  - Program officers have high-amplitude, long-duration spikes centered on reviews; this has always created challenges, but those have been highlighted by COVID
3. Budget Flexibility
  - We start with a budget plan for the year, but that plan changes in the course of the year when we actually get the real budget. Changes in budget can disproportionately affect late-year programs.



## NoDD: Potential to Address Problems (II)

### 4. Submissions from Small Institutions

- Small institutions can face additional challenges to submissions (e.g. having a single person serving as AOR, lack of institutional processes to support proposals)

### 5. Selection Rates

- Selection rates across nearly all PSD R&A programs have been dropping. Evidence shows that NoDD programs have reduced proposal pressure





## NoDD: What exactly is it?

In ROSES21, we plan on running some programs with no due dates: proposals may be submitted whenever they're ready, and we will change the way we manage reviews to match: when/how reviews are run will likely be program-dependent

- The details of implementation are being worked out now.
- We will be seeking feedback through the PAC on our implementation plan, once we have more details in place
- Programs which may be NoDD in ROSES21:
  - Exobiology
  - EW
  - LARS
  - PDART
  - SSW
  - PICASSO
  - SSO



## NoDD: Implementation Details (I)

- All programs have at least one review per year
  - Combined with virtual reviews, we may be able to spread reviews out much more evenly across the year
- Particularly for large programs, panels may be broader in scope
  - Specific expertise provided through external reviews
    - External reviewers may need to step up their game!
    - Looking at honoraria for external reviewers
  - Need to work more with reviewers to avoid conflicts: “Do you plan on submitting to this program in the next 6 months?”



## NoDD: Implementation Details (II)

- More care required in managing individual program budgets across the year and across multiple years
  - Will need to plan ahead for the fact that reviews don't necessarily happen annually
- One-year moratorium on resubmission of a proposal (from time of submission, not time of review)
- We expect that the average time to notification will not change, but individual proposers may have a longer wait.
  - This is probably the single biggest challenge to address in implementation



## NoDD: Anticipated Benefits for PIs

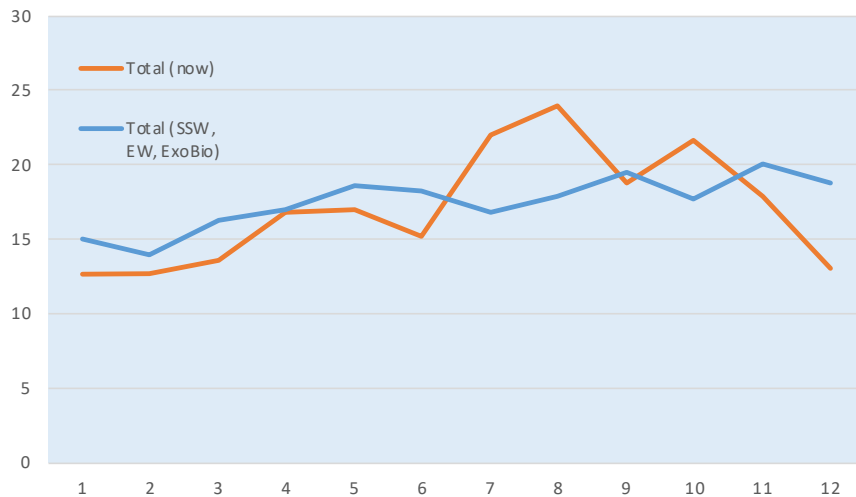
- Flexibility!
  - Provides relief for PIs as challenges (illness, natural disasters, teaching loads, etc.) arise
  - Separates inspiration from proposal cycles
    - Have a great idea? Write and submit, don't wait until the next due date...
  - Gives PSD more flexibility to respond quickly when there is urgency
  - Removes some of the burden from institutions
    - Particularly for smaller institutions with limited proposal support
    - May have a positive impact for Diversity and Inclusion
  - Removes concerns about due dates conflicting with each other, with reviews, conferences, etc.

# NoDD: Anticipated Benefits for PSD

- Flexibility!

- Allows Program Officers (POs) to spread out their workload better over the year
- Allows POs to better manage commitments to multiple programs
- Budget: Spreads out funding needs more evenly throughout the year
  - Better and more active management of overall budget for R&A!
- May allow for more risk acceptance with proposals
- Anecdotally, quality of proposals increases!

The Difference NoDD makes





## NoDD: Consultations with NSF

In thinking about this, we talked with multiple folks at NSF (including those who did not support). Some of the things we learned from them:

- Significant reduction in proposal pressure: 20%-50% reductions depending upon the program!
- Anecdotally, **increases** in the number of proposals from small institutions
  - This could also be tied to Diversity, Inclusion, and Equity efforts at NSF
- Most PIs have had positive responses
- Most POs have had positive responses: "We'll never go back [to due dates]"
- The major challenge identified by NSF folks:
  - Working with reviewers to avoid conflicts of interest





## NoDD: Possible downsides for PIs

- Some people won't like it
  - No action we take will be universally loved
  - Some people like working to deadlines
  - Communication, Communication, Communication
- Unlucky timing could result in a longer wait for some PIs in getting results from a submission
  - For some people, it may be faster!
  - This will be a focus area for an implementation plan
  - Communication



## NoDD: Possible downsides for POs

- There may be concerns about budget availability late in the fiscal year
  - Requires more forward-planning for budgets and awards
- Will require additional diligence in recruiting reviewers
- May result in some additional workload for POs
  - Anecdotally, NSF thinks loads have gone up slightly (~5%?)
  - This is at least partially offset by the flexibility offered



## NoDD: Next Steps

We have just established an Implementation Working Group

- Will be developing a plan for implementation over the next month or two
- Need to consider the details for both large and small programs

When we have details, seek feedback

- Have the plan internally vetted within SMD
- Ask the PAC for comments

Anticipate being ready/able to roll out NoDD for these programs with ROSES21



# ISFM Review

We are in the process of carrying out the first review of PSD ISFMs

Each ISFM required to submit a report detailing progress to date, how their work impacts the community, plans for the remainder of the ISFM period, etc. Reports have two sections:

- Part 1: Science
- Part 2: Programmatic



# ISFM Review: Science

Purpose of Part 1: to discuss the science of the ISFM, productivity, etc.

- Each ISFM progress report reviewed by at least 1 (usually 2+) external reviewer
- Three panels of community members reviewed and provided comments and grades
- Overall, the reviews were very positive
  - There were challenges associated with this being the first-ever ISFM review



# ISFM Review: Programmatic

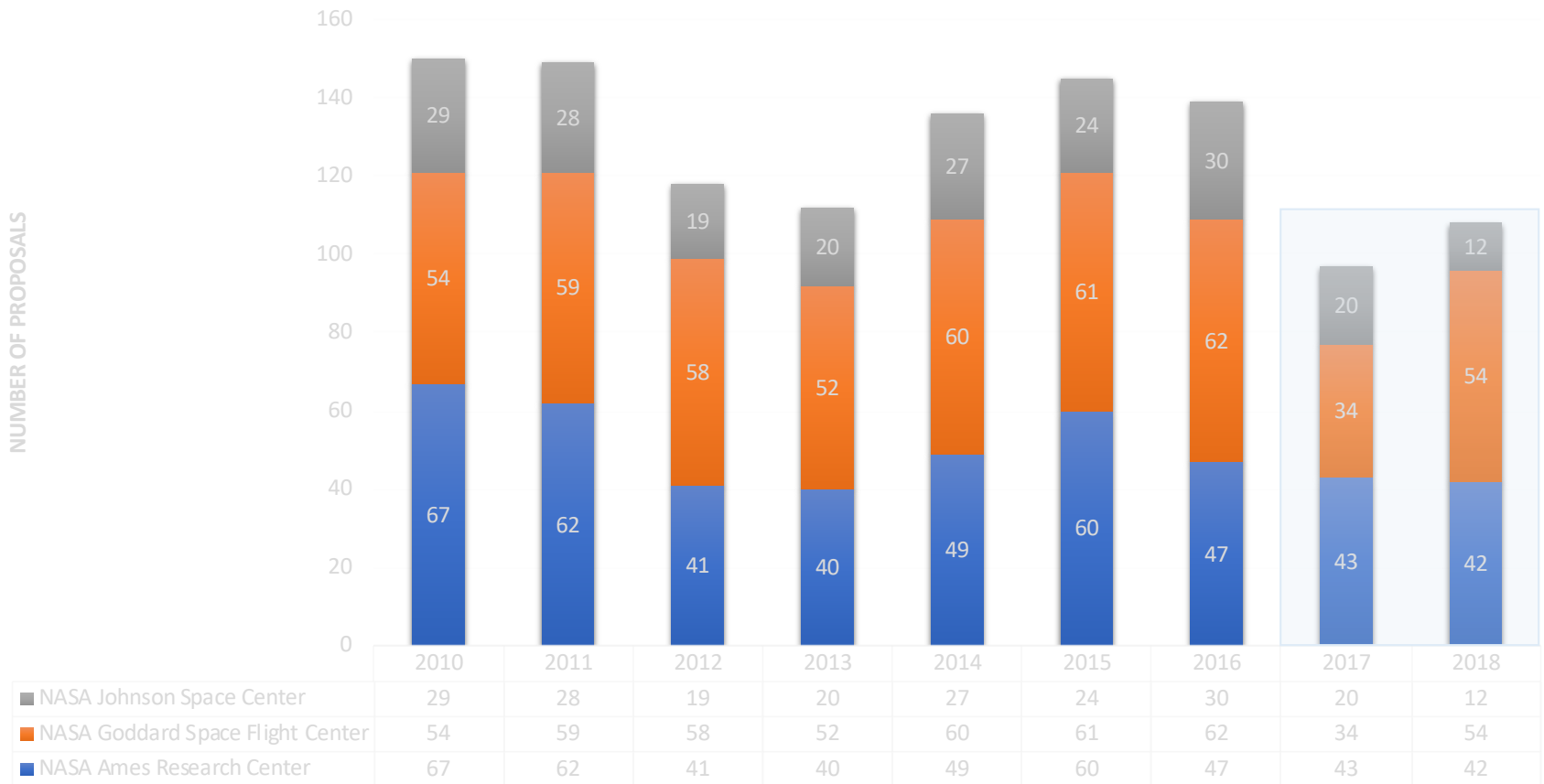
Purpose of Part 2: Programmatic information such as ability to have funding spent, impact on number of proposals submitted, additional community service, etc.

- Review of this part being carried out internally and in progress. Some early takeaways:
  - Managing the money is a challenge for ISFMs. But:
    - Government shutdown last year
    - COVID this year
    - And ISFMs are not grants!
  - Fewer proposals from the Centers (!)
  - More participation in panels and other forms of community service.



# ISFM Review: Proposals from Centers

Center led proposals





# ISFM Review: Proposals from Centers

## Quick takeaways:

- FY19 data is coming soon... this analysis is preliminary, and conclusions drawn from the data thus far are therefore potentially suspect.
- The target was a 10% reduction in the number of proposals from Centers. Comparing the average number of proposals from 2010-2016 to that of 2017-2018:
  - ARC: Down 19% (across all of SMD, down 17%)
  - GSFC: Down 24% (across all of SMD, down 20%)
  - JSC: Down 37% (across all of SMD, down 41%)
- We expect the numbers to go up this year: while ISFMs are planned to continue through FY21, we expect to select new ISFMs to start in FY22, so Center scientists need to “hedge” against non-continuation of their ISFMs



# Diversity, Inclusion, and Equity

We have been looking hard at the R&A program to see how we can improve in this area; presentation coming up shortly from Meagan Thompson.



# New People

Since our last meeting, there have been some significant changes in PSD R&A staffing:

- Three new Civil Servants:
  - KC Hansen
  - Lindsay Hays
  - Megan Ansdell
- Also joining us
  - Amanda Nahm
  - Aaron Burton (detail from JSC)
  - David Smith (detail from ARC)
  - Catherine Walker (NPMP, half-time in PSD and half in the Office of the Chief Scientist)

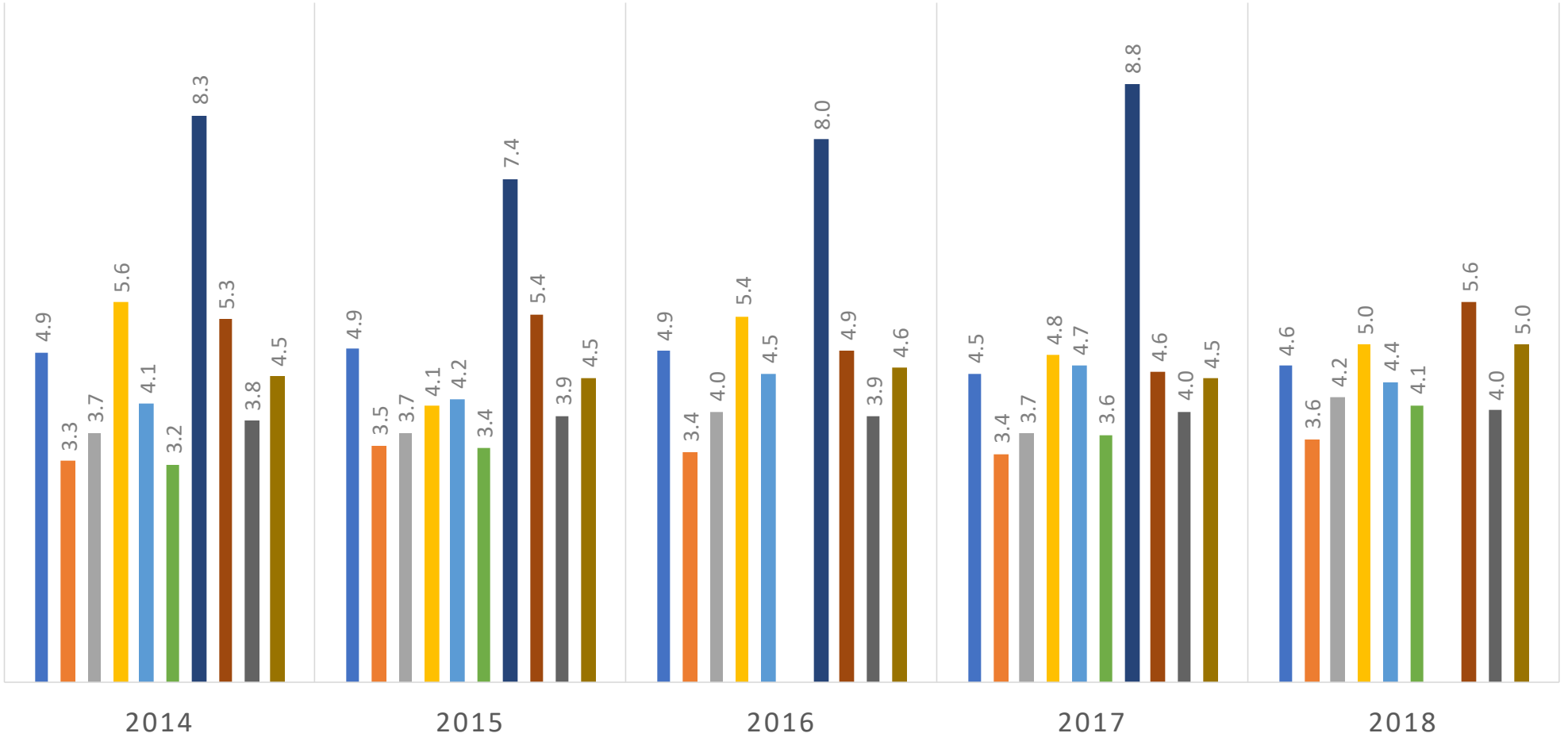


# Backup Slides



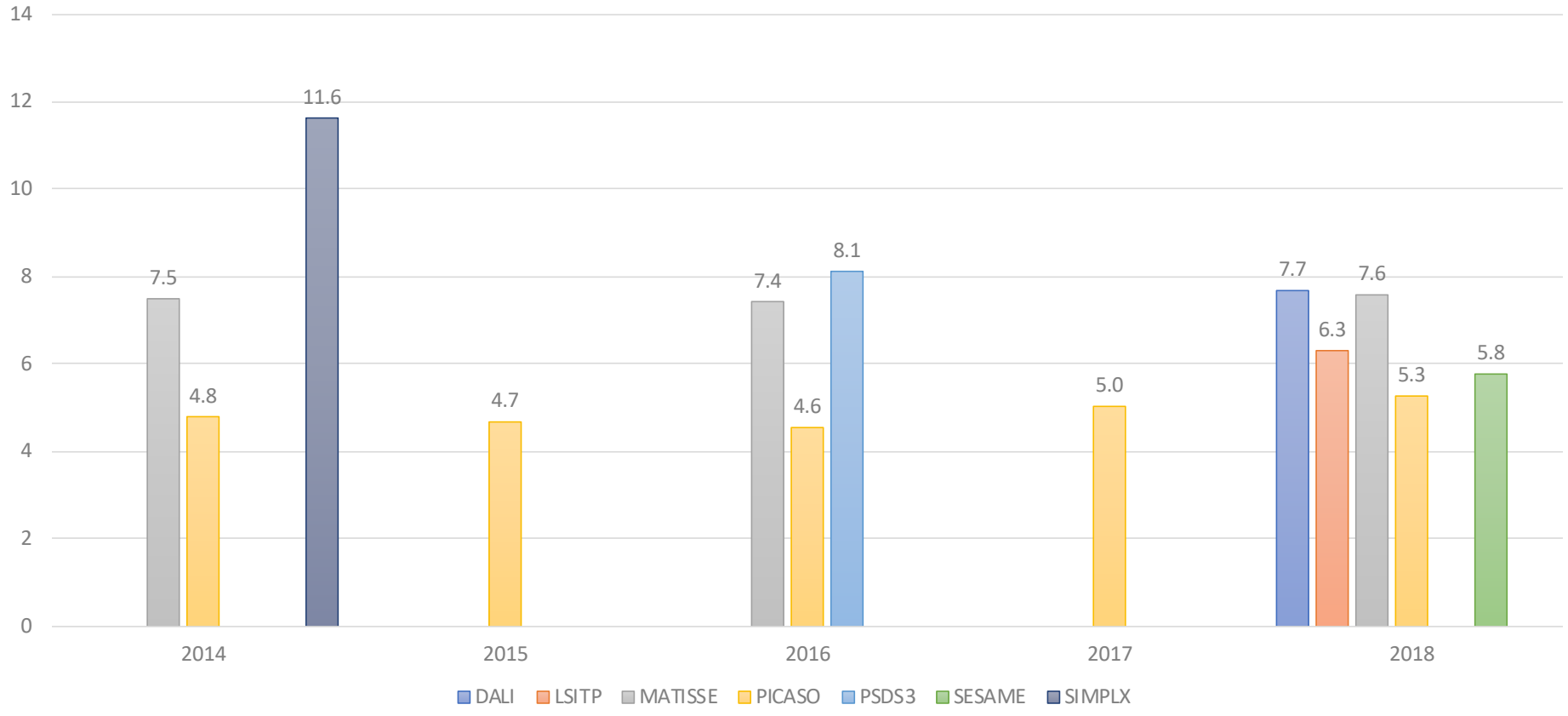
## TEAM SIZE - CORE RESEARCH

EW EXO(B) HW LARS PDART PPR PSTAR SSO SSW XRP





Team size - Instrument/technology



Team Size - DAPS

