Precursor Science Workshops

Into the Future!

Dr Terri Brandt
NASA Astrophysics, Program Scientist
Wed 20 July 2022
APAC Meeting

Spaceunicorn credit: G. Tremblay
Graphic via S. Domagal-Goldman

Goals:

1. Help NASA Astrophysics start to scope the upcoming Precursor Science ROSES call for proposals
2. Help the community start to understand and be able to write proposals for the upcoming Precursor Science ROSES call
3. Do so inclusively and continue learning how to act more inclusively

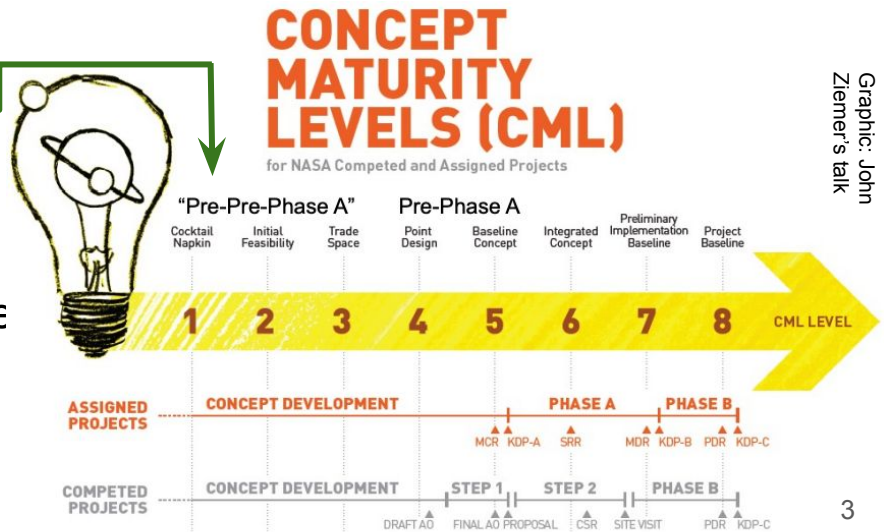
We learned…

Precursor Science: Science investigations that inform future mission architecture/trades, ideally reducing design and/or development risk.
(Not the Future Great Observatories' (FGOs') science goals.)

- Integral to mission maturation that includes technology & programmatics
- Of any type! Theory, laboratory astrophysics, data analysis, observations, …
- Part of larger APD FGO Maturation Program; started now for ROSES call

Timeline: we are not yet formally even in pre-pre-Phase A for the FGOs

- Use Large Mission Studies and others as resources that will help address issues of mission implementation via identifying science gaps that precursor science investigations will begin to fill.



Graphic: John Ziemer's talk

CL# 13-4156; See Refs. [2-5]

We learned…

Inclusion in Future Great Observatories Panel:

- **Dr Dara Norman:** "PIs[' inclusion plans] rarely tackle the most difficult issues surrounding the themes we covered, such as evaluating the inclusivity of the environment." *Upcoming toolkit of inclusive collaborative practice!*
- **Dr Keivan Stassun:** upcoming National Academies' report on increasing competed space missions' diversity of leadership
- **Dr Marcel Agüeros:** how little has changed since 1974 (Jenkins oral history)
- **Dr Christa Porter:** importance of data disaggregation, hidden labor, the lack of substantive institutional support, and *how important it is to enact, not just espouse,* the changes needed.
- **Dr Sharla Alegria:** focus on pipeline problems leads to explaining limited representation as a deficit of skill rather than a problem of exclusionary principles. This couples with individual biases such as the presumption of incompetence. *Address pipeline problems.*

Accountability: is for **everyone**!

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More work to be done in all areas

⇒ Now that we have a better understanding of where we are and where we want to go, we can work collaboratively on these in preparation for the next Precursor Science Workshop.

Thanks!

To the:

- Speakers
- Facilitators
- Scientific Organizing Committee
- Local Organizing Committee
- Support staff: Jen Blumberg and Ray Lemus

⇒ and especially to YOU, our Participants!

Scientific Organizing Committee (SOC):

Terri Brandt, NASA HQ
Julianne Dalcanton, Flatiron Institute
Courtney Dressing, Berkeley
Ann Hornschemeier Cardiff, NASA GSFC
Erin Kara, MIT
Janice Lee, NOIRLab
Michael Meyer, University of Michigan
Eric P. Smith, NASA HQ
Randall Smith, Harvard, CfA
Keivan Stassun, Vanderbilt University
Grant Tremblay, Harvard, CfA
John Ziemer, JPL

Parry Gripp & Brianne Drouhard

Logistics Organizing Committee (LOC):

Jen Blumberg, JPL
Terri Brandt, NASA HQ
Valerie Connaughton, NASA HQ
Doug Hudgins, NASA HQ
Peter Kurczynski, NASA GSFC
Eric Mamajek, JPL
Eric P. Smith, NASA HQ
Karl Stapelfeldt, JPL
Eric Tollestrup, NASA HQ
Sanaz Vahidinia, NASA HQ
Brian Williams, NASA GSFC

Next Steps

- **Summary of Workshop I**
  - Led by Program Chief Scientists: ExEP (Karl Stapelfeldt, Eric Mamajek); COR (Peter Kurczynski), PCOS (Brian Williams)
  - First workshop summary

Community

- Develop **Precursor Science Needs**:
  - Community invited to inclusively self-organize to improve your precursor science ideas, eg distinguishing precursor science vs preparatory, follow-up, etc, that will inform ROSES call
  - References:
    - Workshop I products & slack, eg brainstormed 4 FGO +7 Science spreadsheets
    - large mission studies, products, personnel, and others who'd like to volunteer
- Develop **Notional Science Gaps**:
  - Led by Program Chief Scientists with respective Program Analysis Groups (PAGs).
  - Request: Program Analysis Groups develop the gap lists further for delivery at the 2nd workshop (a want, not a must, since the ROSES call will be released on schedule)
  - Resources: ExEP Science Gaps as an Example presentation & ExEP Science Gap list; Science Gaps breakout sessions

Next Precursor Science Workshop (II)

Goals:

- Further develop Precursor Science ideas:
  - To inform ROSES call (anticipated late 2022)
  - To facilitate community collaboration and inclusion of new people
- Further develop Science Gaps related to FGOs
- Create more connections with technology!

Logistics: 7-9 Sep 2022

- Fully virtual
- Indicate your plans to attend and sign up for email updates today!

Next Precursor Science Workshop (II)

Agenda Topics: (in progress)

- Framing work and current understanding
- Proposal writing
- Inputs to the ROSES call
- Small-group breakouts:
  - Activity to reinforce Day 1 learning on how to build an inclusive and high-functioning team
  - Developing science ideas and related science gaps
- Precursor science into GOMaP process
- Summary and next steps.