Meeting Minutes of the

Astronomy and Astrophysics Advisory Committee

26-27 September 2022

Members Attending:

Wenda Cao
Kyle Dawson (Chair)
Sarah Horst
Alexie Leauthaud
Nikole Lewis
Britt Lundgren
Raffaella Margutti
Michael McCarthy
Willie Rockward
Keivan Stassun (Deputy Chair)
Abigail Vieregg
Ann Zabludoff

Agency personnel:

Martin Still, NSF-AST
Carrie Black, NSF-AST
Harshal Gupta, NSF-AST
James Neff, NSF-AST
Donna O'Malley, NSF-AST
Renee Adonteng, NSF-AST
Ashley VanderLey, NSF-AST
Allison Farrow, NSF-AST
Andrea Prestwich, NSF-AST
Andreas Berlind, NSF-AST
Dave Boboltz, NSF-AST
Elizabeth Pentecost, NSF-AST
Chris Davis, NSF-AST
Matt Viau, NSF-AST
Craig McClure, NSF-AST
Tanner Abraham, NSF-AST
Zoran Ninkov, NSF-AST
Vyacheslav Lukin, NSF-PHY
Saul Gonzalez, NSF-MPS
Edgar Huertas, NSF-MEM

Jedidah Isler, OSTP
Kei Koizumi, OSTP

Mark Clampin, NASA
Kartik Sheth, NASA
Bill Latter, NASA
Sangeeta Malhotra, NASA
Natasha Pinol, NASA
Eric Smith, NASA
Dominic Benford, NASA
Alistair Funge, NASA
Antonino Cucchiara, NASA

Kathy Turner, DOE
Bryan Field, DOE
Patricia Mahoney, DOE
Glen Crawford, DOE
Elgin Leary, DOE

Yi Pei, OMB

Ashlee Wilkins, HSST Committee
Sara Barber, HSST Committeee

Others:

Marcia Smith, SpacePolicyOnline.com
Vivian O'Dell, U Wisconsin-Madison
Lynsey Fitzpatrick, UC San Diego
Karin Oberg, CfA-Harvard
Etienne Dauvergne, ESA
Hunter Moore, NASEM
Nicholas White, GWU
Tammy Dickinson, Science Matters
Mark Dickinson, NSF's NOIRLab
Inger Jorgensen, NSF's NOIRLab
Lewis Groswald, Lockheed Martin
Lamont Di Biasi, L Di Biasi Associates
Nick Saab, Lewis-Burke Associates
Griffin Reinecke, Lewis-Burke Associates LLC
Jeff Foust, SpaceNews
Francesco Bordi, The Aerospace Corp.
Lee Curtis, AURA
Steven Berukoff, AURA
Jean Eisen, AURA
Alexandria Witze, Nature
Julie Davis, AAS
Bethany Johns, AAS
Richard Rogers, Stellar Solutions, Inc.
Linda Karanian, Karanian Aerospace
Raha Hakimdavar, Ball Aerospace
April Olson, Ball Aerospace
Rachel O'Connor, Ball Aerospace

DAY 1; SEPTEMBER 26, 2022

11:06 PM EDT

Welcome, Opening Remarks and Introductions – Martin Still, NSF [1]

Kyle is taking over as AAAC chair from Priya. New AAAC members were introduced. OSTP is still pending the name of their new committee member.

Kyle Dawson: Thanks all for joining the meeting. Introduces slides for onboarding new committee members. Hope to keep updated as a living document.

Martin Still: Asks Allison if there were any additional administrative instructions. None noted. A presentation on the Roles & Responsibilities of the AAAC (see presentation slides) was provided.

Abigail Vieregg: Says she hopes that the next meeting can be in person.

Martin Still: Emphasizes that the effort will be made for the onsite meeting in January.

Alexie Leauthaud Asks for clarification of what the committee can and can't do.

Martin Still: Emphasizes that the focus of the committee is the written report, so subcommittees need to be focused on that goal.

Kyle Dawson: Asks for clarification on how the committee members can communicate outside of formally scheduled meetings.

Allison Farrow: Recommends that the "March" meeting be held in February to allow time for the draft committee report.

Kyle Dawson: Says that he would like members with expertise in various areas to write those portions of the report.

Kyle Dawson: Asks about a comprehensive list of programs & projects that all the agencies cooperate on.

Keivan Stassun: Asks for a statement defining the scope of committee recommendations and tracking of Decadal Survey recommendations.

Ann Zabludoff: Reiterates she is most interested in hearing what agencies reps see as the risks or impediments to addressing AAAC committee reports.

Martin Still: Q & A sessions after each agency presentation will provide feedback and an iterative process to address this topic.

Kyle Dawson: Says should ask the Congressional aides what information they value.

Martin Still: Asks for approval of the last meeting minutes. No objections were heard. Approved.

11:47 AM EDT

NSF Program and Budget Update – Debra Fischer [2]

12:39 concludes comments.

Keivan Stassun: Asks Debra to comment if the community will be ready for Rubin by 2024.

Debra Fischer: Matching funds for early career individuals connected to Rubin.

Kathy Turner: DOE is interested in partnering on Rubin and dark energy studies and has collaboration and funding to create data sets and a framework for advancement.

Keivan Stassun: It is important to be ready and actions are being taken with increasing inclusivity and how it relates to facility management.

Debra Fischer: meeting with the DEI reps at each facility and each must have a plan for how they will carry out DEI initiatives. Struggle with how we can really move the needle.

Wenda Chow: Sees the plan for improved cooperation with GEO division in NSF. Asks if Debra has any detailed plan on how this will happen.

Debra Fischer: Yes, GEO/AGS has met with us to help coordinate with NCAR/HAO and NOAA. Time to include Space Force as well.

Abigail Vieregg: Asks about OPP because of its impact outside of NSF.

Debra Fischer: Have to gauge the infrastructure upgrades in Antarctica. CMB science is interesting because they cross agencies and NSF divisions. Worth ensuring we aren't duplicating efforts.

Kyle Dawson: Is it worthwhile to bring in a rep from OPP for the January meeting?

Debra Fischer: believes it is a good idea.

Martin will invite OPP for a January meeting to discuss plans for improved infrastructure.

Britt Lundgren: To what extent does ELT hinge on satellite constellations?

Debra Fischer: Very sensitive to how wide the field of view of the facility is. TMT has a relatively small field of view and is not much impacted. Other facilities may be more so. Are forging collaborations with private entities to match or leverage funding for mini-grants.

Ann Zabludoff: You mentioned 5 strategic threats to ground-based astronomy and how difficult it is to meet the Decadal recommendations. Partnerships are mentioned as partial help and wants to know how NSF is coordinating with other AAAC agencies.

Debra Fischer: Most uncertainty is with the mega satellite constellations. Having astronomers only get together will not solve this national/international issue. Need a powerful advocate.

1:02 PM EDT

Kyle Dawson: 15-minute break before NASA update.

1:15 PM EDT

NASA Program and Budget Update – Mark Clampin [3]

The major accomplishment of note is the launch of the Webb Telescope – On-orbit performance exceeds mission requirements. NASA notes there is significant public engagement with Webb.

Decadal Survey recommendations: NASA is taking steps to make the Great Observatories Mission and Technology Maturation Program (GOMAP) a success. They are engaging in a review of the Webb

Telescope building and commissioning process. This endeavor will inform the GOMAP program to make the process efficient.

NASA is taking steps to focus on Inclusion, Diversity, Equity, and Accessibility (IDEA). They bake IDEA into everything NASA does. Furthermore, NASA's strategic plan includes Inclusion and Diversity of thought. They published the Equity Action Plan this year and they are acting on it.

Preliminary Responses: NASA is conducting a Large Mission Study of lessons learned from various programs. The Roman Space Telescope is a priority from the last decadal survey that NASA intends to complete and deliver. CAA will publish in a few weeks and brief NASA of its findings.

Time Domain and Multi-messenger initiative (TDAM) is a focus for NASA with an emphasis on transient alerts. It involves a collaboration between ground and space-based efforts. NASA is currently studying how to respond to alerts efficiently and effectively. They are looking at standing up an international working group for coordination and outlining priorities.

The Astrophysics Probe AO is out for review. NASA is looking at parameters to focus the program. The target date has been revised by six months, with selection by the end of the year. The major change is allowing the X-Ray community to propose what they want if it fits the cost cap.

Future Great Observatories is a critical component of NASA's portfolio. They have a compelling recommendation from the Decadal Survey. Getting Roman to the launch pad and continuing Webb's success is a priority. It is not yet time to start the next Future Great Observatory. NASA needs to first invest in the right technology to make it work. Five years is the timeframe the decadal has given them to lay the groundwork. NASA is taking a deliberate multistage planning and strategic approach. The plan's next step is to organize and assemble teams of people from industry and academia and create solicitations for the technology in which they wish to invest.

2:05 EDT Questions & Answers

Q. Ann Zabludoff asks if there are shared goals between GOMAP and NSF's laboratory astrophysics program. She states there appear to be synergies that could increase collaboration. Ann asks if NASA and NSF are working together in this area. Furthermore, has NASA thought about the Climate Change recommendations in the decadal?

A. Mark Clampin states that NASA is working with NSF on laboratory astrophysics. They intend to talk to NSF about the various synergies possible with GOMAP. He has not yet absorbed the climate change recommendation. However, satellites can interfere with assets that can help measure climate change. Debra Fischer states that Mark made an essential point regarding constellation satellites. Collisional debris from satellite constellations and associated reflections may be the biggest problem for astronomy. Ashley will discuss the magnitude limit (Starlink aims for V=6.5 or fainter), but some LEO cell phone satellites could be zeroth mag (BlueWalker-3).

Q. Wenda Cao asks what the impact of inflation is on the budget to support NASA projects.

A. Mark states that NASA is starting to see the impact inflation has on the ability to procure required hardware. It is too early to see significant impacts, but NASA anticipates them.

Q. Kyle asks for a description of the effort to build collaboration with NSF and DOE regarding time domain and data archives.

A. Mark states there is A lot of discussions with NASA and NSF at a recent TDAMM workshop regarding the alert system. Consolidation is a focus of archive coordination. NASA is interested in standard interfaces between ground and space.

Q. Kyle asks if it would be helpful for an update on collaboration at the next AAAC meeting in January.

A. Mark says DOE and NSF should be involved in future discussions with TDAMM. NASA can provide an update on the work to facilitate collaboration on time domain and data archives. Valerie is the point of contact.

Q. Britt Lundgren asks for the PowerPoint to include the definition of acronyms.

A. Mark says he will include them in the PowerPoint.

Q. Keivan Stassun asks if the structure of the next AAAC meeting could consider the cohesiveness of agency presentations, so they facilitate coordination, so each agency is responding to the same points, and what they are doing to build collaboration. The goal is to see DOE and NSF perspectives on each point. Kyle follows up by asking how the AAAC can facilitate a discussion to hear DOE and NSF perspectives.

Q. Kyle asks for recommendations for presenting a summary of this effort.

A. Martin responds that there will be meetings between the agencies between now and the next AAAC meeting. He believes Valerie would be the right point of contact to give the summary.

Q. Ann states that there needs to be an effort to take the list of all decadal recommendations that connect the three agencies and putting them into a living document and having some links or shorthand for those programs that are in development or ongoing that are meant to satisfy those requirements. We need to determine what is relevant between the decadal recommendations and the cooperation efforts between NSF, DOE, and NASA. Often agencies will take existing programs and match them up, but that is not the charge. Our charge is to find synergies and make the best use of them and leverage resources.

A. Debra states that a list exists of current projects. What does not exist is the mapping of future recommendations and projects.

Q. Kyle asks if it is possible to make that document visible on the AAAC website so it can be a resource for future planning meetings.

A. Debra sees no problem sharing it on the website and will mark it as an action item. Kyle notes that it is a recommendation from last years report to have a record of those collaboration efforts.

Q. Mark asks if the document contains only NSF and DOE efforts.

A. Debra states that it also includes NASA and agrees to send a copy to Mark.

Q. Kyle states that a Decadal Survey recommendation requests a demographic study be performed by a task force that spans NSF, DOE, and NASA. It is looking for a consistent policy between all three agencies. Mark stated that it is pursuing this study through the National Academies independently within NASA. How does this line up with the decadal survey recommendation?

A. Mark states that this study is a previous National Academy recommendation and NASA is implementing the requirements. He has not looked at addressing demographics with DOE and NSF. The NASA committee looking at demographics between agencies was a holder over from before the decadal survey.

Q. Kyle asks if this was a carryover from before the decadal survey.

A. Mark affirms that it is.

2:30 EDT the committee breaks.

DOE/HEP Programs and Budget Update –Kathy Turner [4]

Kathy discusses the Office of Science, laboratories, scientists, facilities, organizational structure, HEP's mission, and outreach efforts. She describes science mission-driven for a specific portfolio of projects. She reviews HEP's model to support science collaboration for each project and its phases. Other topics of the presentation include Workforce Development – R&D tech development, and A.I. Theoretical Research, Partnerships, NASA, NSF, the budget and international partners are also presented.

Q&A

Q: Don't you in effect have access to the data that they can collect?

A: We all have the same data that we're collecting, and we do all follow OMB guidelines. We are collecting it on people who apply for grants. We have our PAN system; you guys have Fastlane. We must get special permission to show each other our system, because there are all these government regulations. This is not the same thing as participating on a project together.

Q: In cases where you are collaborating is there a path where we will see some of the demographics data?

A: The agencies are collecting similar demographics data. The aggregated data across all MPS is published, but smaller samples may lead to individuals being personally identified. Transparency is what the NSF values.

Q: Have any of the 3 agencies have tried partnering with the AIP through their demographic survey team? There are clear problems with self-reporting with PIs and the lack thereof, but when I file an annual report to the NSF, I try to list everyone who is drawing a salary from my fund. Is this a good way to quantify the demographic of the people on these large projects?

A: We do, but that's just a research grant, that's not the big engineering team building the camera. Knowing the demographics of those who are applying for the grant. We know the PIs, but it's a small statical sample, but I cannot show that to you.

5:05 PM EDT

Kyle adjourns the meeting for the day. Discussions were delayed to the following day.

DAY 2; September 27, 2022

11:08 EDT AM

James Webb Space Telescope – Eric Smith [5]

See posted presentation for details on this talk.

Q&A:

Harshal Gupta: How are early release data being exploited? What are the challenges the community is facing?

Eric Smith: The early-release science design to open the data is being utilized.

Kyle Dawson: Asks if other questions on Webb. None heard.

Jedidah Isler: What types of institutions are taking initial advantage of the early release of data?

Eric Smith: No information yet on institution types utilizing the Early Science release.

Kyle Dawson: Data archiving is an issue. Is there any effort to connect data from Webb to other facilities?

Eric Smith: Data goes into the same archive as Hubble and other space missions, and a second round of proposals will come to do in the Fall.

Is Hubble being affected by the mega satellite constellations?

Mark Clampin: Mark is not aware of any impact so far, but does have some close conjunctions that are acted on as needed. As constellations move into higher orbits could become an issue.

11:40 AM EDT

Congressional Committees – Ashlee Wilkins and Sara Barber

Sara Barber: A quick overview of what we do. Are both House committee staffers. Members have responsibilities divided up. Subcommittees, etc. Research and Tech subcommittee. Committees serve a vital role in House to develop expertise in developing legislation and oversight. Partisan split of committees based on overall House makeup. Committee chairs hold much power. Decide on witnesses to testify and what legislation to consider. They serve as a representative representing a district in TX since 1992.

The ranking member is from Oklahoma with 5 separate subcommittees. They conduct oversight of agencies and determine if the implementation of programs in line with Congressional intent. Gets input from various stakeholders. Also asks organizations like GAO to assess. The key is getting input from stakeholders at all levels.

Ashlee Wilkins: Very important for us to hear from stakeholders, especially the scientific community. AAAC is part of its connection to the community. They do read the AAAC reports and is important to get the full picture. AAAC has a unique view and is mandated to look at the astronomy ecosystem across 3 agencies to identify redundancy or gaps. AAAC can come to brief the subcommittee on its report. We welcome those types of interactions.

Decadal Surveys are directed by Congress and subcommittees appreciate feedback on how agencies are doing on implementation. A past AAAC chair was a witness before the science subcommittee.

Sara Barber: Talks about the recently-enacted Bill for Science, a once-in-a-generation Bill. Agencies had largely been operating without guidance from Congress. Set an ambitious vision for the future of science. Bi-partisan and community input was utilized. NSF was a huge part of the Bill from the beginning especially in establishing a new directorate. First is the big increase in authorized funding. Are about 20 authorizing committees in the House?

NSF is up $3 billion dollars in year one, and then an 8% increase annually. The new TIP directorate could not come at expense of the existing portfolio. Top-line increases will be reflected across the portfolio. MREFC is also “plussed up” initially with regular annual plus up. Mid-scale also authorized at about a 50% increase.

NSF needed to be right-sized to overcome the usual 3-4% growth annually. Cost sharing with MREFC between 10-50% based on the division's ability to absorb. Section 371 of the Bill.

Annual report 10372 addresses facilities portfolio and review of lifetime use of observatories.

Future of Arecibo section 10365. Encourages NSF to chart a path for future utilization.

Graduate students training modernization 10313.

10502 instructs the collection of demographic data.

Research security affects everyone. Title III and V. Section 10344.

Ashlee Wilkins: Discusses NASA provisions. Requires NASA to provide quarterly reports on spending on priorities.

Ann Zabludoff: Assessing the synergies between 3 agencies in implementing the Decadal. Learned that subcommittees separate the work each agency does. How do you do this in practice?

Ashlee Wilkins: They do look across agencies in one issue based meeting

Ann Zabludoff: Asks for more details on the collection of demographic data.

Sara Barber: Very specific guidance contained in legislation, also about standardization. Focus is agency-wide perspective.

Kyle Dawson: What ways do you find best to present in the annual report?

Sara Barber: Meet with them before issuing a report to discuss. This will likely be the best chance they will read the report in prep for the meeting and tie the report directly to Congressional mandates.

Sara Barber: Is very concerned about appropriators coming through with the funding in support of the new Bill. Anxiously awaiting FY24 requests. Asks that AAAC brings up that there is a lot on the line and hopes that funding will come through to make things happen.

12:18 PM EDT

Lab Astro Status and Study Charge – Harshal Gupta and Bill Latter [6]

12:35 EDT

Q&A:

Nikole Lewis: The charge of setting up a task force seems quite daunting so what kind of support will AAAC receive? Logistically how will this work?

Martin Still: We don't have a recent history of this.

Harshal Gupta: I am available to support the AAAC. Will suggest task force members for the AAAC to approve.

Britt Lindgren: Will NIST be available to suggest task force members?

Harshal Gupta: Yes, we will be interacting with our DOE colleagues. Will play an active role in standing up the subcommittee.

Chris Davis: Explains how a subcommittee was set up in the recent past.

Harshal Gupta: This will be an interactive process.

Ann Zabludoff: The recommendation for the subcommittee is based on the Decadal, and it is important that this be a high-level strategic-looking focus and include a broad range of members.

Karin Oberg: Where lab astro is thriving now is in the area of curiosity-driven researchers and should have lower barriers to entry into the field.

Nikole Lewis: Is still concerned about the scope of the subcommittee and asks if there is a sense of who should be on the subcommittee.

Keivan Stassun: When the AAAC commissions a task force they are not doing the work of the task force but ensuring the overall guidance is established and followed. Thinks it is the right time and topic for the AAAC to take on. Also asks about what kind of support the task force may need.

Martin Still: Sees as similar to establishing a merit review panel.

Kyle Dawson: Thinks the logistics of putting together the task force is tractable. More concerned about the breadth of the charge.

13:04 EDT: Discussion ends for break.

US-ELT Program and Maunakea Environment Survey – David Boboltz [7]

The Decadal noted that the US ELT was the top priority for ground-based science. Dave noted that spectroscopy is one of the primary drivers of ELT. The share of observing time (30-50%) and access for all US astronomers would maintain the US as a leader in optical and infrared science. When discussion about environmental compliance and outreach was shared, outside of the slides presented, it was noted that about 75 Zoom meetings were held. The notice of intent is needed under NEPA and NHPA, which also included a website (https://beta.nsf.gov/tmt) that was considered "above and beyond", as well as a community engagement plan.

Alternatives for the notice of intent were no-action-alternative, which is a requirement of such notices, but is not the action that the NSF will take. Throughout the ELT decision-making process, a priority has been how can the astronomy community make better partners with the Hawaiians and, specifically, Mauna Kea community.

The public scoping meetings were as geographically distanced as possible in order to reach a large audience. The meetings were well attended, and quite contentious at times, but the NSF and Jacobs were there to listen to the public.

Q&A:

Keivan: Appreciated how substantive the community engagement went, and wants to know how the Decadal model and framework on community engagement is being followed, beyond what has already been done.

Dave: The NSF is following and doing more than is required by the formal regulations of NEPA and NHPA. The next step in the NHPA Section 106 process is to request from those who participated in the public scoping for identification as consulting parties. Those that do want to be engaged will then have discussions with ELT. The step that was presented in the slides were from the NEPA scoping stage, so NHPA has more public engagements. There were workshops to get the community and astronomers

together. What was apparent was that the public was not educated on the mission and importance of each telescope (i.e. why have 14 telescopes, why not 5?). The process does indeed align with the Astro2020 survey. The scoping process and programmatic agreements resemble that of the DKIST.

Britt: Similar question as Keivan, as she wanted to know if the dissenting views from all Hawaiians, not just one group, were listened to

Dave: Yes, over 150 people met with TMT, and will take in the feedback given during the public scoping sessions and modify the community engagement plan, with consideration to the received advice.

Wenda: Appreciates the effort of the complicated steps and the opportunities to release public tension. Understands that the TMT project's initial design was an international consortium, and the US joined and took leadership of this project; Wenda wanted to confirm that the original members are partners.

Dave: Confirmed, and depending on the NSF needs for funding, that will shape how much is available to the US community (~30-50%) for both projects.

Kyle: Questioned about data archiving and maintaining that proprietary data.

Dave: TMT and GMT are in the really early stages of this. NOIRLab simultaneously is considering a proposal for a conceptual design stage. NSF/AST NOIRLab program officer Chris Davis supported Dave's answer.

Satellite Constellations Update – Ashley Vanderley [8]

The dense presentation focused on satellite interference to radio astronomy as an international matter and regulatory coordination with companies is needed. Beyond the slide contents, satellite coordination agreement requirements were discussed. A highlight noted was that anecdotally, those in the satellite industry are "pro astronomy", and are willing to put forth the effort in technical discussions, but they may not know whom to approach (the NSF) to come to solutions early and often. The policies for the radio quiet zone have an opportunity to get modernized, as the transmitters regulated are fixed, not via the air. The National Radio Dynamic Zone was highlighted as a new program with funding set aside for satellite studies. The final aspect of the presentation covered optical guidance (dark and quiet skies), sharing SpaceX, OneWeb and Kuiper have all been reevaluating their design and are open to more brightness implementation changes.

Q&A:

Kyle: What are the other stakeholders outside of the astronomy community in the context of preserving the radio-quiet and dark sky zones?

Ashley: A 2020 published IAU report on the topic gives a historic and cultural perspective of the volume of light increasing, as well as environmental concerns, including space debris. There are a lot of communities involved and at stake, but astronomical research is likely the largest.

Kyle: Agrees that space debris could prevent having satellites in the first place. He asks, what can the AAAC report on?

Ashley: A number of questions: What is the satellite threshold that stops science? Also, please raise the recommendations that have been developed in concert with industry, as well as refine those coordination requirements with corporations.

NSF response to Climate Change – Debra Fischer and Inger Jorgensen [9, 10]

Debra presented why it's astronomers' job to combat climate change. Ground-based facilities are where astronomers contribute the most greenhouse gas emissions, with the biggest of those being remote-located ALMA. Climate change disasters affect astronomy research, from hurricanes (Arecibo) to wildfires (Kitt Peak). A note that Keck gets ~20% of their energy from photovoltaic panels. High altitudes, where telescopes are generally located, allow for efficient solar photon selection rates. Astro2020 gave guidance on reducing carbon emissions. Over the next few years, the NSF is working on reducing carbon emissions by ~50%, with NOIRLab planned to be carbon neutral. Working with private funding foundations allows for the NSF to commit to funding such measures. Energy independence, energy security and energy facilities are really important when programs are using time-series data would prevent big data gaps for research. Inger presented a planned carbon-neutral power source for Gemini, and the current stage of carbon neutrality at NOIRLab. Gemini South's photovoltaic system currently produces ~20% of energy usage and will have paid for itself by 2023. There are restrictions on Gemini North's Mauna Kea that permits a PV footprint only on existing buildings. The PV system on Gemini North was the first time they existed on that location and, at the time, was the highest altitude PV worldwide. The high cost of oil production in Hawaii means that PV systems are tied in cost. All of NOIRLab is committed to be sustainable. By November 2022, NOIRLab will have a website that will present information about current activities and planned ideas on this topic; one current idea is a carbon footprint tool that the community could use.

Q&A:
Alexie: How can the agencies cooperate on implementing such carbon footprint tools, and lessons learned from the NSF's NOIRLab?

Inger: Calculation of carbon footprint is not as straightforward as one would expect. Do not get hung up on preciseness, but be consistent in calculations. Having all grant holders use the same set of tools is the best approach. Regarding the lessons learned, NOIRLab did not budget enough engineering effort. Now, a dedicated project manager is assigned to NOIRLab's sustainability program and is in the budget line. Inger is happy to answer more detailed questions via email.

Debra: Agency cooperation is a good time, as the Biden administration has set aside funding for addressing climate change. Funding is for research on new batteries, etc. However, funding for infrastructure upgrades including renewable power upgrades is not easily found or available. Having the U.S. government set an example on sustainability efforts would be ideal.

Alexie: Are there any plans for reviewing greenhouse gas emissions with regard to grantees?

Debra: Reduction in "paperwork" is a goal for management, however, this additional reflectional step would be motivational and worthwhile.

Inger: Adds that travel is an "easy" address on greenhouse gas emissions.

Alexie: Concerns still exist for junior astronomers to network in person instead of virtual meetings.

Debra: Astronomers for Planet Earth could be a good place to start a workshop.

3:30 PM EDT

State of the Profession – Bethany Jones, Acting Director of Public Policy, AAS [11, 12, 13]

The AAS has concerns with current Congressional appropriations for astronomy. Their focus is to help policymakers understand these concerns. For example, TDAMM is difficult for policymakers to understand, and there should be a rebranding effort. AAS wants the astronomy community to be seen as a whole, not as separate entities.

Astronomy can play a role in rural education because of the ability to access the dark sky. The profession needs to consider this opportunity in the CHIPS and Science act to get them into STEM careers.

If mechanisms for demographic data need to be changed, the AAS can help work for change. Now is the time to make recommendations on gathering, collecting, and using data.

3:55 PM EDT: Q&A

Q. Ann Zabludoff asks if there are concerns with keeping the reviewer's identity confidential and if another community member has found a solution to these concerns when analyzing small number statistics.

A. Bethany states that the research security issues require agencies to do a better job collecting data from PIs. DPIs could be a solution. There is a lot of conversation going on about how to collect data. However, except for NSF, there have been no significant pushes for investigating how to collect meaningful data. Currently no news from OTSP about how to move this process forward.

Q. Keivan Stassun asks if there have been discussions in the AAS regarding engagement with indigenous communities.

A. Bethany says there have been discussions in AAS regarding their role in engagement in this area. They are currently exploring where they can have the most impact.

Q. Debra Fischer states that NSF focuses on regional innovations and geographic distribution. Is the AAS thinking about bringing kids to STEM centers, which might be rural?

A. Bethany states she has not yet looked into what currently exists at NSF. If there is a way to help support colleagues in rural communities who can receive funding to do more in education and outreach, the public and land grant universities are always looking for ways to improve public impact. These are relationships we can help establish.

Q. Britt Lundgren states that NASA space grant opportunities have been effective in rural communities. She asks what opportunities exist in CHIPs to help the various agencies.

A. Bethany wants to see the impact of the space grant program.

Q. Harshal Gupta asks if AAS has considered interfacing with observatories regarding rural opportunities, i.e., Green Bank Observatory.

A. Bethany says they are working and having conversations, but how far they can go as an organization is yet to be seen.

Zoran Ninkov notes in the chat that the CHIPs in Science Program removes cost sharing from the MRI program, reducing funding by 30% and impacting small universities.

Q. Abigail asks why NSF feels it will impact small universities.

A. Debra states that non-Ph.D. granting institutions are penalized because the money available decreases.

Q. Ann asks if the appropriation process will affect the funding structure as proposed. She wonders if the new directorate at NSF could take funding from other directorates.

A. Bethany states that the community understands that they need to advocate for not having earmarks for specific directorates.

Q. Kyle asks what the AAAC can do going forward to gain input from the AAS. He wonders if the AAAC can look to the AAS for guidance and information on future developments.

A. Bethany answers that the AAAC can ask questions anytime. The AAAC can also ask for a brief at any time. The AAS would also be happy to inform you regarding the political landscape, how to write reports, and provide advice and the timing.

Q. Kyle asks if there are other people we should consult.

A. Bethany states that Jean Toal Eisen is an excellent resource because she was Senate appropriations committee staff.

Martin states that Bethany can be a resource of information but cannot lobby on behalf of NSF.

Q. Kyle states that mapping CHIPs act to the decadal is a fact-based relationship that is extraordinarily helpful. It is not lobbying; it is consulting.

Martin states that it is and must remain a fact-based relationship.

Q. Alexie asks if there is anyone at the AAS that the AAAC can contact for the sustainability committee.

A. Bethany states that Michael J. Rutkowski is a good resource.

Kyle states that Alexie is free to contact Michael J. Rutkowski and could even invite him to speak at a future AAAC meeting.

Q. Ann asks if there is a consistent policy among all the agencies on handling a PI who has harassed someone or acted unethically.

A. Bryan states that investigating a claim is the responsibility of the University. Bryan does not know if the mechanism will penalize a researcher or if it is a joint decision between all agencies.

Ann would like to hear what the uniform efforts are to address repercussions.

Carrie Black recommends putting this on the agenda for the next meeting because there are efforts internally.

Q. Britt Lundgren asks if reporting demographic data should be removed from the AAAC charge since OTSP has money from the CHIPs act to do this.

A. Kyle states that we should hear from OTSP to see what they are planning and document in their report that the AAAC relies on OTSP.

Martin states that agency leaders are working hard to excavate this data, but we can't bring along our agencies. We need the OTSP channel to get senior leaders above to help. The AAAS could focus on other topics until guidelines are released. Kyle states that the AAAC should let OTSP lead. Britt says that the demographic reporting issue is a demand of the community and a known problem for some time. The AAAC should continue to make the case to OTSP to push action.

Q. Debra asks if astronomy can release data ahead of the other divisions. She wonders if OTSP will request Division data instead of Directorate level data.

Ann states that STSCI released its statistics but did not know how. Martin notes that STScI is not a federal agency and does not have to follow regulations.

Q. Ann asks if specific legal restrictions prevent astronomy from releasing this data.

A. Martin states that all panels are a FACA committee, a federal entity subject to rules and regulations.

Q. Abigail asks what the goal is to have NSF give a presentation on harassment policy.

A. Ann states that it is in the decadal. We can prioritize it or deprioritize it.

Q. Kyle asks if there are any other projects or questions for inclusion at the January AAAC meeting.

A. Ann states that coordination on LIGO-related science coordination is a good topic. Debra says the SOC could present interagency coordination on analyzing and coordinating observations and archival data.

Q. Kyle asks if Luca or Rupesh could present on this topic.

A. Debra confirms they can.

A. Martin states the AAAC should track instrument development and NN - EXPLORE.

5:14 PM EDT: meeting ends.

Presentation slides:

1) https://www.nsf.gov/attachments/305471/public/1_Welcome_Opening_Remarks_Martin_Still.pdf
2) https://www.nsf.gov/attachments/305471/public/2_NSF_AST_Programs_Budget_Update_Debra_Fischer.pdf
3) https://www.nsf.gov/attachments/305471/public/3_NASA_APD_Programs_Budget_Update_Mark_Clampin.pdf
4) https://www.nsf.gov/attachments/305471/public/4_DOE_HEP_Programs_Budget_Update_Kathy_Turner.pdf
5) https://www.nsf.gov/attachments/305471/public/5_James_Webb_Space_Telescope_Eric_Smith.pdf
6) https://www.nsf.gov/attachments/305471/public/6_Lab_Astro_Status_Study_Charge_Harshal_Gupta_Bill_Latter.pdf
7) https://www.nsf.gov/attachments/305471/public/7_U.S._ELT_Program_Maunakea_Environment_Survey_Dave_Boboltz.pdf
8) https://www.nsf.gov/attachments/305471/public/8_Satellite_Constellations_Update_Ashley_VanderLey.pdf
9) https://www.nsf.gov/attachments/305471/public/9_NSF_Sustainability_Debra_Fischer.pdf
10) https://www.nsf.gov/attachments/305471/public/10_NOIRLab_Sustainability_Inger_Jorgensen.pdf

11) https://www.nsf.gov/attachments/305471/public/11_AAS_State_Profession_Bethany_Johns.pdf
12) https://www.nsf.gov/attachments/305471/public/12_AAS_Actions_on_DEI_Bethany_Johns.pdf
13) https://www.nsf.gov/attachments/305471/public/13_Decadal_CHIPS_SOP_Crossreference_Bethany_Johns.pdf