

POWER AND RESPONSIBILITY. D. M. Scalice¹, M. Kirven-Brooks,¹ A. L. Gronstal¹.

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Introduction: Creating anti-racist culture must begin by examining power dynamics. Each party must acknowledge its position with respect to power in any given relationship. Awareness and understanding can transform unhealthy, imbalanced power dynamics.

NASA has power. NSF and other agencies have power. They are in a dominant position of power in almost every relationship in which they find themselves. They also have the great privilege of managing and spending hard-earned taxpayer money. With this privilege comes a tremendous responsibility to ensure no person is harmed by their actions. To advance anti-racist policy and practice within their own structures as well as those of their stakeholder and partner institutions, agencies should appropriately wield their power and influence to affect positive and lasting change.

Background: One major way through which agencies express their power is via the solicitation, proposal, review, and award process. Solicitations are potent documents. They codify values and communicate priorities and desired outcomes. They guide the scientific and technological development of entire fields of study, and focus the community toward shared goals and objectives.

Solicitations are flexible, lithe, and can easily morph to reflect emerging priorities. For example, in the late 1990s, NASA's Science Mission Directorate (SMD) implemented a new policy to reflect its commitment to STEM education and ensured the policy was reflected in its solicitations. The policy required that education be incorporated into mission plans and Research and Analysis (R&A) proposals. The same can be true for efforts in Diversity, Equity, Inclusion, and Accessibility (DEIA). Long-term, sustainable commitment to new policies and practices will be required to monitor change and ensure stability.

The Seat of Transaction: There is certainly much more to it, but to first order, the awarding of funds to an institution by an agency for a set of deliverables defined in a proposal in response to a solicitation comprises a transaction. The two parties at the nexus of that transaction, primarily, are the agency and the proposing institution, not necessarily the agency and the researcher directly. In making an award, agencies are procuring a set of activities and deliverables by a group of researchers embedded in one or more institutions. We must acknowledge that in so doing, agencies are also, via the payment of indirect costs and overhead fees,

directly funding, accepting, and implicitly condoning all the policies and practices of the institution. To be sure, most of these are benign, and entail ensuring personnel have what they need in terms of facilities, training, administrative support, etc. They can also entail the requirement that the institution abides by laws and regulations as defined by Congress and interpreted by various regulating entities. Yet institutional policies and practices can, actively or passively, allow racism, sexism, homophobia, transphobia, ableism, classism, colonialism, and other insidious thought processes, value systems, and systemic or individual behaviors to persist. Without deeper analysis, agencies can find themselves complicit in their perpetuation.

Agencies are not unaware of or passive about the policies and practices of those with whom they do business and maintain relationships, even in unfunded arrangements. For example, NASA does not engage in collaborations with certain countries. Under federal civil rights laws, recipient institutions of agency grants, awards, and cooperative agreements must ensure equal opportunity to their program beneficiaries. Many agencies are doing the same in different ways, one of the most high profile of which was NASA's announcement in July, 2020 of a fifth core value in its mission statement: Inclusion. As part of this commitment, NASA and other agencies must use their power, in the best of ways, to examine how those with whom they do business espouse and implement policies and practices to advance DEIA ideals. To do otherwise risks agencies remaining cogs in the wheel of structural racism, and finding themselves at odds with their missions of cultivating anti-racist culture and a diverse and inclusive STEM workforce.

Recommendations: A Stepped-Implementation Strategy for Solicitations: A new process can be imagined wherein solicitations are a key modality to ensure the science and technology the agencies procure and support is able to develop in an institutional environment reflective of excellence in anti-racist policy and practice. Through a stepped-implementation strategy guided by specific goals, agencies can maintain the mission-critical research they support *and* promote DEIA excellence at the institutions that carry it out.

In the next release of each solicitation they issue, agencies can require proposers to list and describe all institutional policies and practices pertaining to DEIA, and provide data describing success or failure on these

fronts. Asking for this information signals to researchers and institutions that the agency is committed to encouraging effective DEIA practices and is paying attention to what's happening at the institutions it would fund. For these first issuances, however, the recommendation is that only the proposed scientific work be evaluated.

In the subsequent release of each solicitation, agencies can require these same pieces of information about the DEIA policies and practices of the institution, and provide criteria against which they will be evaluated, citing indicators of alignment in a rubric from novice to expert (vs. poor to excellent). Agencies can describe in the solicitation how these DEIA scores will factor into the overall assessment of the proposal, and how much weight they will carry in relation to the evaluation of the scientific and technical merit of the proposed effort. Precedent exists for such gradual change to solicitations in NASA/SMD's Data Management Plan (DMP) requirements, which began as suggested content and are now required content, including requiring a budget for the DMP.

Separate review panels can then be convened, one holding specific expertise in the science and technology being proposed and the other in institutional DEIA policy and practice, each tasked to evaluate the proposal's contents in their areas of expertise against carefully developed (via external expertise), stringent criteria put forward by the agency. Program officers and selecting officials, having calculated the scores for each proposal, will then organize proposals into what is selectable and what is not, and why. Thus it will be possible for a proposal to have described desirable, fundable scientific work which would be conducted in a DEIA-poor institution, and for that reason alone, render it unselectable.

This process opens up spaces for positive, healthy negotiations. Agencies can exert their power, strength, and leadership in this dynamic to draw out racist policies and practices and offer support to the institution toward DEIA evolution and active solutions. Selections or funds can potentially be withheld until change toward anti-racist culture is made. Conditions could be asserted under which the researchers can be enabled to do their work while tracking proposed changes to DEIA policies and practices at the institutional level. Separate pots of funds can be made available to which researchers can propose to enable DEIA capacity building at the institutions of either selected and/or unselectable proposals. Proposals that fail to meet the standards of DEIA excellence can be rejected and agencies can take their business elsewhere to places where they can be assured they're not complicit in structural racism. In any case, this process creates an urgency for the

researcher and the institution to engage in self-examination around DEIA, and for the researchers in particular to realize their stake in and take action around how their institution conducts itself. The objective is not to punish, but to identify areas of growth and call everyone to the table to make progress.

As in the case with the DMPs, as these processes unfold, agencies may consider hosting workshops for proposing researchers and institutions to provide insight on how they expect these changes to manifest, highlighting the spirit in which they are being undertaken. This would provide an opportunity for iteration, positive feedback loops, and co-creativity to flourish.

On the practical level, to support these changes in how they conduct business and fund science, agencies must engage external experts to develop the criteria against which to determine DEIA excellence or lack thereof in the institutions to which taxpayer money is being provided. External expertise will also be required to monitor DEIA compliance, especially where new institutional policies and practices are enacted. These criteria can be co-developed by and should be shared across agencies and other organizations.

DEIA Evolution within the Agencies Themselves:

Adjacent and parallel to this entire, multi-year process, there needs to be an internal process unfolding within the agencies. A journey of truth to examine, name, and take responsibility for their role in perpetuating structural racism. A journey to understand how the hubris and entitlement of colonialism and cultural hegemony have resulted in the cognitive imperialism of the scientific enterprise writ large, and how this has affected who gets to participate. We recommend agencies seek external expertise for this, and prepare to make a long term commitment, investing on behalf of their current and future workforce to support their individual and collective journeys toward awareness, healing, diversification, and DEIA evolution.

However the internal and external processes described above unfold, agencies have an opportunity to co-create anti-racist culture both for themselves and for the communities of which they are integral part and in which they hold power. They have the opportunity and the responsibility to ensure there is never again a day where the scientific and technical achievements they facilitate are marred by the ugliness of racism. Without the full participation going forward of people of all colors, genders, abilities, walks of life, and ways of loving and praying in a working environment where they can bring their whole selves and be free from harm, those achievements are incomplete, inconsequential, and invalid, and fail to authentically represent the humanity that planetary exploration aspires to serve.