A SURVEY OF RESEARCH ADMINISTRATORS: IDENTIFYING ADMINISTRATIVE BURDEN IN POST-AWARD FEDERAL RESEARCH GRANT MANAGEMENT

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ABSTRACT

Research universities and the federal government partner to foster societal, scientific, and technological advancements, but the federal research grant process is criticized for its procedural inefficiencies. Principal investigators and research administrators lament losing time to bureaucratic regulations, unwieldy processes, and burgeoning reporting standards. As the cost of higher education is increasingly scrutinized, existing procedures warrant examination to identify areas of undue administrative burden and subsequently restructuring to ameliorate cumbersome inefficiencies. The purpose of this study is to identify areas of administrative burden among post-award research administrators (PARA). Ninety-six PARA were surveyed. Several overlapping themes emerged, such as frequently changing regulations and excessive reporting requirements. The suggestions to alleviate administrative burden included standardizing federal grant management systems, regulations, forms, and cash management systems and limiting the rate of changes to federal grant management systems and regulations.

Keywords:

research administration, administrative burden, inefficiency, higher education, federal grants, grant management, post-award, research accounting, financial compliance, spuddle

INTRODUCTION

University research expenditures total nearly $75 billion per year, approximately $42 billion of which is funded by federal grants (Kamensky, 2020; Mosley et al., 2020). Federal research grants are bound to a cadre of federal rules and regulations which are outlined in the Office of Management and Budget (OMB) publication titled, "*Uniform Administrative Requirements, Cost Principles, and Audit Requirements for Federal Awards*" (2020), otherwise referred to as "Uniform Guidance" or "UG." To avoid audit findings or bad publicity, institutions impose their own layers of policies and procedures, further encumbering the research administration process (Mosley et al., 2020). Faculty researchers (also referred to as "principal investigators" or "PIs") describe this layered framework of administrative requirements as "excessive" and "unnecessary" (Rockwell, 2009, p. 29). While some regulatory guidelines are necessary to provide accountability

for taxpayer-funded research endeavors, the federal government and institutions must seek a balance between culpability and administrative burden (Leshner, 2008; Mosley et al., 2020; Rockwell, 2009). Failure to do so diverts PI time from research endeavors to administrative tasks (Mosley et al., 2020; Rockwell, 2009; Schneider et al., 2014), which can impair scientific progress and promotion opportunities, such as tenure.

The Federal Demonstration Partnership (FDP) is comprised of representatives from ten federal agencies and over 210 federal grant recipients (Federal Demonstration Partnership, n.d.). The mission of the FDP is to "reduce the administrative burdens associated with research grants and contracts" (Federal Demonstration Partnership, n.d., para. 1). The FDP surveyed faculty researchers about administrative burden in 2005, 2012, and 2018. Ninety-seven percent of respondents to the 2005 Faculty Burden Survey (note: the 2012 and 2018 iterations of this survey are referred to as the "Faculty Workload Survey") asserted that project managers could manage some of the administrative tasks associated with federal grants (Rockwell, 2009). A similar study by Mullen et al. (2008) found that 95% of surveyed PIs endorsed the notion that additional administrative support would alleviate some of their administrative burden and allow them to spend more time on research. When asked about the estimated impact of being provided with adequate project management support, 65% of respondents replied that this would allow them to devote three to four more hours of time to research each week, and nearly 20% of respondents believed this would liberate an additional seven hours per week for research (Rockwell, 2009). Similarly, Cole (2007) found that nearly 94% of PIs surveyed identified a reduction in administrative tasks, such as grant-related paperwork, as their highest or second-highest priority for research administrators.

In response, universities increased spending from their own funds by $7 billion from 2010 to 2017 (Kamensky, 2020; Mosley et al., 2020) to expand research-related support. Research universities employ specialized staff to focus on the pre-award (proposal), contractual, research compliance, and post-award stages of federal awards, but this has not eliminated the administrative burden from PIs according to the Federal Demonstration Partnership (FDP). Although most research-intensive institutions employ these dedicated teams of staff that are designed to alleviate the administrative burden from PIs, internal policies and procedures often require PI engagement in these processes. Some PIs may perceive the function of research administrators as a barrier instead of one of compliance and burden relief, which further complicates the process (Cole, 2007). The inadequacy of institutional infrastructure coupled with policies described as "cumbersome and redundant, time consuming, fragmented, and unfriendly to users" (Mullen et al., 2008, p. 25) present further barriers to efficiency.

PURPOSE OF STUDY

The purpose of this study is to identify areas of administrative burden for post-award research administrators. Although research grant funding is offered from federal, state, industry, foundation, and institutional partners, this inquiry will focus on federally sponsored research awards. Research administration staff were surveyed to provide insights into the following questions: What tasks are identified as exceptionally cumbersome? Which federal sponsors are associated with the highest levels of administrative burden? What makes the grants sponsored by these federal agencies particularly burdensome? What recommendations do research administrators advance to ameliorate burdensome processes? How can this information be used to inform best practices for the field?

DEFINITION OF POST-AWARD RESEARCH ADMINISTRATORS

Essential duties and job titles of research administrators vary across institutions. Some universities employ individuals whose duties include a narrow scope of work that is specific to financial compliance (e.g., ensuring adherence to federal regulations), non-financial fund management (e.g., assisting with Other Support documents or requesting no-cost extensions), or research accounting (e.g.,: financial reporting or invoicing), whereas some

institutions lump any task related to those functions into a singular role. Titles also vary across institutions and may include post-award analyst, post-award research analyst, research accountant, post-award accountant, grants manager, post-award grants manager, sponsored programs manager, and more.

The post-award phase of research administration begins once a fully executed Notice of Award (NOA) is issued by the grant sponsor to the institution that will be conducting the project. It concludes upon closeout of the project, which typically includes the submission of final scientific and financial reports. Additional tasks affiliated with the post-award phase include establishing a fund identifier to which PIs assign project-related expenses, project modifications (e.g., no-cost extensions or scope of work revision), financial compliance monitoring, invoicing, scientific and financial progress reports, fund reconciliation, and closeout (Cayuse, n.d.; National Institutes of Health, n.d.-a).

For the purposes of this study, the definition of post-award research administrators (PARA) includes any individual who endorsed a role on the survey in financial compliance, post-award, research accounting, and/or research finance and whose duties include one or more tasks associated with post-award research grant management

LITERATURE REVIEW

Per the Council on Governmental Relations (COGR), the federal government implemented 110 new regulations governing federal research grants between 1991 and 2018 (Kamensky, 2020; Mosley et al., 2020). The increasingly nuanced compliance policies are compounded by each federal sponsor imposing its own procedures and reporting requisites (see National Science Foundation, 2020a, for more detail), thus necessitating teams of increasingly specialized staff to manage them. The upsurge in guidelines do not increase research output or quality, and these cumulative burdens may ultimately reduce the competitiveness of the United States in the research and development global market (Mosley et al, 2020; Schneider et al., 2014). The Research Business Models Working Group (RMBWG) is an interagency committee formed at the behest of OMB and the Office of Science and Technology Policy (OSTP) and is charged with identifying and eliminating burden from the federal research grant process. This working group also recognized the urgency in regulatory burden relief, stating, "It is especially important to do so in cases where substantial and unproductive administrative burdens affect our Nation's scientists, thereby impeding the rate of scientific and technological advancement—and hence our National competitiveness" (Research Business Models Working Group Committee on Science, 2018, p. 1). Unfortunately, high rates of administrative burden continue to be reported even with support from research administrators. Schneider et al. (2014) stated that respondents to their 2012 FDP Faculty Workload Survey "reported a sense that the bureaucracy is so intense that they have lost the ability to focus on their research" (p. 89). Due to these findings, the most inefficient processes at the post-award stage of the research administration lifecycle will be evaluated with the intention of offering a set of best practices to alleviate the administrative burden for PARA.

KEY INEFFICIENCIES AT THE POST-AWARD STAGE

The post-award stage begins once a fully executed contract is received from a sponsor and the experiment is approved to commence by the research compliance team. This stage ends with the submission of final financial and scientific reports. This stage includes hiring, training, and evaluating of project personnel, effort reporting, managing project-related research expenditures, submission of annual financial and scientific reports, and data management, all of which were identified in the FDP surveys as among the most burdensome tasks (Rockwell, 2009; Schneider et al., 2014). Convoluted layers of federal regulations and institutional policies result in PARA responding to PI inquiries with "It depends…", which may appear duplicitous and suspend progress on a project-related activity until an allowable course of action is confirmed. This can foster tension between PARA and PIs. A survey of PIs by Cole (2007) found that PIs desired more efficient financial reporting and access to more efficient purchasing for their research projects. Failure to complete

annual financial and scientific progress reports in a timely fashion can delay incremental research funding, which can in turn precipitate delays in the progress of the project.

ATTEMPTS TO MITIGATE ADMINISTRATIVE BURDEN

The 2005 FDP Faculty Burden Survey found that researchers spent approximately 42% of their time that was intended for federally sponsored research on administrative activities (Rockwell, 2009). Similarly, the results of the 2012 FDP Faculty Workload Survey revealed that faculty reported spending 42.3% of their time on pre-award and post-award administrative tasks associated with federal grants instead of research (Schneider et al., 2014). Although several governmental initiatives were devised to address the undue financial costs and the administrative burden associated with cumbersome regulations, few gains have been realized to date. For example, Executive Order 13563 (2011, January 18) was issued with the intention of identifying and implementing more cost-effective procedures across federal agencies while also evaluating and deploying more streamlined regulatory guidelines to reduce administrative burden. The goal was to focus on the objectives of the funded initiatives as opposed to regulating the exact mechanisms of compliance.

In December 2014, the OMB combined eight circulars into one resource of rules and regulations that govern federal awards. The purpose of this resource, *Uniform Administrative Requirements, Cost Principles, and Audit Requirements for Federal Awards* (UG), was "to reduce administrative burden on award recipients and, at the same time, guard against the risk of waste and misuse of Federal funds" (Office of Management and Budget, 2014). Unfortunately, individual federal sponsors continue to impose their own regulations to govern their agency-specific grants, which is confusing and burdensome for grant recipients (Cole, 2007). Inconsistency across federal grant-making agencies has been an ongoing source of criticism since the precursor to UG, the OMB Circular A-110, was issued clear back in 1976 (Myers & Smith, 2008). Despite this, there has been a lack of tangible progress in standardizing processes across federal departments.

In June 2016, the Report to Congressional Requesters (GAO-16-573) issued by the United States Government Accountability Office reviewed these efforts and found, "Despite these and other federal efforts to streamline research requirements, universities and stakeholder organizations continue to cite increasing administrative workload and costs for complying with requirements" (p. 3). Likewise, the results of the 2018 Federal Demonstration Partnership Faculty Workload Survey revealed the burden reduction did not materialize, and that the amount of time PIs reported committing to these administrative tasks increased to 44.3%. Research administrators echoed these findings, indicating that they spent "a disproportionate amount of time using antiquated processes to monitor compliance. Efficiencies could be gained from modernization and grants managers could instead shift their time to analyze data to improve results" (Office of Federal Financial Management, Office of Management and Budget, 2020, p. 3766).

Though not specific to federal research grants, Executive Order 13771 (2017) was issued in an effort to reduce administrative burden and to improve the impact of federal funding. The language calls for agencies to identify and repeal a minimum of two existing regulations for every new regulation they propose. The net cost of all regulations in fiscal year 2017, which included both new and repealed regulations, was expected to be less than or equal to zero. On January 6, 2017, the American Innovation and Competitiveness Act (AICA) became law (42 USC 1861, 2017, January 6). The expectations of the AICA were congruent with Executive Order 13711. The AICA required OMB and the OSTP to launch a working group to review existing research and development policies and to develop recommendations to streamline processes and to minimize the administrative burden in federal grant management. The National Science and Technology Council (NTSC) is tasked with coordinating policies associated with science and technology across federal research agencies. As such, the NTSC convened in 2017 and assembled the Research Business Models Working Group (RBMWG). This workgroup compiled a series of recommendations in a report titled, "*Reducing Federal Administrative and Regulatory Burdens on Research*" (Research Business Models Working Group, 2018).

As of December 2020, two of the strategies recommended by the RBMWG were deployed: The use of Open Researcher

and Contributor Identifiers (ORCID iDs) and increased usage of the Science Experts Network Curriculum Vitae (SciENcv) program. An ORCID iD is a unique digital identifier that PIs can affiliate with publications and grants that remains stable across changes in institutions and names (Office of Extramural Research, 2019). This system can upload information into other federal systems associated with federal research grants and aims to minimize the number of times a PI has to enter professional data into grant applications and associated forms. As of October 1, 2019, the NIH Agency for Healthcare Research and Quality (AHRQ), and the Centers for Disease Control and Prevention (CDC) require the use of ORCID iDs for all PIs supported by career development, research education, research training, or fellowship awards (Office of Extramural Research, 2019). At the time of the RBMWG meeting, the SciENcv system was used by NIH and the Institute of Educational Sciences (IES) and was being tested with NSF grants (Research Business Models Working Group, 2018). As of May 1, 2020, SciENcv became an official NSF-approved format for its Current and Pending Support documents (National Science Foundation, n.d.). Since the adoption of these tactics is relatively recent, it is unclear how much impact they have had on administrative burden. It should be noted that as of March 2022, SciENcv does not yet include NIH Other Support documents (SciENcv Help Desk, Personal Communication, 2022, March 3). While the intention of this system may be to reduce administrative burden, it currently stands as another example of using a parallel system and different forms for tracking grant support for a PI instead of streamlining this process into one comprehensive system.

In January 2020, OMB posted proposed revisions to UG for public comment (OMB, 2020) as per 2 CFR §200.109. Uniform Guidance must be reviewed every five years "to reduce recipient burden, provide guidance on implementing new statutory requirements, and improve Federal financial assistance management, transparency, and oversight" (OMB, p. 3766). As noted above, the Background and Objectives section of 2019-OMB-0005 stated, "...grants managers report spending a disproportionate amount of time using antiquated processes to monitor compliance. Efficiencies could be gained from modernization..." (p. 3766). Two amendments to UG were implemented on August 13, 2020, with the remaining modifications going into effect on November 12, 2020 (Guidance for Grants and Agreements, 2020). The changes are touted as providing administrative relief by "requiring Federal agencies to adopt standard data elements for the information recipients are required to report" and "improving consistent interpretation" of the regulations (Guidance for Grants and Agreements, 2020, p. 49506). Due to the relatively recent implementation of these regulatory changes, it is too early to discern if a positive measurable impact on regulatory burden will materialize.

On February 9, 2023, OMB issued a Request for Information (RFI) to afford members of the public input on 2 CFR (OMB, 2023) prior to proposing amendments to these regulations. One of the stated aims is to "revise guidance to reduce agency and recipient burden" (OMB, 2023). As a response to this RFI, COGR submitted a letter to OMB to highlight areas of regulatory ambiguity and administrative burden (COGR, 2023, March 14). One of the recommendations suggested the augmentation of section 200.106 – Agency Implementation by adding, "*federal agencies, in coordination with OMB, are encouraged to seek harmonization across IT systems, reporting, and policy implementation*" (p.7, COGR, 2023, March 14). Another recommendation advocated for the inclusion of this text in 2 CFR 25 and 170 "so that any implantation of new data elements, identifiers, reporting requirements, or other related actions are assessed for the impact on administrative burden in comparison to the value of any benefits to be received" (COGR, 2023, March 14, p. 7). Should OMB elect to include this language and hold all federal agencies accountable for adhering to these policy revisions, it is likely that PIs and PARAs would report a reduction in administrative burden

BARRIERS TO MITIGATING ADMINISTRATIVE BURDEN

Multiple layers of bureaucracy, including OMB, federal sponsors, auditors, and universities, encumber the research administration process. Inconsistent audit methods and interpretations of federal guidelines deter universities from adopting more flexible policies. As Mosley et al. (2020) noted, "There have been many attempts to streamline requirements by governing bodies, professional organizations, and grant recipients but they have achieved limited success to improve cost efficiency and performance outcomes. Moreover, even minor improvements have often taken

years to be realized" (p. 11). The issue is not the lack of recognition of the cumbersome and inefficient processes governing federal research grants, but a lack of effective policy amendments to reduce or eliminate burden across all levels of governance as well as the commitment to doing so.

A recent example of increasing administrative burden is found with the new "Other Support" document required for NIH research performance progress reports (RPPR). Effective January 25, 2022, NIH began requiring a new format by which PIs would declare their current grant support as well as "in-kind" support, which means personnel or tangible items related to an NIH-sponsored project are financially supported by a third party (Office of Extramural Research, 2021, December). Research administrators have expressed frustration about the FAQ document associated with this new required format and the requirement that an electronic signature from the PI be included on each Other Support document. Since the Other Support document is a federally required component of annual NIH RPPRs, these changes have required additional PI and research administration time to ensure compliance with both the content and the formatting.

Similarly, as of January 30, 2023, NSF also began requiring updated formats for Biosketches and Current and Pending (Other Support) documents. Although the new formats are available in SciENcv, they vary from the revised forms that NIH instituted just one year ago. Starting in October 2023, NSF will require PIs to use SciENcv to generate Biosketch and Current and Pending (Other Support) documents, but this requirement has not been adopted by NIH or other federal agencies to date. The content required by each federal agency is similar, but the layout and minor nuances differ, causing PIs and PARA to spend time reformatting information to placate federal grant sponsors.

RELATED CONCERNS

Inequity Across Institutions

Ranking methodologies emphasize research productivity and related expenditures (Mullen et al., 2008). Kamensky (2020) and Mosley et al. (2020) noted that universities "increased spending on research by $7 billion between 2010 and 2017" (p. 1). This represents an increase from 19% to 25% of total university research expenditures (Mosley et al., 2020). While this level of institutional funding may be feasible for universities with ample and flexible endowments, it may be prohibitive for universities with fewer fiscal resources. Junior faculty are often dependent on seed funding (alternatively referred to as "start-up funds") to build their research programs and establish a lab that is competitive enough to receive consideration for external funding. Additionally, under-resourced universities may lack sufficient laboratory space, facilities, studios, and equipment for faculty to conduct robust or innovative research projects, which may further limit opportunities for external funding.

Fiscal and physical resources are essential for vigorous research endeavors, particularly in the science and engineering fields. Competition for federal research dollars is intense, but the 20 top-funded research institutions received over $11.8 billion in science and engineering (S&E) support, which accounts for one-third of all federal research dollars for S&E obligations in fiscal year (FY) 2017 (Pece, 2019, May). Similar trends were seen in FY 2019 as the 20 top-funded research institutions received over $13.7 billion in S&E funding, or approximately 36% of the funds awarded that year (Pece, 2021, July).

During FY 2017, federal grant support to all Historically Black Colleges and Universities (HBCUs) decreased by 17% to a mere $308 million (Pece, 2019). Although federal S&E obligations to HBCUs increased by 3.8% in FY 2018 and by 7% in FY 2019, this only represents an additional $12 million in FY 2018 and $21 million in FY 2019 across all HBCUs (Pece, 2020, 2021). The 20 top-funded research universities received a collective increase of nearly $1 billion in FY 2018 (Pece, 2020, May), highlighting the inequities in the distribution of research funding. For comparison, the top-funded research university, Johns Hopkins University, received over $1.7 billion in S&E federal funding in FY 2017, over $1.8 billion for FY 2018, and nearly $1.9 billion in FY 2019 (Pece, 2019, 2020, 2021). This is double the amount received by the second-

highest funded S&E program, the University of Michigan, and nearly five and one-half times the amount awarded to all HBCUs during this time period.

Rockwell (2009) stated that faculty at institutions that received less than $10 million per year in federal research funding reported higher levels of administrative burden, which may be symptomatic of a lack of comprehensive research administration support at those institutions. Rockwell also found that faculty at public institutions endorsed higher levels of administrative burden related to financial tasks, whereas faculty at private institutions experienced more administrative burden related to IRB and IACUC protocols, COI, laboratory safety, HIPAA, and chemical inventories. Since the indirect costs received from federal grants help finance PARA at many institutions, this creates a cycle of having limited administrative support for grants, which may, in turn, diminish the likelihood of being awarded a federal grant due to the stringent application guidelines imposed by each federal research grant sponsor. It may be difficult for under-resourced programs to break this cycle.

The frequent imposition of unfunded federal mandates not only create additional administrative burden for PARA and PIs, but also financial burden. In August 2022, the Office of Science and Technology Policy (OSTP) issued a memorandum to instruct the federal agencies to require "free and public release" (Nelson, 2022, p. 1) of publications that were developed using federally funded research by December 31, 2025. Although the spirit of this memorandum is to allow everyone free and immediate access to research findings, little guidance has been provided to PIs on managing these new directives. Presumably, institutional personnel and resources will assist with meeting this new requirement, but the scope of the costs are unknown. While NIH began allowing Data Management and Sharing costs in grant proposals as of January 25, 2023 (NIH, n.d.-b), the results from a recent COGR survey suggest that the financial burden is projected to exceed $1 million per year (COGR, 2023, p. 4). Without additional resources, these mandates will likely strain further the limited finances of under-resourced programs.

Impact on Tenure Process

Expectations for faculty have surged in recent decades. Faculty are expected to be responsive to students, adapt to new classroom technologies, provide educational opportunities for their local communities, and to identify collaborative opportunities with peers within and external to their institutions. Since many universities are hiring fewer tenure-track faculty, those who are hired into tenure-track roles are tasked with additional service and committee demands (Cole, 2007; Kouritzin, 2019; Sorgen et al., 2020; Wimsatt et al., 2009). In addition, tenure-track faculty are expected to contribute to the scholarly body of work in their respective fields (Cole, 2007; Hu & Gill, 2000), which is casually referred to as the "publish or perish syndrome" (Cole, 2007, p. 14). This often means obtaining externally funded research grants to support the experimental and data collection processes.

Researchers cited a lack of institutional support, including an overload of teaching responsibilities and insufficient assistance available to submit grant proposals, as prohibitive to conducting research (Mullen et al., 2008; Walden & Bryan, 2010). Hu and Gill (2000) identified a teaching load of more than 11 hours and numerous service responsibilities as inhibiting research productivity. Non-tenured faculty reported more administrative burden related to federal grants than senior faculty (Rockwell, 2009). Faculty are pressured to acquire externally sponsored funds for research to offset institutional costs, particularly at institutions that are subject to reductions in governmental funding (Lintz, 2008; Wimsatt et al., 2009). Schneider et al. (2014) asserted that some respondents to the FDP survey "noted that the funding climate is so dismal that they are highly discouraged from continuing research, or are altering the direction of their research to an area that has greater funding opportunities" (p. 89). Individuals from underrepresented groups, particularly racial and ethnic minorities and women, report higher levels of stress than their academic peers (Kouritzin, 2019; Wimsatt et al., 2009), and Rosser (2004) found that reports of increased stress levels were correlated with the likelihood of leaving their institutions or academia entirely. Most universities evaluate research and publications as part of the tenure process, so barriers to these processes may result in denial of tenure and loss of otherwise talented and diverse faculty.

SUGGESTIONS FOR REDUCING ADMINISTRATIVE BURDEN

Although literature pertaining to administrative burden in research administration is limited, a few publications have identified potential resolutions for procedural inefficiencies in the post-award grant management phase of the research lifecycle. Mosley et al. (2020) recommend that federal sponsors and auditors apply "...consistent implementation and interpretation of the Uniform Guidance" and to "focus on accountability of performance over accounting (paperwork) compliance" (p. 8). Research administrators, PIs, and the audit community should collaborate to focus on the efficiency and effectiveness of research performance, including standardization of administrative requirements and audit policies across federal agencies (Mosley et al., 2020; COGR, 2023). Auditors should demarcate more clearly the differences between fraud and administrative noncompliance. Similarly, federal sponsors should implement a streamlined resolution process to investigate and resolve allegations of administrative noncompliance. This would preserve the integrity of the audit process while tolerating immaterial levels of administrative noncompliance (Mosley et al., 2020). One initiative that federal sponsors can implement that minimizes the risk of substantial fraud or fiscal waste includes issuing fixed-price grants of up to $250,000, similar to the process used in the Simplified Acquisition Threshold process for federal programs. Reporting requirements would be limited by sponsors, thus freeing PI time to focus on the research (Kamensky, 2020; Mosley et al., 2020).

With the implementation of a congruous framework of federal policies and expectations, universities would have the confidence to reevaluate their institutional policies to determine if each practice is "necessary, effective, and efficient" (Mosley et al., 2020, p. 9). Universities should evaluate each of their policies from a cost/benefit perspective to determine which areas warrant revision, such as the financial thresholds for purchases on federal grants or internal effort reporting mechanisms, to encourage efficient grant management.

METHODOLOGY

Instrument

A Qualtrics survey was developed to ascertain perceived levels of administrative burden among research administrators. The survey included quantitative and qualitative segments. Quantitative measures included length of time in the profession, role within research administration, and which sponsors were perceived to present the highest levels of burden. Qualitative measures included questions that allowed for open-ended input from participants to explain why the policies of specific sponsors were perceived as particularly burdensome and what recommendations they wished to advance to ameliorate administrative burden within the profession.

PARTICIPANTS

Research administrators and research accountants were recruited to complete a Qualtrics survey about the administrative burden they encounter while managing federal research grants. Of the 160 participants who started the Qualtrics survey, 122 completed the survey. Three participants did not answer any survey questions beyond the consent page, so they were removed from the data pool. The original dataset included respondents from all research administration roles, so the dataset for this publication was narrowed to include individuals who endorsed financial compliance, research accounting/research finance, and/or post-award grant administration roles for a total of 96 respondents. Of these 96 participants, the average completion percentage of the survey was 89.1% and the average duration of the survey was 29.71 minutes.

A total of 75 PARA respondents reported their total length of employment in research administration. The aggregated total of service in this field was 1,089 years for an average length of service of 14.52 years per respondent. Of the 72 who reported their gender, 90.3% identified as female, 9.7% as men, and 0.0% as non-binary.

The same 72 respondents who reported gender responded to the question regarding ethnic/racial identification. The total number exceeds 72 since respondents could endorse all descriptors that applied, and four individuals endorsed two categories each.

Table 1: Number of Respondents by Ethnic/Racial Identification

Ethnic/Racial Identification	Number	Percent
Asian American or Pacific Islander	1	1.4
Black or African American	5	6.9
Hispanic or Latina/o/x	8	11.1
Native American or Alaskan Native	2	2.8
White or Caucasian	57	79.2
Other	1	1.4
Prefer not to say	2	2.8

The majority of participants reported current employment at four-year institutions of higher education. Since respondents were able to select all attributes that described their respective institutions, the total of endorsed attributes exceeds the number of unique respondents (n=86) to this question. There was one response each for Two-Year Public, Two-Year Private, Historically Black College or University, and Women's College, so those responses were collapsed into the "Other" category for this table. None of the PARA respondents endorsed current employment at a Tribal College or University.

Table 2: Number of Respondents by Institution Type

Type of Institution	Number	Percent
Four-Year Public	55	64.0
Four-Year Private	29	33.7
For-Profit	2	2.3
Hispanic Serving Institution	10	11.6
Other	4	4.6
Did Not Respond	10	11.6

A total of 96 participants endorsed one or more current roles within the parameters of post-award research administration. Since it is common for research administrators to occupy more than one role in research administration, the total of endorsed roles (n=167) exceeds the number of respondents. In fact, 23 participants endorsed current responsibilities across all three categories of PARA. In small research programs, one individual may be responsible for nearly all of the roles across the research administration spectrum.

Table 3: Number of Respondents by Research Administration Role

Role in Research Administration	Number	Percent
Financial Compliance	38	39.6
Post-Award	86	89.6
Research Accounting / Research Finance	43	44.8

PROCEDURE

Institutional Review Board (IRB) approval was obtained from the University of North Dakota (Protocol ID IRB0002660) and the University of Notre Dame (Protocol ID 21-05-6635) prior to the recruitment of participants. Participants were solicited via email, the National Council of University Research Administrators (NCURA) professional group on LinkedIn, institutional listservs, and the Research Administration Discussion List (RESADM-L) listserv. A reminder message was submitted to the RESADM-L listserv two weeks prior to the closing date of the survey. Participants were encouraged to share the survey link with other research administrators and research accountants at their respective institutions. The survey link was available from Wednesday, May 26, 2021, through Friday, July 16, 2021.

RESULTS

Survey respondents were asked to endorse specific tasks that they perceived to be exceptionally burdensome. A score of three indicates the highest level of administrative burden, and a score of one indicates a low level of administrative burden. The most administratively burdensome tasks per PARA are delineated in Table 4. The number of PARA who endorsed any level of administrative burden associated with that duty is listed next to each task. Respondents were able to enter text responses to describe "Other duties not listed." The responses included: "cost share tracking," "monthly portfolio reporting," "invoicing/cash collections," "rethink participant support in a year of pandemic has been burdensome," "tracking grant progress and correlating milestones to project expenses and effort," "serving as a de facto personal grant accountant for my individual PIs although not in my grant description," and "PI transfers." Although the "Other" category was correlated with the highest levels of administrative burden, there was no consensus on a specific task or set of these tasks being the most burdensome.

Table 4: Ranking of Most Administratively Burdensome Tasks

Most Burdensome Tasks	Score	Number
Other duties not listed	2.43	7
Effort reporting	2.28	72
Updating internal policies to reflect federal regulations	2.25	65
Staying current with federal regulations	2.21	82
Current and Pending / Other Support	2.16	68
Single audit responses	2.16	43
Subrecipient monitoring	2.01	67
Research Performance Progress Reporting (RPPR)	2.00	62

Participants were asked to identify for which federal sponsors they managed grants, and of those federal sponsors, which they associated with the highest levels of administrative burden. A total of 93 participants responded to both sets of questions. The federal sponsors branded with the highest levels of administrative burden were DOD, DOJ, DOE, USAID, and HUD.

Table 5: Administrative Burden by Federal Sponsor

Federal Grant Sponsor	Acronym	Manage Grants	Endorsed Burden	Percent
Environmental Protection Agency	EPA	41	6	14.6
Institute of Museum and Library Services	IMLS	26	0	0.0
National Aeronautics and Space Administration	NASA	61	8	13.1
National Archives and Records Administration	NARA	8	0	0.0
National Endowment for the Arts	NEA	40	3	7.5
National Endowment for the Humanities	NEH	52	2	3.8
National Institutes of Health	NIH	89	28	31.5
National Science Foundation	NSF	85	15	17.6
U.S Agency for International Development	USAID	49	18	36.7
U.S. Department of Agriculture	USDA	54	14	25.9
U.S. Department of Commerce	DOC	38	9	23.7
U.S. Department of Defense	DOD	75	40	53.3
U.S. Department of Education	ED	62	21	33.9
U.S. Department of Energy	DOE	58	23	39.7
U.S. Department of Health and Human Services (Excluding NIH)	HHS	67	17	25.4
U.S. Department of Homeland Security	DHS	34	4	11.8
U.S. Department of Housing and Urban Development	HUD	20	7	35.0
U.S. Department of the Interior	DOI	32	4	12.5
U.S. Department of Justice	DOJ	54	23	42.6
U.S. Department of Labor	DOL	17	0	0.0
U.S. Department of State	DOS	33	3	9.1
U.S. Department of Transportation	DOT	29	4	13.8
U.S. Department of the Treasury	TREAS	19	1	5.3
U.S. Department of Veterans Affairs	VA	26	5	19.2

If a participant selected a federal grant sponsor as being administratively burdensome, they were asked to specify what made that sponsor particularly burdensome. Reasons for the perceived burden included inconsistencies across intradepartmental agencies, such as between the Army Reserve Office and the Office of Naval Research,

the level of detail required in proposal documents and annual technical and financial reports, and sponsor-specific systems that were not intuitive or were difficult to access. While some of the responses were too general to draw any meaningful conclusions (e.g., "Administration"), narrative responses are summarized for each sponsor.

SUMMARIES OF ADMINISTRATIVE BURDEN BY SPONSOR

EPA. Specific responses included "Supporting documentation (i.e. copies of invoices, expense reports, etc.) required for every invoice" and "Lack of knowledge on the part of the agency representatives requires additional time on my part to make them aware of federal regulations."

IMLS. None. It should be noted that in fiscal year 2018, only 115 new research grants were issued by IMLS and accounted for a mere 0.48% of research grants and contracts awarded to colleges and universities (USAspending, n.d.). Due to the limited availability of these awards, it is possible that the amount of administrative burden associated with these projects is underreported.

NASA. The rationales regarding why NASA research grants were burdensome included a reference to their portal as being "hard to navigate." Another wrote, "The NSPIRES system is a PI system so we have to obtain approvals internally in a separate system, then the PI can submit. Having to provide redacted salary information is additionally burdensome."

NARA. No respondents identified NARA as using particularly cumbersome processes related to research grants. However, in fiscal year 2018, only 42 new research grants were awarded to colleges and universities in the United States, accounting for just 0.18% of the total research grants during that fiscal year (USAspending, n.d.). It is possible that the limited scope of respondents prevented the identification of administratively burdensome federal grant procedures affiliated with this agency.

NEA and NEH. Only one respondent provided a rationale for why they correlate grants from NEA and NEH with burden. The same rationale was entered for both agencies and read, "Complex post-award requirements and challenges associated with accessing the systems."

NIH. Although NIH is an operating division of the Department of Health and Human Services (DHHS), due to the quantity of grants sponsored by NIH, it was broken out as a unique category for the purposes of this survey. During fiscal year 2018, 13.4% of new research grants and contracts issued to institutions of higher education were funded by NIH (USAspending, n.d.).

A total of 24 participants offered details on why they perceived NIH grants to be administratively burdensome. One-third of these participants (n=8) referenced the ever-changing and increasing number of regulations, guidelines, and forms as particularly burdensome. Several respondents singled out specific forms or processes as being cumbersome, such as the Research Progress Performance Report (RPPR) and its associated processes, the new Other Support form and resolving noncompliant publications in the National Center for Biotechnology Information NCBI. Additional responses included the lack of timely replies to policy and procedural questions and encountering conflicting advice provided by grants management specialists versus program officers (PO) within the agency and across institutes. Individuals identified a broad array of complicated procedures, such as managing the NIH salary cap, calculating PI effort, receiving reduced annual increments of awards to later be awarded the remaining portion a few days to weeks later, managing foreign influence reporting requirements, research compliance, and grant transfers between institutions.

NSF. Although 10 individuals reported reasons why NSF grants were so burdensome at the post-award stage, there was no consensus among respondents. Some cited the ever-evolving regulations and lack of sponsor

guidance as problematic. Other individuals cited the requirement of submitting post-award postdoctoral fellow mentor plans, rebudgeting requests, navigating parallel systems (Fastlane.gov and research.gov) throughout the grant lifecycle for the same grants, and the level of audit burden as being challenging.

USAID. Although USAID accounted for just 0.32% of new grants and contracts awarded to institutions of higher learning in fiscal year 2018 (USAspending, n.d.), 36.7% of survey respondents who reported managing grants from this sponsor associated the agency with high levels of bureaucratic inefficiencies. A total of 15 respondents offered details about the high level of burden. Due to the international research collaborations that are financed by USAID, respondents cited challenges with enforcing sponsor requirements on foreign institutions. Several PARA cited the prior approval process for budget expenditures that deviate from the proposed budgets, excessive regulations on top of Uniform Guidance, the audit process, and the excessively detailed financial reporting required by the sponsor. One respondent explained, "Lots of rules in addition to the CFR200 (sic)... they are very hands on and you have to ask permission to do pretty much everything. Most of this is due to a lot of their work being international so it's already extra burden but they make it a lot harder than it has to be." Others described a "large body of regulations on top of Uniform Guidance" and "very granular reporting requirements" as commanding excessive amounts of PARA attention. Another respondent identified the rebudgeting process as particularly cumbersome, writing, "The detail in which one must budget, justify, and heaven forbid, rebudget...the budget section was a nightmare, then rebudgeting turned out to be total PTSD."

USDA. Participants described a "not user friendly" financial reporting system that requires the use of different forms for the same data and to collect funding. Others noted the lack of consistency across programs within USDA, and compared to other federal sponsors, as requiring substantial effort to keep abreast of the changes in guidelines. One wrote, "All branches do things differently."

DOC. Of the explanations for what makes DOC administratively burdensome, a few themes emerged: the inflexible terms and conditions of the grants, overly detailed financial reporting requirements, and lack of consistency within the same agency. Criticisms included, "Having to draw by line item within one award," "Always wants purchase documentation. Never timely. Takes forever to get a response," and "Grant Administrators apply rules as interpreted and there is no consistency even within the same agency."

DOD. Identified as the most burdensome of federal grant sponsors by respondents in this survey, several central themes arose. The most-cited issues included the specialized contractual requirements, substandard online portals for submitting prior approval requests and drawing down funds, and the excessive financial monitoring of the burn rate, with some sponsors requesting monthly spend plans. Also noted were inconsistencies across agencies within the DOD (e.g., Office of Naval Research requirements versus Army Research Office), the Federal Acquisition Regulation (FAR) and Defense Federal Acquisition Regulation (DFAR) clauses in contracts that complicate contract negotiation and can delay the start of a project, and the inconsistent interpretation of sponsor-issued guidelines by sponsor personnel.

ED. Of the PARA who described burdensome procedures they encountered with ED grants, the most frequent concerns centered around communication—or lack thereof—with agency officials. Respondents noted a lack of response from program officials, and when a response is received, the lack of consistent application of sponsor policies. Comments included, "As (sic) a question and got three different answers. Took forever to get responses. Absolutely frustrating," "Poor communication from sponsor," and "Lack of knowledge of the part of the agency representatives requires additional time on my part to make them aware of the federal regulations." Others singled out Section 117 reporting (foreign funding to the institution) and the 524B financial report as particularly burdensome.

DOE. Multiple grant mechanisms are offered by the DOE, but some consistent concerns were noted in regard to the inefficiency of policies and procedures. Two respondents mentioned the Foreign National personnel restrictions as problematic, and two others cited the lack of sponsor responses as complicating the grant management process. For awards that require cost share contributions, respondents noted that the required financial reports were bogged down due to the way that the budgets are managed. The frequency and level of detail required for financial reporting, including detailed estimated carryover amounts, were cited as burdensome. One respondent explained, "The budget format they use also causes confusion and should be revised. Additionally, the cost share requirement is both a financial and administrative burden on universities. The financial reporting requirements are also inordinately burdensome. Particularly the requirement for cost share to be maintained at the overall percentage on each quarterly invoice, and for ARPA-E the requirement for backup documentation for cost incurred to be provided with each invoice. DOE-EERE and DOE-ARPA-E are the most burdensome agencies to work with, from proposal stage to award close out. They should consider easing these requirements for universities conducting research and development."

HHS (excluding NIH). The overarching theme involving HHS awards was the lack of consistency between its agencies and convoluted post-award terms and conditions. Respondents noted that some sponsors use some NIH forms, and the consistency is appreciated, but others do not. A respondent noted, "They always seem to be slower to adapt the standard practices that NIH is quick to absorb...I'm thinking of you, HRSA." Despite being subject to expanded authority, agencies within HHS require justification for relatively minor rebudgets or carryover. The strongest statement among those provided read, "SAMHSA is from the ninth circle of hell." No additional context was provided, but delving into this issue further may provide additional insights into the administrative burden associated with those grants.

DHS. Invoices and financial reports were cited as major areas of burden by two of the respondents, with one reporting, "They tend to look for reasons to reject items claimed for reimbursement and typically give nonsensical reasons for their rejects." Another respondent targeted the grants portal for FEMA, referring to it as "completely unusable" and noting that the requirements are "out of line with other major federal funders." Since only four participants shared insights on the burdens associated with DHS, it is unclear how pervasive the administrative burden is within the research grant lifecycle of DHS awards.

HUD. The chief complaint surrounding HUD awards centers around burdensome reporting practices. Per one respondent, the sponsor requires the submission of hourly timesheets for projects despite faculty not being hourly employees. Two others noted that the invoicing and financial drawdown system is complex because of the lack of guidelines and unintuitive website design. In fiscal year 2018, HUD issued just 0.15% of new research grants and contracts to colleges and universities (USAspending.gov, n.d.). Just six respondents provided explanations regarding their experiences with this sponsor, so the sample set is too small to draw definitive conclusions.

DOI. Although four respondents identified administratively burdensome practices within DOI grant management, no singular theme emerged. Each highlighted a different issue, ranging from lack of budget flexibility to inconsistent communication to the level of detail required for invoicing to a generally convoluted award process.

DOJ. The DOJ was identified as the second most burdensome sponsor in this survey. Two major themes emerged: the required but lengthy Grants Financial Management training, which is required to access the DOJ grants portal, and the JustGrants system is perceived as buggy and difficult to navigate. Respondents described the JustGrants system as "terrible," "not easy to maneuver," and "doesn't work." Respondents noted how much more inefficient this system made grant-related processes for all points of the research administration lifecycle. Others took exception to the lengthy award management training that is required to access their systems. One reported that the mandated training took approximately 15 hours to complete and that a "large percentage of the material was not applicable to my current job responsibilities and therefore I considered it a waste of my time."

DOL, DOS, DOT, TREAS, VA. Due to the limited number of agency-specific responses (n=0, 2, 3, 1, 4 respectively), coupled with the lack of specificity among most of the comments, no general trends were identified related to administrative burden in research grant management.

SUGGESTIONS TO AMELIORATE ADMINISTRATIVE BURDEN

A total of 53 respondents suggested methods to reduce administrative burden across research administration. Three predominant themes emerged: sponsors should standardize federal grant management systems, forms, regulations and cash management systems, reduce the frequency of changes to these same systems, forms, and regulations, and provide timely and consistent responses to inquiries submitted by PARA.

A substantial number of the suggestions centered around developing a singular electronic research administration (eRA) platform through which proposals, just-in-time, annual scientific reports, and financial reports may be submitted. In addition, recommendations called for a master version of Other Support, and for all publication references to be warehoused in this system that could be referenced as needed for proposals and annual reports. While the advent of SciENcv moves the needle in this direction, it does not yet encompass all these forms. Parallel processes across numerous platforms still exist. Calls for a standardization of effort reporting were notable, including some suggestions that this be tied into the singular eRA platform to save time for both PIs and research administrators. Respondents also noted the addition of eRA systems and regulations instead of streamlining them into a singular system. Some participants cited the development of agency-specific eRA systems (e.g., JustGrants. gov) instead of adhering to grants.gov as the primary proposal submission source.

Similarly, respondents cited the need for consistent terms and conditions across federal research grant sponsors. Although UG was supposed to provide regulatory guidance across all federal research grants, each federal sponsor has augmented the standard set of regulations with its own layer of regulations, creating contradictions in regulatory expectations between agencies. In an attempt to facilitate understanding of the regulatory differences across agencies, NSF developed a "Research Terms and Conditions Appendix A: Prior Approval Matrix" (National Science Foundation, 2020b). Although UG is updated approximately every five years, individual sponsors may implement additional terms and conditions on top of UG, causing the so-called "uniform" regulations to vary by federal sponsor with more frequency than the overarching parent regulations.

DISCUSSION

Since there is a limited body of literature pertaining to research administration, this study was developed with basic research questions in mind: According to PARAs, which tasks are the most burdensome? Which federal sponsors are correlated with the most intensive procedural inefficiencies, and why? What recommendations do research administrators have to mitigate administrative burden? How can these findings be employed to develop best practices for the field and to advocate for changes to federal research grant policies?

Respondents identified effort reporting, updating policies to reflect changes in federal regulations, keeping abreast of current federal regulations, Current and Pending / Other Support documents, and single audit responses as the most burdensome tasks associated with federal research grant management. Rockwell (2009) and Schneider et al. (2014) noted that PIs identified effort reporting as particularly cumbersome in the FDP surveys, which signals that this process is cumbersome for PIs and PARAs alike.

The federal research grant sponsors that were most frequently cited for administrative burden among PARA were DOD, DOJ, DOE, USAID, HUD, ED, and NIH. Some sponsor-specific issues were identified, such as the specialized contractual parameters associated with DOD, the mandatory financial management training affiliated with DOJ,

additional regulatory layers on top of UG for USAID awards, and the annual RPPR and associated forms for NIH. Several overlapping themes across sponsors emerged, such as frequently changing regulations or excessive reporting requirements. This is also consistent with identified areas of burden in previous publications (Cole, 2007; Kamensky, 2020; Mosley et al., 2020; Rockwell, 2009; Schneider et al., 2014).

Survey respondents submitted numerous ideas to reduce or eliminate substantial sources of administrative burden. However, the suggestions trended around a few central themes. Providing a singular eRA system for proposal submissions, scientific and financial reporting, and warehousing required related documents (e.g., Biosketches, Current and Pending) would ameliorate a substantial amount of this burden. Consistent with the recommendations offered by Mosley et al. (2020), the Federal Government should coordinate terms and conditions across all federal research grant sponsors and limit or eliminate agency-specific regulations that further complicate research administration processes. Ideally, more grant recipients should advocate for these changes at FDP meetings with the ultimate goal of precipitating regulatory changes across federal research grant sponsors.

LIMITATIONS

The existing body of literature related to administrative burden in research administration is limited. Due to this, the survey was developed to capture a broad sampling of areas of administrative burden related to federal research grants. Although grants and contracts are distinctive funding mechanisms, the survey did not explicitly define or differentiate between the two and respondents may have included perceptions of research contracts in their responses. Results may not be generalized to both funding mechanisms equally, so caution should be exercised when interpreting the findings.

The invitation to complete the survey was deployed to research administrators who subscribed to the Research Administration Discussion List (RESADM-L) listserv, those who were members of the LinkedIn NCURA professional group, and other colleagues via email and internal research administration listservs. The majority of respondents were from four-year public and private institutions, with very few respondents from two-year institutions, HBCUs, TCUs, and Women's Colleges, so the identified areas of burden may be specific to larger, predominantly white research institutions and skewed toward those who were aware of and/or had the time to engage with these resources. Although general trends were identified, providing a role-specific survey to a broader group of research administrators or to PARAs employed at institutions with the same Carnegie Classifications may yield different results. As with all survey designs, self-reported data is subject to biases and omissions, so repeated deployment of a similar survey would need to be performed and analyzed to establish the reliability of the findings.

SUGGESTIONS FOR FUTURE RESEARCH

Specific subsets of research administrators and institutions of higher learning should be studied to identify unique sources of administrative burden. Do PARA at colleges with low research activity experience the same types and levels of administrative burden as those at R1 or R2 institutions? What differences are observed at HBCUs, TCUs, HSIs, or Women's Colleges that differ from Predominantly White Institutions (PWI)? If disparities are noted, what systematic changes are needed to provide a more equitable administrative experience for PARA across all institutions?

Additional topics for future research should focus on the funding mechanisms themselves. Do PARA perceive different levels or types of administrative burden related to research grants versus research contracts, and if so, in what ways? How is administrative burden reduced when managing modular grants?

Finally, opportunities for studying administrative burden abound due to recent changes in federal policy. How do recent changes to access to publications impact PIs and institutions? How cumbersome are the new NIH data management requirements and what are best practices for mitigating risk? How can PARA and PIs better leverage the collective knowledge and advocacy of COGR, FDP, the Association of American Universities (AAU), and other related groups to reduce administrative burden in federal research grant management?

SUMMARY

The research administration process, particularly in relation to federal grants, presents a virtual cornucopia of opportunities for reducing administrative burden. From the proposal to the grant closeout phase, several areas require analysis to develop more contemporary, streamlined, and efficient procedures. As PIs are increasingly pressured to obtain externally funded grants to support research, it is reasonable to anticipate that PIs will expect an increasingly robust team of research administrators to facilitate the applications for and management of research grants. Since universities have already increased their own spending for research-related support by $7 billion to augment specialized units of research administration from 2010 to 2017 (Kamensky, 2020; Mosley et al., 2020), this figure will likely continue to expand unless the existing body of regulatory and procedural demands that dictate the research administration process are streamlined. Institutions that lack the resources to employ full complements of skilled research administrators are in jeopardy of losing out on research funding, which runs the risk of slowing new developments in science and technology. While faculty are capable of handling the administrative tasks, every minute they spend completing paperwork is a minute less spent on actual research. If the greater public was aware that some faculty report spending nearly half of their federal research time on paperwork instead of actively researching cures for cancer, infectious diseases, safety mechanisms, or societal concerns, how would they respond? The intention is to shine a light on these inadequacies and to advance solutions to mitigate administrative burden and procedural inefficiencies in the federal research grant process.

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