The FDP Faculty Burden Survey

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ABSTRACT

To better understand the administrative burdens placed on faculty who perform research, the Faculty Standing Committee of the Federal Demonstration Partnership (FDP) invited 23,325 full-time faculty members who were Principal Investigators (PI) or Co-Principal Investigators (Co-PI) on active federally funded research grants to participate in a web-based survey that contained questions on the nature, size, and impact of the administrative tasks associated with their research projects. The responses of the 6,081 faculty respondents show that the administrative burden on faculty is very significant: 42% of the time spent by an average PI on a federally funded research project was reported to be expended on administrative tasks related to that project rather than on research. This administrative burden does not stem from one or a few exceptionally onerous tasks, but instead reflects the cumulative effect of the many administrative burdens imposed by different funding agencies, different offices within agencies, auditing and accrediting agencies, and academic institutions. The lack of institutional assistance contributes to the administrative workload of the faculty. Many burdens are remarkably constant across funding agencies, universities, disciplines, and faculty subgroups. The report documents the negative effect reported for these administrative burdens on the productivity of researchers, the careers of young faculty members, and the training of students.

INTRODUCTION

Every research administrator has probably heard her or his faculty members complain that the administrative burdens associated with their research are excessive, are often redundant or unnecessary, and decrease their productivity and compromise their ability to do science and teach their trainees. While it might be easy to dismiss this as "the usual faculty whining", these complaints are based firmly in reality.

Virtually everyone involved in research, including the researchers, understands that research involves both administrative tasks intrinsic to the research itself and also administrative tasks essential to ensuring the validity of the research findings, the integrity of the research process, and the appropriate expenditure of research funds. Problems, and indeed disasters, can result when carelessness, naïveté, or malevolence compromises the safety, ethical, scientific, or fiscal integrity of research projects. The research enterprise must therefore strive to find a balance by establishing oversight processes that adequately protect the integrity of the research but minimize the costs and loss of productivity associated with that protection.

WHAT IS THE FDP?

The Federal Demonstration Partnership (FDP) was created in 1988 to address this problem. Sponsored by the National Academies, the FDP is a cooperative initiative among federal agencies and academic institutions that receive federal funds to support research. The purpose of the FDP is to reduce the administrative burdens associated with federally-sponsored research grants and contracts. The FDP currently has 120 academic members, ranging from large research universities to emerging research institutions. Private and public schools, statewide college systems, medical schools, and health-oriented campuses are all represented. Nine federal agencies are currently members. Five organizations interested in research administration (National Council of University Research Administrators [NCURA], Council on Governmental Relations [COGR], Society of Research Administrators [SRA], Association of Independent Research Institutes [AIRI], and American Association of State Colleges and Universities [AASCU]) are also affiliated with the FDP. The full list of members may be found on the FDP website.[1]

The FDP is unique in that each institutional member designates three official representatives: an administrative representative, a technical representative, and a faculty representative. All are encouraged to participate actively in the three meetings held by the FDP each year and in the FDP activities occurring between meetings. The FDP offers a unique venue for faculty members to interact with university administrators and federal agency representatives, to discuss faculty issues related to research administration, and to identify issues and problems that span scientific disciplines, funding agencies, and institutions. Past FDP successes include streamlining the terms and conditions for National Institutes of Health (NIH) grants, developing the "expanded authorities", piloting increased budget flexibility on NIH grants, and ending the requirement that NIH study section members get individual DUNS numbers and register as government contractors with Central Contractor Registry (CCR). However, many problems and issues remain. The Faculty Burden Survey (Decker et al., 2007) was an important step in identifying and attacking these problems. A summary of the survey findings and a full report on the survey, which includes details of the survey techniques, responses, analyses and conclusions, can be found on the FDP website.[1]

THE FDP SURVEY

All 99 of the research institutions that were FDP members in 2005 were invited to participate in this survey. The survey was reviewed and approved by the Institutional Review Board (IRB) at Northwestern University, the PI's institution. To allow reviews of the survey by IRBs at the participating institutions, the FDP administrative representatives at each participating FDP school submitted the IRB protocol for review (or determination of exemption) at his/her school. The first lesson from the survey was the degree of difficulty involved in the IRB process: some schools

could not complete their IRB reviews in time to participate in the survey. Others decided not to participate. The 73 institutions that agreed to participate in the survey identified 23,325 full-time faculty members who were PIs or Co-PIs on active federally-funded research grants. Invitations, links to the web-based survey and reminders were sent to these individuals in fall 2005. At the close of the survey, 6,081 valid responses had been received.

The survey posed a series of multiple-choice questions about the respondents' academic positions, research roles, area of research, other academic activities, and institutions, in order to obtain demographic information on the responders. They were then asked a series of multiple-choice questions about the nature of their academic activities and time spent on those activities. The respondents next answered more detailed multiple-choice questions about their federally-sponsored research, including area of research activities, time spent on research and related administrative activities, and magnitude of the burden of 25 specific administrative tasks associated with research. The survey also requested descriptions of the level of administrative support received for each of these administrative tasks. In addition, the survey included opportunities for free-form verbal comments so that responders could expand on or explain their responses or provide additional information. Hundreds of comments were received. These verbal comments were used to develop some of the conclusions presented in the survey report. Respondents were assured that their responses and comments would remain anonymous and would not be linked to named institutions. Survey results therefore reflect the information provided by full-time faculty members identified by their participating FDP institutions as engaged in federally-sponsored research, who confirmed via their responses their engagement in such research, and who chose to respond to the survey.

All responders had federal grants: 90% were PIs on at least 1 grant and 10% were Co-PIs; 44% reported multiple roles on different projects. As expected from the general demographics of academic researchers, most identified themselves as male (68%), white (77%) and from large research institutions that offered an array of doctoral programs and included a medical school (71%). Most were in the sciences, although a wide spectrum of disciplines was represented (Figure 1). The rank and status of the respondents included: 22% assistant professors, 24% associate professors, and 54% full professors. Most respondents (67%) were tenured; 22% were on the tenure track but not yet tenured. The remainder were either in non-tenure-track positions or at institutions that do not have tenure. Most responders (64%) did not hold administrative roles; those who did were department chairs, center directors, associate deans or faculty administrators. These PIs were supported by a wide range of federal agencies: 49% reported NIH, 32%, National Science Foundation (NSF), and 11%, Department of Defense (DoD) funding; 48% reported funding from other federal agencies (many were supported by more than one agency). The median level of federal funding (total direct cost dollars as PI or Co-PI) increased with increasing rank from $150,000 for assistant professors to $260,000 for full professors.
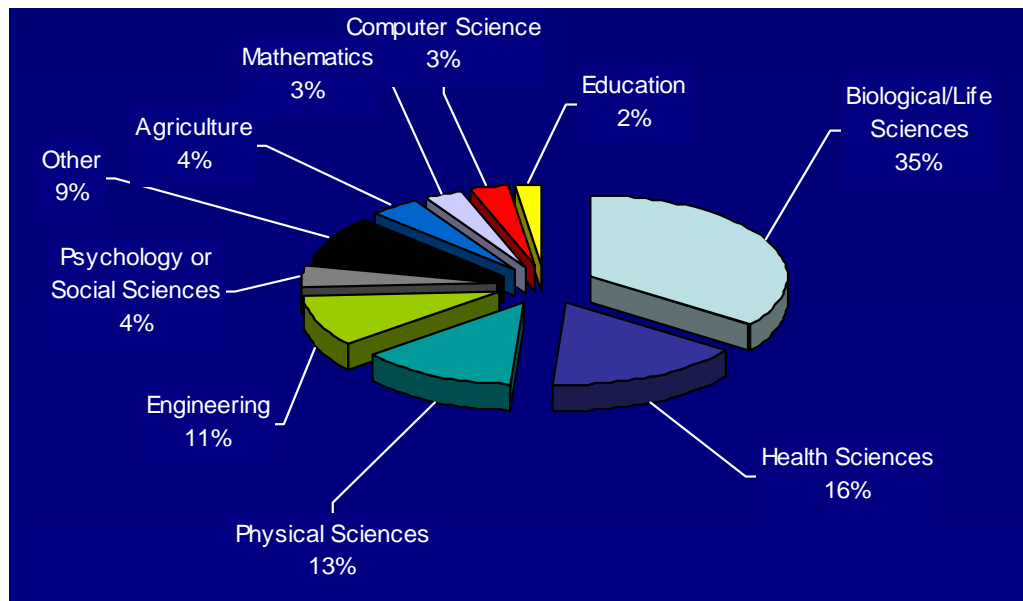
Figure 1. Areas of Responders' Discipline (Decker, 2008; data from Decker et al., 2007)

The respondents reported spending an average of 58% of their time on research (44% actively conducting research plus an additional 14% mentoring students and postdocs who were performing research). Their remaining time was spent on teaching (20%), professional service (e.g., grant and manuscript reviews, work with professional societies, and work on compliance committees) (8%), other service (e.g., clinical, departmental and university service) (11%), and other duties (3%). The survey focused on the time that these faculty devoted to their federally sponsored research and on the administrative burdens associated with those federally sponsored research projects.

Findings from the FDP Survey

For their federally-funded research projects, the faculty were asked to estimate the percentages of their time devoted to research (including mentoring of trainees performing research on the project, designing studies, active research, data analysis, writing and publishing papers, and presenting research results), pre-award activities (including budget preparation, applying for and obtaining regulatory approvals, protocol development, and preparing safety/security plans) and post-award activities (including purchasing supplies and equipment, managing personnel, complying with regulations, monitoring safety/security, and writing reports for the funding agencies). The most important finding is that, on average, faculty reported spending 42% of the time allocated to their federally-sponsored research projects on administration activities related to those projects, rather than actual research activities. This means that the time available for these PIs to perform research and to guide young researchers working on the project was only 58% of the time funded by the agency. The direct cost of this administrative burden is high. If our respondents spent 42% of the time supported by their grants on administrative tasks, one can estimate from their reports of the total time spent on this research, and published data on typical faculty salaries for the period, that a total of $97,000,000 in PI/Co-PI salary support was actually spent on administering these grants, rather than on research (Decker, 2008).

Remember that this survey considered only project-related, grant-funded administration performed by the responding PIs and Co-PIs. It did not include administrative tasks performed by other faculty supported by the grant, laboratory staff and trainees supported by the grant, institutional administrative staff, or the PI under support from other funding sources. Moreover, it does not consider other research-related administrative tasks that are not project-specific and therefore cannot be charged directly to federal grants. It therefore excludes writing and submitting new and competitive renewal applications, service on study sections, service on institutional compliance committees (IRB, Institutional Animal Care and Use Committee [IACUC], safety committees, etc.) and attending general research-related administrative training sessions.

The remaining questions in the survey examined 25 specific administrative burdens to assess their impacts on the faculty responders. Faculty members ranked each burden on a scale ranging from 1 (none) to 5 (a great deal). The survey also asked faculty members to describe the level of administrative support received for each of these administrative tasks, with 5 possible rankings ranging from 1 (none) to 5 (complete assistance, someone else does this for me). The numerical scores for each of the 25 potential burden categories were analyzed to determine the average magnitude of each burden for all respondents and also for only those respondents who reported incurring the specific burden. The data were also analyzed to determine how the 25 burdens varied for different funding agencies, for different institutions, for different areas of research, and by the rank, gender and ethnicity of the faculty members. The survey findings are summarized here; the details can be found in the FDP report (Decker et al., 2007).

Greatest Administrative Burdens. Averaged across all respondents, including those who reported no burden in a specific area, the top administrative burdens (in order of decreasing average magnitude) were:

1. Grant progress report submission
2. Personnel hiring
3. Project revenue management
4. Equipment and supply purchases
5. IRB protocol approvals and training
6. Training personnel and students
7. Personnel evaluations

However, if human subjects or animals were used in the research, then IRB or IACUC became the #1 administrative burden for that investigator. When only those who responded that they had some burden in a specific area were included in calculating the size of that burden, the burdens that received the highest ratings were:

1. IRB protocols and training
2. IACUC protocols and training
3. Training personnel and students
4. Grant progress report submission
5. IRB compliance issues
6. IACUC compliance issues
7. Personnel hiring
8. Project revenue management
9. Health Insurance Portability and Accountability Act (HIPAA) compliance

10.   Subcontracting and collaborations
11.   Safety planning and monitoring
12.   Equipment and supply purchases

This ranking shows the importance of those administrative burdens that are most closely associated with the performance of the research in determining the total administrative burden on faculty.

Variations in Administrative Burdens. Some burdens were remarkably consistent across all funding agencies, all types of academic institutions, all research disciplines, and all faculty demographics. For example, the mean burden for grant progress reports was 3.32, and the extremes of the values for all subcategories examined were 2.94 and 3.51. The burden of this task was similar for all agencies, all universities, and all faculty subgroups. In contrast, some burdens varied dramatically. The average burden for patents and copyright applications was only 1.46, implying that most respondents reported no burden (a value of 1); however, the mean burden level assigned by engineering faculty was 3.58.

Many tasks, such as progress reports, personnel hiring, and project revenue management, were uniformly burdensome across all funding agencies. Other burdens varied significantly with the funding agency (Table 1). Some agency-to-agency variation reflects differences in the research disciplines funded by different agencies. For example, administrative tasks associated with human subjects' protection rose to the top of the list of onerous burdens for those agencies frequently funding research with human subjects. Other agency-to-agency differences, such as those seen for effort reporting, subcontracting, and purchasing (Table 1), may suggest areas in which the good practices of some agencies might be used as models to improve procedures at other agencies.

Table 1. Variation in the Severity of Specific Burdens by Funding Agency

Funding Agency with High Burden	Administrative Burden
The top three overall burdens were the same across all funding agencies	Grant progress report submissions Personnel hiring Project revenue management (all but DOC)
DoD, DOE, DOI, EPA, NASA, USDA	Equipment and supply purchases
EPA, ED, DOC, DOI	Subcontracting and collaborations
ED, HHS, NIH	IRB protocol approvals and training
HHS, NIH	IRB compliance issues
HHS	HIPAA compliance
DOC, NIH	IACUC protocols and training
DOI	Cost accounting
NIH	Training personnel and students
USDA	Time and effort reporting

Note: The burdens shown are those for which an average burden ≥ 2.7 was reported by the respondents receiving funding from that agency (data from Decker et al., 2007).

The burdens associated with some tasks varied by faculty demographics (Table 2). Some of this variation reflects inherent differences in the tasks associated with specific disciplines. For example, the three tasks related to the protection of human subjects were all rated as highly

burdensome by researchers working in psychology, the health sciences, and the social sciences, but were less burdensome to those whose research was in other areas. Patents and copyrights were a large burden primarily for engineers. Other variations according to discipline may reflect differences in the requirements and procedures of the federal agencies funding research in different areas.

Overall, junior faculty and non-tenured faculty reported significantly greater administrative burdens than senior faculty (Table 2). In addition, women and minority faculty members reported significantly greater administrative burdens than other faculty subgroups (Table 2). These reports may in part reflect a lower level of institutional support for the research efforts of junior faculty, non-tenured faculty, women, and minority faculty, because respondents in these PI subgroups also reported lower levels of administrative support for their research from their institutions. This finding agrees with those in other reports which show that levels of institutional support and administrative support often vary by academic rank, ethnicity and gender (National Academy of Sciences, 2007).

Many administrative burdens, such as grant progress reports, varied remarkably little across different schools. Other administrative tasks exhibited greater variation from institution to institution (Figure 2). Faculty at medical schools reported more burdens and a greater cross-section of burdens than faculty at other types of institutions. Faculty at emerging research institutions (schools receiving less than $10 million/year in federal funding) reported greater administrative burdens, reflecting the lack of institutional support for research at these schools. Faculty at private and public universities appeared to have different spectrums of burdens. Faculty at public institutions reported significantly greater burdens related to financial administration than faculty at private institutions, while faculty at private institutions reported greater burdens for administrative tasks closely associated with the research process (IRB, IACUC, HIPAA, laboratory safety, chemical inventories, Conflict of Interest [COI]).

The implications of some variations between schools are unclear. For example, the variation in IRB-related burdens shown in Figure 2 could reflect the development and implementation at some schools of streamlined procedures for submitting and reviewing IRB protocols, or it could simply reflect differences in the spectrum of research occurring at the different schools (e.g., invasive, potentially high-risk medical protocols at some institutions, contrasting with a predominance of low-risk survey studies at other schools). Because the IRB protocol under which the Faculty Burden Survey was performed required institutions to remain unidentified, in order to protect faculty from potential retribution, specific schools cannot be identified and contacted to examine the basis for these variations.

Table 2. Variation in Severity of Some Specific and Highly Variable Burdens by Faculty Subgroup

Burden	Faculty Subgroup(s) Ranking Burden as <u>large</u>
IRB protocols and training	Psychology Social Science Education Private schools Medical institutions Not on tenure track On tenure track, not tenured No tenure system Women Underrepresented minorities Assistant professors Associate professors Faculty with administrative roles
IRB compliance issues	Clinical faculty Health sciences Psychology Education Medical institutions Not on tenure track No tenure system Women
HIPAA compliance issues	Clinical faculty Health Sciences Medical institutions
Patent and copyright applications	Engineering
Subcontracting and collaborations	Engineering Education
Training personnel and students	Biomedical/life sciences Medical Institutions Asian/Pacific Islanders Underrepresented minorities On tenure track, not tenured Assistant professors
IACUC protocols and training	Biomedical/life sciences Medical Institutions
Safety training, planning, and monitoring	Biomedical/life sciences Asians/Pacific Islanders

Note: Faculty subgroups shown are those for which the average ranking for that subgroup was ≥ 2.7. Data from Decker et al. (2007).
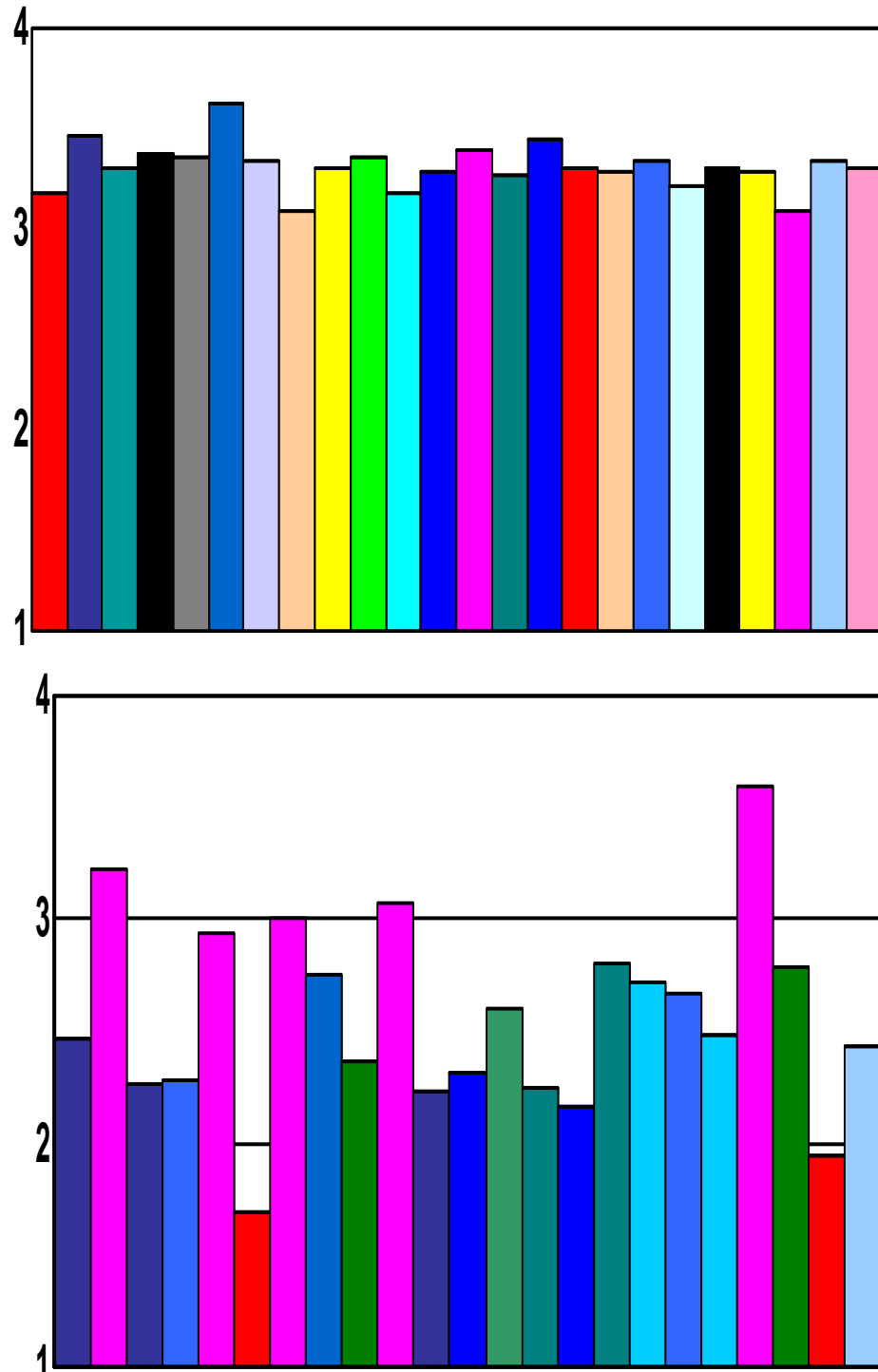
Figure 2. Variation across Schools in Average Burden Reported for Grant Progress Report Submissions (top) and for IRB Protocol Approvals and Training (bottom)

Note: There is little variation between schools in the burden associated with progress reports, but large variation for IRB protocols. 1 = "no burden". 5 = "a great deal". Averages shown include those who reported no burden for the specific task.. Bars represent different schools (only schools with more than 100 respondents are shown). Redrawn from Decker et al. (2007).

Sources of Administrative Burdens. There is no single cause for the administrative burden on the faculty—the cumulative burden comes from many sources. The faculty recognized and commented on the fact that some administrative burdens are inherent in the research process and could never be eliminated. Other administrative burdens result directly from federal regulations. Additional burdens are created by differences in the interpretation or implementation of these regulations by different federal agencies, and sometimes even by different offices within individual agencies. Universities increase the burden by adding other requirements and by using non-optimal approaches to implement administrative tasks. Universities often appear to be driven to "go beyond the regulations" by audits, fears of audits, and the differing interpretations of different auditors (different auditors from the same agency as well as auditors from different agencies). Even more burdens are derived from the requirements of local and state governments, the requirements of accrediting agencies such as the Association for Assessment and Accreditation of Laboratory Animal Care (AAALAC) and the Association for the Accreditation of Human Research Protection Programs (AAHRPP), the actions of advocacy groups, and the activities of other external agencies.

Variations in the requirements and procedures of different institutions multiply the burdens for PIs of projects such as multi-center clinical trials and multi-component research projects that span different institutions. The distinct requirements of the Veterans Affairs (VA) system create considerable duplication of compliance efforts and greatly increased burdens for those PIs whose research projects involve patients and/or facilities at a VA hospital as well as its affiliated university.

Some of the burden borne by faculty members results from a lack of institutional support. Faculty reported very low levels of institutional support across all administrative tasks, with only financial tasks reaching average scores as high as "some assistance". Faculty reported the most assistance with issues such as payroll, budget transfers, cost accounting, cost sharing agreements, and project revenue management. They reported the least assistance with administrative activities closely related to their research, such as COI monitoring, grant progress reports, patent and copyright applications, intellectual property applications, and burdens related to the use of human subjects or animals. The effect of the lack of institutional support is illustrated by the ranking on personnel evaluations: faculty ranked this as the seventh most burdensome task, and also noted receiving the second lowest level of assistance in performing this task (between "no assistance" and "very little assistance"). Variations in institutional support by discipline, institution, faculty rank, ethnicity, and gender were evident in both the numerical ratings and faculty comments.

An overwhelming 97% of the faculty reported that some of the time they spend managing federal grants could be conducted effectively by administrative personnel. It should be noted that these individuals would not be secretaries, but rather highly trained project managers with expertise in the area of the research. With more support for project management, 65% of the faculty believed they could devote at least 3–4 additional hours per week to research and 20% felt they could spend an additional 7 hours or more to research each week. Many faculty (75%) would be willing to allocate direct costs from their grants to pay for such assistance if this were allowed.

While the ultimate responsibility for the oversight of a research project rests with the PI, many routine administrative tasks could be performed equally or even more effectively by others working under the PI's supervision. The possibility of and mechanisms for allowing more delegation of these routine administrative tasks to project managers and other appropriate

administrative personnel should be explored by universities and funding agencies. There are significant cost savings, as well as efficiencies, to be gained through such delegation, because the staff salaries would generally be much lower than the salaries of the faculty now performing these tasks. Discussion of this possibility is currently a focus of activity at the FDP.

Overall, 84% of the faculty reported that the administrative burdens associated with their research had increased in recent years. This reflects multiple factors, including the increase in the complexity of the documentation associated with federal compliance mandates in areas such as financial management, animal care and use, COI, and human subjects' protection as well as a general decrease in the secretarial and administrative support available to university faculty.

A hidden factor contributing increasingly to the administrative burden on faculty is the expanding use by both universities and federal agencies of web-based administrative systems. Many of these require the PI to personally log onto password-protected systems on a regular basis to retrieve information about their research projects and to enter routine, repetitive information about those projects. These systems transfer to the PI routine information-management tasks that were once delegated to others. The poor performance and unreliability of all-too-many of these web-based systems needlessly add to the faculty's administrative burden. The impact of these web-based systems also extends to areas of faculty burden not covered in the Faculty Burden Survey. The systems now used by many agencies for the submission of grant applications require action from the PI at critical moments during the submission process and do not allow delegation. Most web-based grant review systems require reviewers to personally download the applications to be reviewed and to personally upload their numerical scores and reviews, and do not allow delegation of these time-consuming information-transmission tasks to an assistant.

These "improved" web-based systems have benefits to funding agencies and universities, but they also require faculty members to perform data entry and retrieval tasks personally, in those physical locations where fast, reliable, secure Internet connections and high-speed computers are available. Non-optimized user interfaces, the use of incomprehensible administrative terms and coding systems, slow processing of information by central servers, system failures, and connection failures all produce major, and unnecessary, burdens for faculty using these systems. The costs of the increased involvement of faculty in routine information management tasks, including the resulting decrease in faculty productivity, should be considered whenever funding agencies and academic institutions assess the cost/benefit ratios associated with the use of web-based systems for grant submission and review, compliance reporting, or project management.

The number of occasions on which "training" is cited as a burden by faculty respondents to this survey should likewise raise cautionary flags. In this context, "training" does not include the critical faculty activities of teaching, mentoring, and guiding their trainees as they perform their research. It includes only the compliance training courses and certifications needed to satisfy compliance requirements. While everyone would agree that appropriate training in many areas is needed to ensure the safe and responsible conduct of research, the author suspects that virtually all researchers can readily identify areas in which their own training and certification requirements long ago passed the point where they added value and became merely continuing, annoying burdens. Similarly, maintaining the training, retraining, certification, and re-certification records of the research team has become a major burden for PIs. Considerations of the need for additional training modules and for annual retraining sessions should give greater regard to the costs of the faculty's time and to the true educational value of the "training", and should acknowledge that the benefits derived from a yearly retraining module decrease every year that the researcher retakes

the identical module. We must ask ourselves when retaking an annual course ceases to be "training" and instead becomes only "administrivia" that satisfies a compliance requirement but provides no educational or practical benefit.

CONCLUSION

In conclusion, the FDP Faculty Burden Survey shows that faculty members who serve as PIs on federally-sponsored research report that they actually spend 42% of their federally-funded research time performing administrative tasks related to that research. This does not result from any single readily-identifiable and unreasonable burden that might easily be reduced or eliminated. Rather, the pressure comes from many sources, producing "the death of a thousand cuts". Solving this problem will therefore require a coordinated effort from government agencies, auditing and accrediting agencies, universities, and researchers.

Real and very significant costs are associated with the administrative burdens on faculty. These costs are divided among the stakeholders in the research enterprise. The federal sponsors pay some: 42% of the salaries they pay to PIs and Co-PIs through their grants actually pays for time spent by the PIs on performing administrative tasks directly associated with those projects. Reducing these administrative tasks would allow researchers to perform more research with the effort funded by the grants. This would be a valuable outcome in a time of limited federal resources. The universities bear some costs because the efforts of their faculty are diverted from other, more meaningful, teaching and research activities in order to perform data entry and data retrieval tasks. Society bears a cost when the efforts of talented, highly educated scientists and physicians are diverted from research and teaching to perform routine administrative tasks. The faculty themselves bear the cost of excess administrative burdens that impact their lives and families.

Because the administrative burdens on women and on minority faculty members are greater and the level of administrative support for these faculty members is lower, as described above, administrative burdens have disproportionate impacts on women and minorities and thus create barriers to improving diversity in the scientific workforce. The administrative burdens also disproportionately impact junior faculty, thereby discouraging these young researchers from remaining in academia and endangering the future academic workforce. The administrative burdens also divert faculty time from their trainees and affect the training of future scientists. In this survey, 62% of the respondents felt that students were less likely to pursue academic careers now than in the past. The faculty comments noted multiple reasons for this, but to quote one faculty member during a discussion of this problem at an FDP meeting, "They've seen what we *really* do and they don't want to do that."

There is great gain to be obtained from reducing or eliminating unnecessary administrative burdens, especially those burdens that can be minimized by streamlining cumbersome procedures, harmonizing duplicative requirements, or reducing onerous administrative burdens associated with activities that pose only minimal risk. Potential gain could be derived from identifying and replicating best practices at different funding agencies and at different academic institutions. Potential gain would stem from harmonizing the requirements of different funding agencies, different auditing and accrediting agencies, different academic institutions, and different offices within agencies and universities. The negative impacts of non-optimal web-based systems that require the PI to perform routine data entry and retrieval tasks should be considered. The real

educational value of training and retraining modules and the costs of the time required to take them should be considered in determining whether their cost/benefit ratios are reasonable. Savings could also accrue from providing faculty with adequate administrative support for their research projects.

In a time of limited resources, efforts to reduce unnecessary expenses associated with research and to improve the productivity of the research enterprise should be a top priority for everyone involved in research and research administration. Reducing the administrative burden on the faculty who perform research would accomplish both goals.

ACKNOWLEDGMENTS

ENDNOTE

1. Federal Demonstration Partnership. Washington, DC. Web site: http://www.thefdp.org/

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