Supporting Statement Part B: Sampling Plan

This sampling plan is being submitted to comply with the OMB PRA. The following describes how the sampling plan provides each of the following items required under Part B: Collections of Information Employing Statistical Methods.

1. *Description of the potential respondent universe and any sampling or other respondents selection methods.*

   Section 4: Sampling Frame and Population (pg. 4) describes the sampling frame. The sampling frame is based on a DOE database of grants, and the selection of respondents is through a stratified random sampling procedure, as described in Section 5: Method of Sampling Selection (pg. 10).

2. *Procedures for the collection of information.*

   Information will be collected by means of an online survey, as described in Section 6: Design of an Online Survey (pg. 11).

3. *Methods to maximize response rates:*

   Section 7: Implementation Feasibility (pg. 12) describes the follow-up procedures intended to increase response rates. These include the sending of an introductory letter, and follow up via email and phone calls.

4. *Tests of procedures or methods*

   The online survey was pretested to three Principal Investigators (see pg. 12) to ensure the clarity of the survey.

5. *Consultant's Contact information:*

   This sampling plan was developed by Dr. Albert Lee, who will also oversee the analysis of the sample.

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   Additional expertise was provided by Dr. Frauke Kreuter of the Joint Program in Survey Research at the University of Maryland at College Park, and Dr. Robert Gould of the Department of Statistics at the University of California at Los Angeles.

1. Introduction

This is a sampling plan for the Department of Energy (DOE) Technical Manpower Survey for the 2005 academic year.[1] This plan provides:

1. An overview of sampling theory in the context of the survey's objectives,
2. A description of the sampling methodology,
3. Method of implementation, and
4. A random sample for survey.[2]

This sampling plan consists of six subsections. These subsections are:

1. Background and objectives,
2. Stratified random sampling,
3. Sampling frame and population,
4. Method of sampling selection,
5. Online Survey design, and
6. Feasibility implementation.

2. Background and Objectives

DOE Office of Science has tasked Summit Consulting, LLC, (Summit Consulting) to design and implement an online survey to estimate the total technical manpower that was supported by DOE basic science grants in the 2005 academic year. The total technical manpower refers to the full time equivalent (FTE) and head count of undergraduate and graduate students, post-doctoral fellows (post-docs), principal investigators (PIs), non-technical personnel and administrative staff employed by DOE grants. In addition to estimating these quantities, the online survey is also to estimate the number of Ph.D. graduates in June 2005 that have received DOE grant support in the 2005 academic year.

Precise estimates of these quantities are consistent with the mission of DOE Office of Science. Department of Energy Organization Act (Public Law 95-91, as amended) Sec. 209 defines the duty and the responsibilities of the Director of Office of Science to include:

1. Advising the Secretary with respect to the physical research program transferred to the Department from the Energy Research and Development Administration;
2. Monitoring the Department's energy research and development programs in order to advise the Secretary with respect to any undesirable duplication or gaps in such programs;
3. Advising the Secretary with respect to the well-being and management of the multipurpose laboratories under the jurisdiction of the Department, excluding laboratories that constitute part of the nuclear weapons complex;

[1] For the purpose of this sampling plan, the 2005 academic year is between July 1, 2004 and June 30, 2005.
[2] See Appendix A.

4. Advising the Secretary with respect to education and training activities required for effective short- and long-term basic and applied research activities of the Department;
5. Advising the Secretary with respect to grants and other forms of financial assistance required for effective short- and long-term basic and applied research activities of the Department; and
6. Carrying out such additional duties assigned to the Office by the Secretary relating to basic and applied research, including but not limited to supervision or support of research activities carried out by any of the Assistant Secretaries designated by section 203 of this Act, as the Secretary considers advantageous. [42 U.S.C. 7139]

Items 4, 5, and 6 indicate that the Office of Science has the responsibility to manage grants and financial assistance concerning education and training activities in basic sciences. Part of the evaluation of the performance of these grants and other forms of financial assistance is the number of technical manpower supported by them. Estimates of the number of graduate students, post-doctoral fellows and doctoral graduates supported by these grants have been a perennial feature in the department's annual budget requests to Congress.[3] Thus, a precise quantification of technical manpower supported by the Department's grants is consistent with the management objectives of the Office of Science.

Currently, no statistically valid estimates of technical manpower supported by the department's grants exist. The total number of technical manpower supported by the department's grants is based on forecasts by the grant recipients (i.e., PIs) at the time when the grants were initially funded. This estimate is unreliable because it is based on the best guess of the PIs at the time of funding. While the PI's initial estimate could be accurate at the time of the grant's funding, the reliability of the initial estimate decreases as the grant matures. Further, the forecasts by the PIs are subjective. Therefore, it is not possible to quantify the inaccuracies with any confidence.

Moreover, the unit of accounting is inconsistent across grant proposals. While some PIs reported their estimates of technical manpower supported by the department's grants in full time equivalent (FTE), other PIs reported their estimates of technical manpower by head count without taking into consideration share of support, which are frequently less than full-time. This inconsistency of unit of accounting could cause double counting and other inaccuracies in the department's annual budget requests to Congress. Thus, the current estimate of technical manpower supported by the department's grants is only a best guess. This estimate lacks the rigor of an estimate produced by a survey based on an appropriately designed sampling plan.

Therefore, the purpose of this survey is to

1. Produce a statistical valid estimate of technical manpower support by the department's grants in the 2005 academic year, and
2. Quantify the uncertainty associate with this estimate due to sampling error.

[3] For example, see page 23 of Basis Energy Science's FY 2006 Budget Request to Congress.

3. Stratified Random Sampling

In principle we could achieve these objectives by questioning *all* of the principal investigators of all active awards. However, this is laborious and expensive. Instead we survey a random sample of principal investigators and use their responses to estimate the desire quantities for the entire population. A simple random sample, in which every same-size subset of the population is equally likely to be included in the sample, produces estimates with quantifiable precisions.

Simple random samples are themselves too expensive because they require a relatively large sample size to achieve the desired level of precision. For this reason, modifications of this basic sampling scheme are implemented to produce equally accurate estimates with a smaller sample. One method to achieve efficiency gains is to partition the population into strata, and to select a simple random sample from each of these strata. A stratified random sample produces a more precise estimate about the population because it is frequently possible to divide a heterogeneous population into strata that are internally homogenous.[4] Thus, the goal of stratification is to partition the population in such a way that the units within a stratum are as similar as possible, even though one stratum may differ markedly from another.

The implementation of a stratified random sample predicates on some known structures within the population. Ideally, a successful stratification would require prior knowledge about some auxiliary variables that are correlated with the quantities of interests. In the absence of perfect prior knowledge, one could still rely on features of data, to partition the population into strata that are likely to correlate with the quantities of interests.

Thus, in keeping with best practices, we propose to implement a stratified random sampling in two phases. The initial phase involves the selection of a *feasibility* sample, in which the stratification and sample allocation are based on the judgments guided by data analyses. Based on the results of this feasibility sample, the second phase implementation will either re-stratified or increase the sample size to achieve the prescribed precision requirement.

4. Sampling Frame and Population

A sampling frame is a list of items in the population from which we select a sample. Our sampling frame is based on the IMFC database, retrieved in September 2004. This database contains an exhaustive list of all *active* awards granted by the DOE. This database also contains auxiliary information, such as the program, funding amount and reported number of graduate students etc.

[4] Although, it is not universally true that *any* stratified random sample will yield a more precise estimate. If appropriately applied, stratification nearly always results in a more precise estimate than by a comparable simple random sample. See "Sampling Techniques," by William Cochran.

Specifically, the retrieved database contains funding information of 2,716 distinct awards.[5] These 2,716 awards amount to about $292,109,312 in total funding. Each of these distinct awards forms a sampling unit within the sampling frame.[6]

These 2,716 awards are classified into six program types, which are:[7]

1. Advanced Science Computing;
2. Basic Energy;
3. Biological and Environmental Sciences;
4. Fusion Energy Sciences;
5. High Energy Physics; and
6. Lab Ops and ES&H.

Table 1: Distribution of Awards and Funding by Program

Program	Funding Amount	Number of Awards
Advanced Sci Computing	$1,262,155	217
Basic Energy	$99,323,251	1,229
Biological and Environmental Sciences	$45,654,905	821
Fusion Energy Sciences	$55,022,963	256
High Energy Physics	$90,846,038	190
Lab Ops and ES&H	-	3
Total	**$292,109,312**	**2,716**

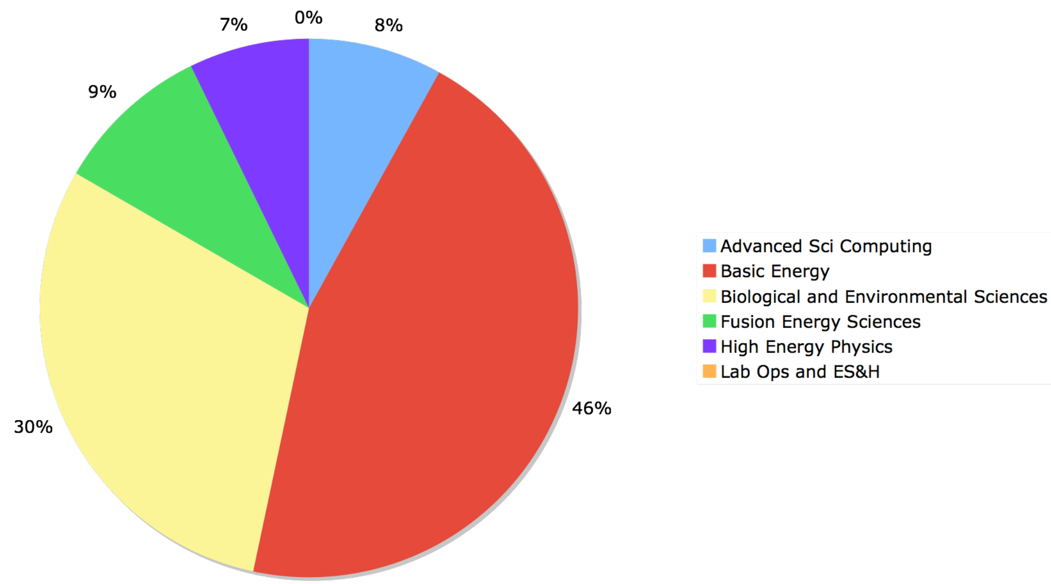
Table 1 shows that the distribution of awards and funding is uneven across these six programs. For instance, in terms of number of awards, the largest program is Basic Energy, which represents about 46 percent of the awards, and about 34 percent of the total funding. The second largest program is Biological and Environmental Sciences, which represents about 23 percent of the awards, and 16 percent of the total funding. Figure 1 shows that the top two program types dominate the number of awards.

[5] Awards are identified by “awardno” in the database.

[6] Some of these awards contain subcontracts and include funding for off-site research projects, which require separate surveys. Since this sampling plan envisions a 100 percent sample from these subunits, their presence does not alter the substance of the sampling methodology, i.e., no second stage sampling is required.

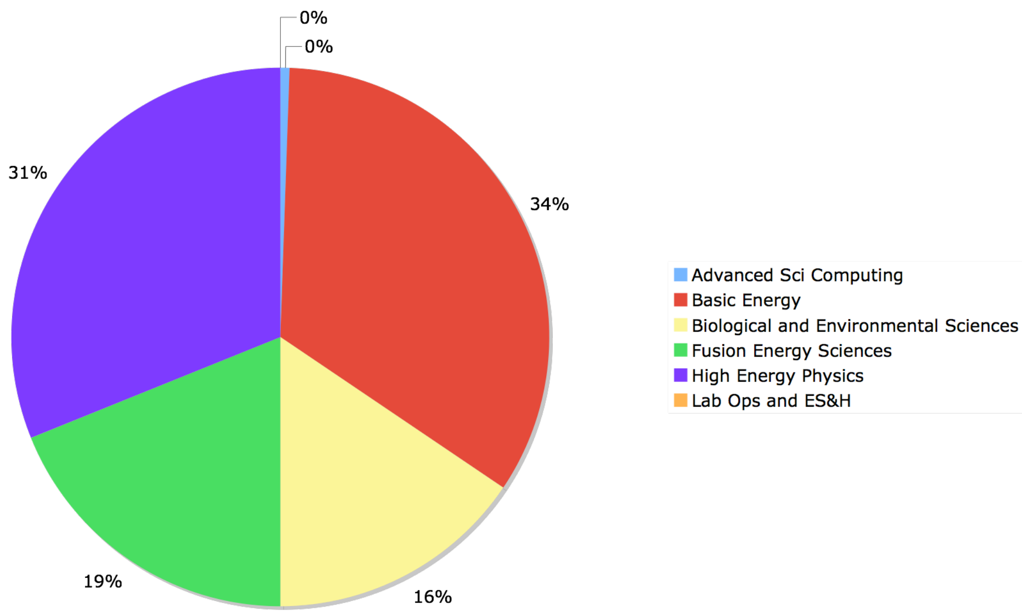
[7] Excluded from the sampling frame are 199 awards in Nuclear Physics, which amount to about $62,500,964.

Figure 1: Distribution of Awards by Program



The distribution of funding by program is likewise uneven. Figure 2 depicts the proportions of funding by program. It shows that Basic Energy and High Energy Physics account for about 65 percent of the total funding. Biological and Environmental Sciences and Fusion Energy Sciences divide the rest of the funding in roughly equal proportion. Advanced Scientific Computing represents less than one percent of the total funding. Lab Ops and ES&H did not receive funding as of the extraction of the database.

Figure 2: Distribution of Funding by Program



We also note that 1,839, or about 68 percent of the total awards, appear to have received no funding in 2005. These 1,839 awards probably represent active grants that are in their second or third year of funding. It is likely that these multi-year awards had reported the entire amount of their funding in the academic year in which they were first funded. Therefore, these otherwise active awards reported zero funding in years subsequent to initial funding. Moreover, these 1,839 awards did not report the number of graduate students funded by the grants. That is, beyond the initial estimate of the number of graduate students supported by the grants, the database does not contain any update in the subsequent years after initial funding.

There are 877 awards, or 32 percent of the total awards, that reported non-zero funding in the database. These 877 awards are all in their first year of funding (in 2004), and have reported estimates of the number of graduate students supported by the grants. Table 2 shows that awards that were funded in 2004 reported non-zero funding amounts and number of graduate students. Awards that were funded prior to 2004 reported neither the funding amount nor the number of graduate students.

Table 2: Reported Amount of Funding, Number of Awards and Report number of Graduate Students by Program

Program	Funding Amount	Number of Awards
Reported zero funding		
Advanced Sci Computing	0	214
Basic Energy	0	714

Program	Funding Amount	Number of Awards
Biological and Environmental Sciences	0	668
Fusion Energy Sciences	0	162
High Energy Physics	0	78
Lab Ops and ES&H	0	3
Total	**0**	**1,839**
Reported non-zero funding		
Advanced Sci Computing	$1,262,155	3
Basic Energy	$99,323,251	515
Biological and Environmental Sciences	$45,654,905	153
Fusion Energy Sciences	$55,022,963	94
High Energy Physics	$90,846,038	112
Lab Ops and ES&H		
Total	**$292,109,312**	**877**

Among the awards that were funded in 2004, a noticeable relationship emerges between the reported number of graduate students and program. Figure 3 is a bar chart of the mean of reported number of graduate students by program. It shows that different programs, on average, supported different number of graduate students. For example, on average, each award in High Energy Physics supports about six graduate students. Each award in Advance Scientific Computing supports about five graduate students. On average, an award in Fusion Energy Sciences, Lab Ops and ES&H, and Biological and Environmental Sciences support about only two graduate students.

Figure 3: Mean number of Reported Graduate Student by Program

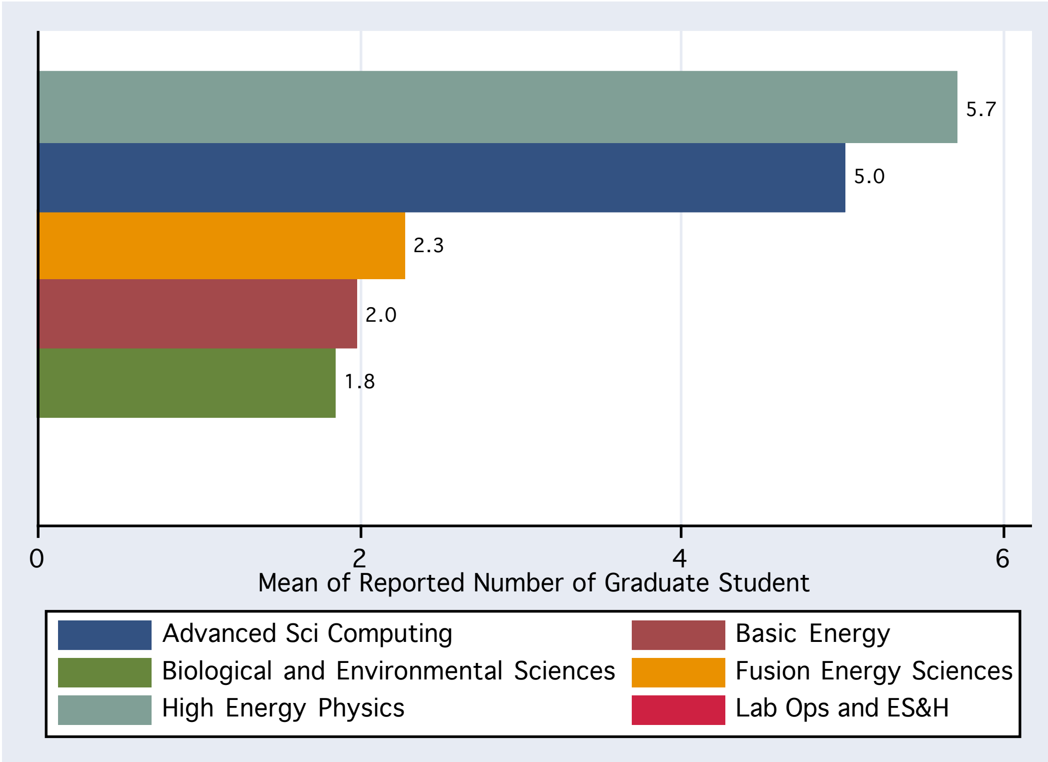


Table 3 presents summary statistics of the reported number of graduate students for 877 awards that have received funding in 2004. In addition to variations by the mean, the standard deviations vary noticeably by program as well.

Table 3: Summary Statistics for the Reported Number of Graduate Students by Program

Program	Graduate Students		
	Mean	Std. Dev.	Count
Advanced Sci Computing	5	3	3
Basic Energy	2	4.8	515
Biological and Environmental Sciences	1.8	1.4	153
Fusion Energy Sciences	2.3	2.6	94
High Energy Physics	5.7	5.3	112
Lab Ops and ES&H			0
Total	**2.5**	**4.4**	**877**

The above analyses provide three observations that have an impact on stratification:

1. The database does not provide information on the funding amount and the reported number of graduate students for awards that were funded in years prior to 2004.
2. The number of awards and the size of the funding vary significantly by program.
3. The distributions of the reported number of graduate students differ noticeably by program.

5. Method of Sampling Selection

Because the reported number of graduate students in the database is likely to correlate with the actual quantities of technical manpower employed by the active awards, the results of the above analyses give support to stratify the population by program to achieve an efficient estimate. In additional to stratifying the awards by program, we further stratified the population by a binary indicator that indicates whether an award reported number of graduate students. As discussed earlier, the database captures both the reported number of graduate students and the funding amount only for awards in their initial year of funding. And because about 2/3 of the active awards are in their second and third year of funding, it is important to ensure these awards' representation in the sample. We therefore partitioned the population into 12 strata, two strata per program. Within each program, awards are differentiated by whether an award reported number of graduate students.

For the initial feasibility sample, we choose a sample size of 366 from these 12 strata. Table 4 summarizes the distribution of the sampled items by program and by whether an award reported graduate students.

Table 4: Distribution of Sampled Items by Program and Whether an Award Reported Graduate Students

Program	Sample Size	Population Size
Reported Zero Students		
Advanced Sci Computing	12	214
Basic Energy	38	714
Biological and Environmental Sciences	35	668
Fusion Energy Sciences	9	162
High Energy Physics	5	78
Lab Ops and ES&H	1	3
Total	**100**	**1,839**
Reported Non-Zero Students		
Advanced Sci Computing	3	3
Basic Energy	154	515
Biological and Environmental Sciences	46	153
Fusion Energy Sciences	29	94
High Energy Physics	34	112
Lab Ops and ES&H		
Total	**266**	**877**

To select a sample of 366 items from the population, we first sort the database by program and award number, which is unique in the database. We than assigned a random number based on a uniform distribution.[8] This number randomized the items in sampling frame. Based on the sample allocation scheme in Table 4, we selected a sample of 366 items.

6. Design of an Online Survey

The surveying literature has identified several strengths and weakness about online and telephone surveys. This section summarizes our research results and the specifics of the DOE Technical Manpower survey that mitigate and amplify these limitations.

Specifically, the survey literature has indicated that online surveys are likely to achieve a lower response rate (incomplete and non-responses) compared to telephone surveys because online surveys

1. Are not administrated by interviewers, human assistance or probing for difficult questions is not possible.
2. Have to be administrated via Internet portals, and therefore exclude the portion of population without Internet access.

Given the target population of this survey, many of the aforementioned limitations are mitigated. The target respondents of this survey are scientists at universities who have received DOE grants. These scientists are likely to have high-speed Internet access and, presumably, knowledgeable in using Internet.

Also, human assistance is not without its problems. On one hand, interviewer assistance can solicit otherwise difficult to obtain information. On the other hand, it can also introduce unintended interviewer influences, and thus skewing the response. Online surveys can utilize pop-up windows, links and other visual aids to assist the respondents. We can also provide a help desk during usual office hours to assist the respondents.

The benefits associated with online surveying include:

1. Online surveys are more cost-effective:
    a. Beyond the fixed start up costs, the marginal costs for an additional survey is negligible. These savings apply to follow-up and next year's studies.
2. Online surveys can provide and retrieve more information than telephone survey because:
    a. Online surveys can allow pop-up windows and links for definition and example;
    b. Online survey can provide visual clues;
    c. Online survey can detect pauses, the number of times the respondent return to the survey after interruptions, and the duration necessary to complete the survey.
3. Unlike telephone surveys, online surveys do not require pre-designed appointments.
4. Unlike telephone surveys, online surveys can be completed in intervals.

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[8] We implemented the randomization using STATA, a statistical software program. To ensure reproducibility, we set a seed at 9162004, the date when the sample was selected.

5. Online survey can send out e-mail reminder to non-respondents.
6. Automated skip-patterns and response validation to minimize response time and response consistency.

We have implemented a number of steps to ensure the Technical Manpower survey is as clear as possible.

1. The DOE Technical Manpower survey is designed by experts in survey design.[9] The language and the organization of the survey are intended to achieve clarity and cohesion.
2. We have pre-tested the survey through telephone interviews with three actual principal investigators. The results of the pre-test telephone interviews have further clarified ambiguities and assisted in anticipating contexts that could lead to misinterpretation.
3. The online survey allows hyperlinks and pop-up windows that provide precision definitions of terms to further eliminate ambiguity.
4. A helpdesk is established during the fielding of the survey to answer any remaining questions.

Because a copy of the survey questionnaire is attached as an appendix, suffice it to note that the proposed questionnaire enquires about the numbers of graduate students, undergraduates, (co-) principal investigators, (non-) technical personnel etc. In addition to the quantities of technical manpower, the proposed questionnaire also enquires about the full- or part-time status of these categories of technical manpower. In case the selected grants also fund off-site research and subcontracts, the proposed questionnaire differentiates off-site research and subcontracts, isolating the survey responses to research activities that respondents exercise immediate control over.

We also note that the proposed online survey questionnaire is imbedded with skip-pattern logic to route the respondents to relevant questions depending on their responses to prior questions. Also, the survey questionnaire imposes constraints on response format to further mitigate response errors. A copy of a question flow chart is collected in Appendix B: Questionnaire Flowchart.

7. Implementation Feasibility

The implementation of a feasibility sample begins with a letter to send to the selected principal investigators. This letter will be issued by the DOE Office of Science, which states the purpose of the survey and ensures respondents' confidentiality. The online survey literature indicates that pre-notification by a different medium could greatly enhance the likelihood of success of the survey.

Following the pre-notification letter is an e-mail that invites the selected principal investigators to log onto the online survey. This e-mail invitation provides a login

[9] Specifically, Professor Frauke Kreuter of the Joint Program of Survey Research of University of Maryland at College Park, and Professor Robert Gould of the Department of Statistics at University of California at Los Angeles are the principal architects of the DOE manpower survey.

identification number and a password. This login identification number and password permit the respondents to save and edit their responses prior to final submission. Once a response is successfully submitted, an acknowledgment and a copy of their responses will be e-mailed. We expect the fielding periods for the feasibility phase to last a month after the mailing of the invitation e-mail.

Follow-up reminders will be e-mailed to those principal investigators that fail to log on to the online survey after one week of the receipt of the e-mail invitation. Follow-up phone calls will be placed to those principal investigators that fail to log on to the online survey after two weeks of the receipt of the initial e-mail invitation. At the conclusion of the field period, e-mail reminders will also be sent to those respondents that have logged in the online survey but have failed to complete and submit the survey. To increase the response rate, we will host a help desk during regular office hours to answer questions and provide clarifications.

Appendix A: Feasibility Sample

Sample No	Unique ID	Program	Reported Student (=1)	Award No
1	8	Advanced Sci Computing	0	25047
2	12	Advanced Sci Computing	0	25164
3	31	Advanced Sci Computing	0	25452
4	64	Advanced Sci Computing	0	25488
5	66	Advanced Sci Computing	0	25490
6	73	Advanced Sci Computing	0	25497
7	89	Advanced Sci Computing	0	25515
8	99	Advanced Sci Computing	0	25533
9	155	Advanced Sci Computing	0	25592
10	179	Advanced Sci Computing	0	25621
11	189	Advanced Sci Computing	0	25631
12	192	Advanced Sci Computing	0	25634
13	215	Advanced Sci Computing	1	25053
14	216	Advanced Sci Computing	1	25341
15	217	Advanced Sci Computing	1	25517
16	260	Basic Energy	0	14187
17	281	Basic Energy	0	14485
18	284	Basic Energy	0	14534
19	309	Basic Energy	0	14771
20	318	Basic Energy	0	14853
21	328	Basic Energy	0	14907
22	352	Basic Energy	0	15097
23	375	Basic Energy	0	15161
24	377	Basic Energy	0	15169
25	384	Basic Energy	0	15181
26	396	Basic Energy	0	15204
27	410	Basic Energy	0	15227
28	431	Basic Energy	0	15267
29	433	Basic Energy	0	15270
30	436	Basic Energy	0	15282
31	445	Basic Energy	0	15313
32	463	Basic Energy	0	15351
33	466	Basic Energy	0	15354
34	476	Basic Energy	0	15375
35	493	Basic Energy	0	15411
36	518	Basic Energy	0	15443
37	554	Basic Energy	0	15511
38	562	Basic Energy	0	15529
39	581	Basic Energy	0	15556
40	617	Basic Energy	0	15598
41	647	Basic Energy	0	20015
42	650	Basic Energy	0	20033
43	705	Basic Energy	0	20312
44	730	Basic Energy	0	45438

Sample No	Unique ID	Program	Reported Student (=1)	Award No
45	739	Basic Energy	0	45579
46	794	Basic Energy	0	45891
47	825	Basic Energy	0	45942
48	844	Basic Energy	0	45996
49	849	Basic Energy	0	46011
50	851	Basic Energy	0	46013
51	876	Basic Energy	0	46078
52	892	Basic Energy	0	46096
53	924	Basic Energy	0	46173
54	935	Basic Energy	1	13251
55	936	Basic Energy	1	13289
56	947	Basic Energy	1	13500
57	951	Basic Energy	1	13537
58	954	Basic Energy	1	13579
59	956	Basic Energy	1	13622
60	960	Basic Energy	1	13690
61	961	Basic Energy	1	13714
62	962	Basic Energy	1	13742
63	966	Basic Energy	1	13850
64	970	Basic Energy	1	13880
65	973	Basic Energy	1	13941
66	976	Basic Energy	1	14020
67	978	Basic Energy	1	14048
68	981	Basic Energy	1	14125
69	997	Basic Energy	1	14303
70	998	Basic Energy	1	14305
71	1000	Basic Energy	1	14320
72	1001	Basic Energy	1	14327
73	1003	Basic Energy	1	14333
74	1007	Basic Energy	1	14359
75	1008	Basic Energy	1	14363
76	1014	Basic Energy	1	14467
77	1017	Basic Energy	1	14500
78	1022	Basic Energy	1	14546
79	1023	Basic Energy	1	14549
80	1025	Basic Energy	1	14568
81	1026	Basic Energy	1	14589
82	1028	Basic Energy	1	14600
83	1030	Basic Energy	1	14619
84	1033	Basic Energy	1	14626
85	1035	Basic Energy	1	14641
86	1046	Basic Energy	1	14678
87	1047	Basic Energy	1	14680
88	1049	Basic Energy	1	14684
89	1050	Basic Energy	1	14685
90	1059	Basic Energy	1	14814
91	1060	Basic Energy	1	14847
92	1063	Basic Energy	1	14879

Sample No	Unique ID	Program	Reported Student (=1)	Award No
93	1066	Basic Energy	1	14890
94	1070	Basic Energy	1	14908
95	1075	Basic Energy	1	14943
96	1076	Basic Energy	1	14949
97	1080	Basic Energy	1	14982
98	1082	Basic Energy	1	14988
99	1087	Basic Energy	1	14996
100	1088	Basic Energy	1	14998
101	1089	Basic Energy	1	14999
102	1096	Basic Energy	1	15035
103	1106	Basic Energy	1	15121
104	1107	Basic Energy	1	15129
105	1113	Basic Energy	1	15176
106	1120	Basic Energy	1	15244
107	1132	Basic Energy	1	15287
108	1133	Basic Energy	1	15296
109	1136	Basic Energy	1	15317
110	1137	Basic Energy	1	15318
111	1140	Basic Energy	1	15328
112	1141	Basic Energy	1	15331
113	1145	Basic Energy	1	15364
114	1148	Basic Energy	1	15372
115	1154	Basic Energy	1	15387
116	1155	Basic Energy	1	15389
117	1156	Basic Energy	1	15390
118	1159	Basic Energy	1	15404
119	1165	Basic Energy	1	15422
120	1167	Basic Energy	1	15424
121	1172	Basic Energy	1	15457
122	1174	Basic Energy	1	15460
123	1176	Basic Energy	1	15463
124	1177	Basic Energy	1	15464
125	1179	Basic Energy	1	15466
126	1182	Basic Energy	1	15472
127	1184	Basic Energy	1	15474
128	1187	Basic Energy	1	15481
129	1188	Basic Energy	1	15490
130	1189	Basic Energy	1	15496
131	1191	Basic Energy	1	15503
132	1192	Basic Energy	1	15505
133	1201	Basic Energy	1	15520
134	1205	Basic Energy	1	15530
135	1214	Basic Energy	1	15568
136	1216	Basic Energy	1	20021
137	1224	Basic Energy	1	20175
138	1226	Basic Energy	1	20206
139	1228	Basic Energy	1	20221
140	1235	Basic Energy	1	45118

Sample No	Unique ID	Program	Reported Student (=1)	Award No
141	1236	Basic Energy	1	45125
142	1237	Basic Energy	1	45170
143	1239	Basic Energy	1	45237
144	1244	Basic Energy	1	45331
145	1245	Basic Energy	1	45332
146	1247	Basic Energy	1	45405
147	1251	Basic Energy	1	45435
148	1253	Basic Energy	1	45471
149	1259	Basic Energy	1	45504
150	1260	Basic Energy	1	45538
151	1261	Basic Energy	1	45543
152	1262	Basic Energy	1	45557
153	1264	Basic Energy	1	45576
154	1272	Basic Energy	1	45628
155	1273	Basic Energy	1	45632
156	1280	Basic Energy	1	45685
157	1281	Basic Energy	1	45686
158	1284	Basic Energy	1	45702
159	1292	Basic Energy	1	45770
160	1296	Basic Energy	1	45778
161	1304	Basic Energy	1	45805
162	1305	Basic Energy	1	45810
163	1307	Basic Energy	1	45818
164	1310	Basic Energy	1	45827
165	1316	Basic Energy	1	45869
166	1317	Basic Energy	1	45871
167	1318	Basic Energy	1	45872
168	1320	Basic Energy	1	45885
169	1322	Basic Energy	1	45906
170	1323	Basic Energy	1	45907
171	1327	Basic Energy	1	45913
172	1329	Basic Energy	1	45923
173	1330	Basic Energy	1	45927
174	1334	Basic Energy	1	45933
175	1336	Basic Energy	1	45940
176	1341	Basic Energy	1	45957
177	1342	Basic Energy	1	45958
178	1343	Basic Energy	1	45959
179	1345	Basic Energy	1	45961
180	1346	Basic Energy	1	45963
181	1349	Basic Energy	1	45967
182	1352	Basic Energy	1	45974
183	1354	Basic Energy	1	45976
184	1368	Basic Energy	1	46010
185	1369	Basic Energy	1	46014
186	1370	Basic Energy	1	46015
187	1375	Basic Energy	1	46023
188	1377	Basic Energy	1	46027

Sample No	Unique ID	Program	Reported Student (=1)	Award No
189	1378	Basic Energy	1	46028
190	1380	Basic Energy	1	46031
191	1381	Basic Energy	1	46033
192	1385	Basic Energy	1	46038
193	1387	Basic Energy	1	46040
194	1389	Basic Energy	1	46042
195	1391	Basic Energy	1	46044
196	1394	Basic Energy	1	46053
197	1400	Basic Energy	1	46066
198	1401	Basic Energy	1	46072
199	1402	Basic Energy	1	46076
200	1404	Basic Energy	1	46086
201	1410	Basic Energy	1	46103
202	1415	Basic Energy	1	46109
203	1419	Basic Energy	1	46114
204	1423	Basic Energy	1	46119
205	1425	Basic Energy	1	46121
206	1439	Basic Energy	1	46142
207	1446	Basic Energy	1	46155
208	1447	Biological and Environmental Sciences	0	10926
209	1458	Biological and Environmental Sciences	0	11114
210	1461	Biological and Environmental Sciences	0	11118
211	1465	Biological and Environmental Sciences	0	11127
212	1513	Biological and Environmental Sciences	0	62028
213	1523	Biological and Environmental Sciences	0	62210
214	1542	Biological and Environmental Sciences	0	62472
215	1557	Biological and Environmental Sciences	0	62687
216	1609	Biological and Environmental Sciences	0	63025
217	1638	Biological and Environmental Sciences	0	63157
218	1653	Biological and Environmental Sciences	0	63195
219	1680	Biological and Environmental Sciences	0	63242
220	1685	Biological and Environmental Sciences	0	63248
221	1708	Biological and Environmental Sciences	0	63280
222	1736	Biological and Environmental Sciences	0	63333
223	1745	Biological and Environmental Sciences	0	63365
224	1747	Biological and Environmental Sciences	0	63373
225	1767	Biological and Environmental Sciences	0	63442
226	1775	Biological and Environmental Sciences	0	63456
227	1816	Biological and Environmental Sciences	0	63512
228	1851	Biological and Environmental Sciences	0	63586
229	1860	Biological and Environmental Sciences	0	63598
230	1869	Biological and Environmental Sciences	0	63609
231	1876	Biological and Environmental Sciences	0	63621
232	1917	Biological and Environmental Sciences	0	63671
233	1932	Biological and Environmental Sciences	0	63688
234	1937	Biological and Environmental Sciences	0	63693
235	1978	Biological and Environmental Sciences	0	63774
236	2017	Biological and Environmental Sciences	0	63839

Sample No	Unique ID	Program	Reported Student (=1)	Award No
237	2019	Biological and Environmental Sciences	0	63841
238	2024	Biological and Environmental Sciences	0	63850
239	2048	Biological and Environmental Sciences	0	63874
240	2050	Biological and Environmental Sciences	0	63876
241	2082	Biological and Environmental Sciences	0	63909
242	2104	Biological and Environmental Sciences	0	63932
243	2115	Biological and Environmental Sciences	1	15012
244	2127	Biological and Environmental Sciences	1	61768
245	2129	Biological and Environmental Sciences	1	61937
246	2132	Biological and Environmental Sciences	1	62370
247	2133	Biological and Environmental Sciences	1	62443
248	2134	Biological and Environmental Sciences	1	62452
249	2135	Biological and Environmental Sciences	1	62469
250	2139	Biological and Environmental Sciences	1	62570
251	2140	Biological and Environmental Sciences	1	62571
252	2148	Biological and Environmental Sciences	1	62809
253	2149	Biological and Environmental Sciences	1	62844
254	2150	Biological and Environmental Sciences	1	62882
255	2162	Biological and Environmental Sciences	1	63144
256	2163	Biological and Environmental Sciences	1	63147
257	2173	Biological and Environmental Sciences	1	63224
258	2178	Biological and Environmental Sciences	1	63324
259	2180	Biological and Environmental Sciences	1	63332
260	2182	Biological and Environmental Sciences	1	63339
261	2197	Biological and Environmental Sciences	1	63445
262	2198	Biological and Environmental Sciences	1	63446
263	2201	Biological and Environmental Sciences	1	63483
264	2203	Biological and Environmental Sciences	1	63493
265	2204	Biological and Environmental Sciences	1	63502
266	2205	Biological and Environmental Sciences	1	63507
267	2209	Biological and Environmental Sciences	1	63516
268	2211	Biological and Environmental Sciences	1	63530
269	2220	Biological and Environmental Sciences	1	63655
270	2224	Biological and Environmental Sciences	1	63663
271	2225	Biological and Environmental Sciences	1	63704
272	2227	Biological and Environmental Sciences	1	63712
273	2232	Biological and Environmental Sciences	1	63727
274	2233	Biological and Environmental Sciences	1	63729
275	2235	Biological and Environmental Sciences	1	63732
276	2236	Biological and Environmental Sciences	1	63733
277	2238	Biological and Environmental Sciences	1	63737
278	2239	Biological and Environmental Sciences	1	63741
279	2242	Biological and Environmental Sciences	1	63746
280	2245	Biological and Environmental Sciences	1	63752
281	2248	Biological and Environmental Sciences	1	63757
282	2249	Biological and Environmental Sciences	1	63763
283	2251	Biological and Environmental Sciences	1	63770
284	2253	Biological and Environmental Sciences	1	63784

Sample No	Unique ID	Program	Reported Student (=1)	Award No
285	2254	Biological and Environmental Sciences	1	63785
286	2258	Biological and Environmental Sciences	1	63803
287	2262	Biological and Environmental Sciences	1	63823
288	2264	Biological and Environmental Sciences	1	63842
289	2332	Fusion Energy Sciences	0	54628
290	2346	Fusion Energy Sciences	0	54659
291	2358	Fusion Energy Sciences	0	54685
292	2380	Fusion Energy Sciences	0	54727
293	2389	Fusion Energy Sciences	0	54744
294	2398	Fusion Energy Sciences	0	54764
295	2406	Fusion Energy Sciences	0	54783
296	2411	Fusion Energy Sciences	0	54788
297	2421	Fusion Energy Sciences	0	54798
298	2430	Fusion Energy Sciences	1	52118
299	2432	Fusion Energy Sciences	1	52131
300	2438	Fusion Energy Sciences	1	53222
301	2441	Fusion Energy Sciences	1	53296
302	2442	Fusion Energy Sciences	1	54109
303	2453	Fusion Energy Sciences	1	54344
304	2455	Fusion Energy Sciences	1	54350
305	2460	Fusion Energy Sciences	1	54376
306	2461	Fusion Energy Sciences	1	54413
307	2462	Fusion Energy Sciences	1	54437
308	2464	Fusion Energy Sciences	1	54458
309	2465	Fusion Energy Sciences	1	54459
310	2467	Fusion Energy Sciences	1	54464
311	2468	Fusion Energy Sciences	1	54475
312	2470	Fusion Energy Sciences	1	54513
313	2478	Fusion Energy Sciences	1	54538
314	2480	Fusion Energy Sciences	1	54546
315	2493	Fusion Energy Sciences	1	54692
316	2497	Fusion Energy Sciences	1	54708
317	2500	Fusion Energy Sciences	1	54715
318	2504	Fusion Energy Sciences	1	54737
319	2505	Fusion Energy Sciences	1	54738
320	2510	Fusion Energy Sciences	1	54747
321	2511	Fusion Energy Sciences	1	54750
322	2513	Fusion Energy Sciences	1	54753
323	2516	Fusion Energy Sciences	1	54760
324	2517	Fusion Energy Sciences	1	54762
325	2519	Fusion Energy Sciences	1	54765
326	2521	Fusion Energy Sciences	1	54768
327	2526	High Energy Physics	0	40226
328	2527	High Energy Physics	0	40291
329	2533	High Energy Physics	0	40797
330	2550	High Energy Physics	0	41184
331	2575	High Energy Physics	0	41283
332	2602	High Energy Physics	1	40153

Sample No	Unique ID	Program	Reported Student (=1)	Award No
333	2605	High Energy Physics	1	40231
334	2606	High Energy Physics	1	40546
335	2615	High Energy Physics	1	40631
336	2617	High Energy Physics	1	40643
337	2622	High Energy Physics	1	40661
338	2631	High Energy Physics	1	40679
339	2635	High Energy Physics	1	40685
340	2639	High Energy Physics	1	40695
341	2646	High Energy Physics	1	40709
342	2647	High Energy Physics	1	40715
343	2648	High Energy Physics	1	40716
344	2652	High Energy Physics	1	40788
345	2653	High Energy Physics	1	40823
346	2656	High Energy Physics	1	40854
347	2658	High Energy Physics	1	40893
348	2664	High Energy Physics	1	40917
349	2665	High Energy Physics	1	40919
350	2667	High Energy Physics	1	40938
351	2671	High Energy Physics	1	40954
352	2675	High Energy Physics	1	40969
353	2677	High Energy Physics	1	41005
354	2680	High Energy Physics	1	41027
355	2685	High Energy Physics	1	41045
356	2687	High Energy Physics	1	41104
357	2689	High Energy Physics	1	41117
358	2694	High Energy Physics	1	41262
359	2698	High Energy Physics	1	41288
360	2700	High Energy Physics	1	41290
361	2703	High Energy Physics	1	41295
362	2705	High Energy Physics	1	41299
363	2707	High Energy Physics	1	41305
364	2709	High Energy Physics	1	41308
365	2710	High Energy Physics	1	41310
366	2716	Lab Ops and ES&H	0	35838

Appendix B: Questionnaire Flowchart