**Request for Approval to Conduct an Experiment Using Monetary Incentives
in the 2010 National Survey of College Graduates**

I.    Introduction

The National Survey of College Graduates (NSCG) has been conducted by the Census
Bureau for the National Science Foundation (NSF) since the 1960s.  It is the nation's
only source of detailed statistics on the science and engineering labor force.  The 2010
NSCG data collection effort began in October 2010 and is scheduled to end in May 2011.
As part of the on-going survey evaluation, the Census Bureau and the NSF have tracked
response rates and number of respondents for the survey's primary analytical domains on
a weekly basis.  Recent investigation of these figures has shed light on a potential
problem that has both response rate and nonresponse bias implications.

As part of the 2010 NSCG sample design, the NSF set reliability requirements for each
NSCG primary analytical domain.  The 2010 NSCG sample was then allocated to ensure
an adequate sample in each domain to meet these reliability requirements while taking
into consideration the likely nonresponse that would occur in the 2010 data collection
effort.  The 2010 NSCG included the following three primary analytical domains as part
of the sample design construction:

- Broad occupation by demographic group
- Broad occupation by highest degree level
- Detailed occupation by highest degree level

For each domain, Attachment A provides information on the desired reliability
requirements.  These reliability requirements assume a fully implemented NSCG rotating
panel design. Attachment B provides information on the desired number of respondents
from the 2010 NSCG sample within each primary analytical domain in order to meet
these reliability requirements.  When these desired figures were compared against the
weekly results from the 2010 NSCG data collection effort, it was determined that a
subpopulation of hard to enumerate cases exists within the NSCG sample and this
subpopulation is adversely impacting the response level for the NSCG primary analytical
domains.  The impact of these hard to enumerate cases is being seen in both the response
rate and number of respondents within each primary analytical domain.  Unless
appropriate steps are taken to increase the response rate for these hard to enumerate
cases, there is a concern that the low response rate could introduce nonresponse bias into
the estimates for these primary analytical domains.

To address the potential impact of the hard to enumerate cases on the NSCG primary
analytical domains, the NSF is requesting approval to conduct an experiment using
monetary incentives as part of the 2010 NSCG data collection effort.  One of the largest
contributors to improved survey response rates is the appropriate use of prepaid monetary
incentives.  Providing incentives to potential respondents with the survey request has
been shown to significantly increase the number of people who respond.  Furthermore,
providing these incentives in advance evokes a sense of reciprocal obligation such that

people feel the need to respond to the reward they received by completing the survey. Perhaps more important than its influence on response rates is the potential effect that a financial incentive has on nonresponse bias. Research is beginning to demonstrate that such incentives reduce the potential for nonresponse bias by obtaining responses from sample cases that otherwise might not answer the questionnaire (Dillman, Smyth, and Christian, 2009).

This document discusses information related to the impact these hard to enumerate cases could have on estimates of the NSCG primary analytical domains and provides details on the proposed inclusion of a monetary incentive experiment in the 2010 NSCG.

II.    Background

Historically, the NSCG sample was selected once a decade from the decennial census long form respondents. No other frame existed to sample this rare population. The 2003 NSCG was the last survey cycle to use the long form as its sampling frame. With the American Community Survey (ACS) replacing the long form, the NSF has switched to the ACS as a sampling frame beginning with the 2010 NSCG.

Although the long form and ACS provide information that allows the NSF to identify the unique NSCG target population, there are certain drawbacks associated with using these frames to select the NSCG sample. One particular drawback is the impact the long form or ACS data collection mode has on the response propensity to the NSCG.

Results from 2003 NSCG survey cycle provides evidence that the *response mode* used in the 2000 decennial census long form impacts the *response rate* in 2003 NSCG. The long form used two data collection modes in a sequential manner: mail followed by personal visit follow-up for mail nonrespondents. The 2003 NSCG response rate for long form mail respondents was 22 percentage points higher than the 2003 NSCG response rate for the long form cases personal visit respondents. In other words, the hard to enumerate cases from the long form (identified as cases requiring a personal visit follow-up to obtain a long form response) were equally difficult to enumerate in the NSCG data collection effort.

When the 2010 NSCG response rates are considered while taking the ACS data collection mode into account, a similarly severe response rate differential is noticed between ACS mail and non-mail cases. Table 1 provides 2010 NSCG response rate information by ACS data collection mode as of February 13, 2011. As of this date in the data collection, all sample cases had been included in two mail data collection phases and a month of nonresponse follow-up by computer assisted telephone interviewing (CATI). As was the case with the 2003 NSCG/2000 long form evaluation, the 2010 NSCG response rate differential between the ACS mail and ACS non-mail cases provides justification to consider the ACS non-mail cases as hard to enumerate cases for 2010 NSCG data collection effort. As a result, the remaining tables within this document will use the term "hard to enumerate" when referring to 2010 NSCG sample members that completed the

ACS in the CATI, CAPI, or GQPV data collection modes.  The 2010 NSCG sample cases that completed the ACS in the mail data collection mode will be categorized as "other."

**Table 1. 2010 NSCG Response Rate Information**

| ACS Data Collection Mode | Count | Response Rate |
|---|---|---|
| Mail | 51,055 | 65.28% |
| CATI | 5.718 | 42.15% |
| CAPI | 8,205 | 36.20% |
| GQPV | 217 | 44.70% |
| Total | 65,195 | 59.52% |

*Notes:  (1) 2010 NSCG Response Rate as of February 13, 2011.*
*(2) CATI is Computer Assisted Telephone Interviewing.*
*(3) CAPI is Computer Assisted Personal Interviewing.*
*(4) GQPV refers to the ACS sample cases residing in Group Quarters that were interviewed by Personal Visit.*

III.    Impact of the Hard to Enumerate Cases on the NSCG Primary Analytical Domains

As noted earlier, the 2010 NSCG sample was allocated to ensure an adequate sample in each primary analytical domain to meet the survey's reliability requirements.  This allocation assumed a 70% overall response rate with some variation to account for the response rate variation likely to occur across certain demographic groups.  The tables that follow provide insight on the difficulty associated with capturing an adequate percentage of the hard to enumerate cases within the NSCG primary analytical domains.  As noted earlier, the hard to enumerate cases include the 2010 NSCG sample members that completed the ACS in the CATI, CAPI, or GQPV data collection modes.

Attachment C includes response rate information for all cells within the NSCG primary analytical domains.  This attachment provides evidence of the adverse impact the hard to enumerate cases has on the cells within the NSCG primary analytical domains.  Tables 2-4 below are subsets of Attachment C and provide a glimpse into the response rate impact associated with the hard to enumerate cases.  These subset tables are included in the text rather than the full tables because of space considerations.  However, the full tables in Attachment C should be examined when attempting to determine the impact of the hard to enumerate cases.

**Table 2. 2010 NSCG Response Rate – Primary Analytical Domain #1 by Difficulty to Enumerate Indicator**

| Demographic Group | Broad Occupation Group | Difficulty to Enumerate Indicator | 2010 NSCG Sample Cases | Response Rate |
|---|---|---|---|---|
| Black | Physical Scientists | Other | 90 | 55.56% |
| Black | Physical Scientists | Hard to Enumerate | 37 | 24.32% |
| Black | Social Scientists, Except Psychologists | Other | 72 | 51.39% |
| Black | Social Scientists, Except Psychologists | Hard to Enumerate | 26 | 23.08% |
| Black | Psychologists | Other | 30 | 66.67% |
| Black | Psychologists | Hard to Enumerate | 15 | 33.33% |
| Black | Engineers | Other | 356 | 52.25% |

| Demographic Group | Broad Occupation Group | Difficulty to Enumerate Indicator | 2010 NSCG Sample Cases | Response Rate |
|---|---|---|---|---|
| Black | Engineers | Hard to Enumerate | 206 | 26.70% |

**Table 3. 2010 NSCG Response Rate – Primary Analytical Domain #2 by Difficulty to Enumerate Indicator**

| Highest Degree Level | Broad Occupation Group | Difficulty to Enumerate Indicator | 2010 NSCG Sample Cases | Response Rate |
|---|---|---|---|---|
| Master | Chemical engineers | Other | 174 | 66.09% |
| Master | Chemical engineers | Hard to Enumerate | 25 | 36.00% |
| Master | Civil and architectural engineers | Other | 457 | 70.46% |
| Master | Civil and architectural engineers | Hard to Enumerate | 73 | 38.36% |
| Master | Electrical and computer engineers | Other | 468 | 69.44% |
| Master | Electrical and computer engineers | Hard to Enumerate | 101 | 46.54% |

**Table 4. 2010 NSCG Response Rate – Primary Analytical Domain #3 by Difficulty to Enumerate Indicator**

| Highest Degree Level | Broad Occupation Group | Difficulty to Enumerate Indicator | 2010 NSCG Sample Cases | Response Rate |
|---|---|---|---|---|
| Bachelor/ Professional | Mathematician | Other | 897 | 61.43% |
| Bachelor/ Professional | Mathematician | Hard to Enumerate | 202 | 39.60% |
| Bachelor/ Professional | Computer Scientist | Other | 1,871 | 64.19% |
| Bachelor/ Professional | Computer Scientist | Hard to Enumerate | 471 | 40.34% |
| Bachelor/ Professional | Biological/medical scientists | Other | 346 | 69.94% |
| Bachelor/ Professional | Biological/medical scientists | Hard to Enumerate | 103 | 38.84% |

The concern is that the low response rates for the hard to enumerate cases within the 2010 NSCG sample increases the potential for nonresponse bias in the estimates of the NSCG primary analytical domains. This concern is amplified by the fact that the hard to enumerate cases make up a disproportionate percentage of the NSCG population. As presented in Table 5, while the hard to enumerate cases are only about 22% of the unweighted NSCG sample, they comprise approximately 31% of NSCG weighted population.

**Table 5. 2010 NSCG Sample by Difficulty to Enumerate Indicator**

| Difficulty to Enumerate Indicator | Unweighted | | Weighted | |
|---|---|---|---|---|
| | 2010 NSCG Sample Cases | Percentage | Total | Percentage |
| Hard to Enumerate | 14,140 | 21.69% | 17,635,066 | 31.37% |
| Other | 51,055 | 78.31% | 38,573,550 | 68.63% |
| Total | 65,195 | 100.00% | 56,208,616 | 100.00% |

Furthermore, when you examine the cross-tabulation of the demographic group variable for the 2010 NSCG sample by the difficulty to enumerate indicator, it is evident that the hard to enumerate cases make up a disproportionate percentage for the population of each demographic group. Since demographic group information is included in one of the NSCG key analytical domains, the combination of the low response rate and the disproportionate percentage of the population creates potential for nonresponse bias in the NSCG estimates.

IV.    Incentive Proposal

Given the extreme response rate differences documented in the previous sections and the potentially adverse impact these differences could have on estimates of the NSCG primary analytical domains, the NSF is requesting approval to conduct an experiment that uses monetary incentives for the hard to enumerate cases within the 2010 NSCG sample. Currently, there are approximately 9,000 hard to enumerate cases that are nonrespondents in the 2010 NSCG sample.

The incentive experiment we are proposing will include a control group that receives no incentive, a treatment group that receives a $20 prepaid incentive, and another treatment group that receives a $30 prepaid incentive. Research conducted at the National Science Foundation using incentives to encourage survey response has consistently resulted in an increase in response and/or data quality. As noted in Zhang, 2010, the past incentive research conducted at the NSF has focused on the surveys similar to the NSCG. These similarities include the target population (college educated), questionnaire length, and data collection modes. Since the NSCG has these similarities, it is reasonable to assume the research results from the other NSF surveys apply to the NSCG.

Furthermore, the data from this research suggests that higher incentive amounts may be associated with greater response rate gain.   However, further exploration of this relationship between incentive amount and gain in response is needed.  (Zhang, 2010). As a result, two incentive values are being included in this experiment to examine the impact incentive amount has on gain in response for the college-educated population.

The $20 incentive value was chosen for the first treatment group based on the effectiveness of this amount when used in past NSF-sponsored surveys (Zhang, 2010). The $30 incentive value was chosen for the second treatment group in an effort to determine whether the increased incentive amount compared to the $20 incentive value would result in a noticeable response rate gain.

The $30 incentive value for the second treatment group was determined using the findings from a survey of postsecondary faculty conducted by Research Triangle Institute (RTI).  This RTI survey used two incentive values ($20 and $30) and found no significant difference in response between these two incentive values (Fahimi et al., 2006). However, the RTI survey used a postpaid incentive structure that required a completed interview for the incentive to be used.  Since the NSCG will use a prepaid incentive

structure, we feel there is value in reexamining the $20 vs. $30 incentive amount question.

With this backgound in mind, this proposed experiment will allow us to investigate the following issues:

- Does the use of a monetary incentive ($0 vs. $20) and ($0 vs $30) impact the response tendency for these hard to enumerate sample cases?
- Does the amount of the monetary incentive ($20 vs. $30) impact the response tendency for these hard to enumerate sample cases?
- Is the addition cost associated with the $30 incentive over the $20 incentive justified by the increase in response rate?
- Does the use of a prepaid incentive create sample cases that will use the incentive without completing the survey?  If so, are there any demographic indicators that provide insight on the type of cases using the incentive without completing the survey.

In order to use incentives in the context of this experiment, we have determined the necessary sample size requirements to meet a response rate difference detection level of at least 10% in the pairwise comparison between the control group and either treatment group.  The control group sample size presented in Table 6 is the minimum number of cases needed in each group to meet the desired detection level.  Rather than also setting the sample size for the treatment groups equal to the control group sample size, the balance of the cases would be put equally into the two treatment groups in order to maximize the impact of the incentive.  As a result of the larger sample size for the treatment groups, the actual detection level of each pairwise comparison is lower than the desired detection level.  However, the actual detection level would vary depending on the standard error of the estimates from the two groups.

Please note that these sample size calculations assume an alpha level of 10%, a beta level of 90%, and estimated response rates of 50% for each group (setting the response rates for each group at this 50% value is a conservative approach that maximizes the required sample size).

**Table 6.  2010 NSCG Incentive Experiment – Sample Size Information**

| Desired Detection Level | Control Group Sample Size | Treatment Group #1 Sample Size | Treatment Group #2 Sample Size | Percent Receiving NO Incentive | Percent Receiving an Incentive |
|---|---|---|---|---|---|
| 10.0% | 600 | 4,200 | 4,200 | 6.7% | 93.3% |

V.    References

Dillman, Don A., Jolene D. Smyth and Leah Melani Christian.  (2009).  Internet, Mail and Mixed-Mode Surveys: The Tailored Design Method, 3rd edition.  John Wiley: Hoboken, NJ.

Fahimi et al. (2006). *Efficacy of Incentives in Increasing Response Rates*. Paper prepared for the Second International Conference on Telephone Survey Methodology, Miami, Florida, January 2006.
http://www.rti.org/pubs/TSM2006_Fahimi-efficacy_paper.pdf

Zhang F. (2010). *Incentive Experiments: NSF Experiences.* Working Paper SRS 11-200. Arlington, VA: National Science Foundation, Division of Science Resources Statistics.
http://www.nsf.gov/statistics/srs11200/srs11200.pdf

**Table A-1: NSCG Desired CV Levels - Broad Occupation by Demographic Group**

| BROAD OCCUPATION | DEMOGRAPHIC GROUP | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|
| | USCAB or High Prob. of U.S. Earned Degree | | | | | | Low Prob. of U.S. Earned Degree | | |
| | Hispanic | Black | Asian | AIAN/NHPI | Disabled | White | Hispanic | Asian | Residual |
| Mathematician | 8.1% | 6.6% | 5.0% | 11.3% | 8.1% | 2.9% | 19.7% | 4.4% | 6.4% |
| Computer Scientists | 8.0% | 10.0% | 9.0% | 16.0% | 18.4% | 2.5% | 22.0% | 6.6% | 6.4% |
| Life Scientists | 11.1% | 11.8% | 12.1% | 25.8% | 15.5% | 4.0% | 21.0% | 6.9% | 7.3% |
| Physical Scientists | 10.0% | 12.0% | 11.0% | 18.0% | 20.4% | 4.5% | 24.0% | 8.6% | 8.4% |
| Social Scientists, Except Psychologists | 13.0% | 14.6% | 15.5% | 30.0% | 21.1% | 5.5% | 30.0% | 17.8% | 15.6% |
| Psychologists | 13.3% | 18.7% | 15.8% | 25.0% | 16.1% | 5.1% | 24.1% | 30.0% | 21.9% |
| Engineers | 5.6% | 8.0% | 4.0% | 15.3% | 7.8% | 4.0% | 12.4% | 5.0% | 6.7% |
| Health-Related Occupations | 11.3% | 16.7% | 13.8% | 23.0% | 14.1% | 3.1% | 22.1% | 28.0% | 19.9% |
| S&E-Related non-Health Occupations | 11.3% | 16.7% | 13.8% | 23.0% | 14.1% | 3.1% | 22.1% | 28.0% | 19.9% |
| Post secondary teacher, S&E FOD | 6.2% | 6.9% | 6.3% | 14.9% | 8.9% | 4.0% | 15.7% | 6.6% | 7.5% |
| Post secondary teacher, Non-S&E FOD | 20.7% | 15.9% | 26.1% | 29.2% | 17.5% | 5.4% | 29.5% | 20.3% | 11.7% |
| Secondary Teacher, S&E FOD | 3.4% | 3.1% | 3.7% | 7.3% | 4.8% | 4.0% | 8.9% | 3.9% | 4.8% |
| Secondary teacher, Non-S&E | 20.7% | 15.9% | 26.1% | 29.2% | 17.5% | 5.4% | 29.5% | 20.3% | 11.7% |
| Non-S&E High Interest Occup, S&E FOD | 3.2% | 4.4% | 2.4% | 8.1% | 4.3% | 2.4% | 6.6% | 2.9% | 3.8% |
| Non-S&E Low Interest Occup, S&E FOD | 3.7% | 3.4% | 4.0% | 7.6% | 5.1% | 4.3% | 9.2% | 4.2% | 5.1% |
| Non-S&E Occupations, Non-S&E FOD | 20.7% | 15.9% | 26.1% | 29.2% | 17.5% | 5.4% | 29.5% | 20.3% | 11.7% |
| Not Working, S&E FOD | 6.8% | 6.9% | 6.1% | 13.2% | 6.2% | 2.8% | 16.3% | 7.3% | 7.2% |
| Not Working, Non-S&E FOD | 26.0% | 24.3% | 19.2% | 30.0% | 13.5% | 8.6% | 30.0% | 17.0% | 12.0% |

*Notes:*

*(1) CV = Coefficient of Variation*

*(2) The total row and column CVs are approximated by the assumption of strata independence.*

*(3) USCAB = U.S. Citizen at Birth*

*(4) AIAN/NHPI = American Indian, Alaska Native / Native Hawaiian, Pacific Islander*

*(5) S&E = Science and Engineering*

*(6) FOD = Field of Degree*

Attachment A-1

**Table A.2: NSCG Desired CV Levels - Broad Occupation by Highest Degree Level**

| BROAD OCCUPATION | HIGHEST DEGREE LEVEL | | |
|---|---|---|---|
| | Bachelor's | Master's | Doctorate |
| **Mathematician** | 2.7% | 3.4% | 10.7% |
| **Computer Scientist** | 3.5% | 3.9% | 7.7% |
| **Life Scientists** | 4.5% | 5.1% | 6.6% |
| **Physical Scientists** | 5.5% | 5.9% | 8.9% |
| **Social Scientists, Except Psychologists** | 6.4% | 6.9% | 12.5% |
| **Psychologists** | 15.4% | 4.9% | 16.4% |
| **Engineers** | 3.0% | 4.0% | 9.7% |
| **Health-Related Occupations** | 13.4% | 2.9% | 14.4% |
| **S&E-Related non-Health Occupations** | 13.4% | 2.9% | 14.4% |
| **Post Secondary Teacher, S&E FOD** | 3.0% | 4.0% | 14.7% |
| **Post Secondary Teacher, Non-S&E FOD** | 20.5% | 10.0% | 14.0% |
| **Secondary Teacher, S&E FOD** | 4.0% | 4.0% | 7.3% |
| **Secondary teacher, non-S&E FOD** | 20.5% | 10.0% | 14.0% |
| **Non-S&E High Interest Occupations, S&E FOD** | 1.7% | 2.2% | 5.2% |
| **Non-S&E Low Interest Occupations, S&E FOD** | 4.3% | 4.3% | 7.6% |
| **Non-S&E Occupation, Non-S&E FOD** | 20.5% | 10.0% | 14.0% |
| **Not Working, S&E FOD** | 4.0% | 5.0% | 13.0% |
| **Not Working, Non-S&E FOD** | 13.4% | 15.0% | 19.0% |

*Notes:*

*(1) CV = Coefficient of Variation*

*(2) The total row and column CVs are approximated by the assumption of strata independence.*

*(3) S&E = Science and Engineering*

*(4) FOD = Field of Degree*

*(5) The Bachelor's degree column includes respondents with a Professional degree*

Attachment A-2

**Table A.3: NSCG Desired CV Levels - Detailed Occupation by Highest Degree Level**

| DETAILED OCCUPATION | HIGHEST DEGREE LEVEL | | |
|---|---|---|---|
| | Bachelor's | Master's | Doctorate |
| **Mathematician** | 2.7% | 3.4% | 10.7% |
| **Computer Scientist** | 3.5% | 3.9% | 7.7% |
| **Biological/medical scientists** | 5.5% | 6.0% | 7.0% |
| **Agriculture and other life scientists** | 5.5% | 5.8% | 6.7% |
| **Chemists, except biochemists** | 3.0% | 4.0% | 12.3% |
| **Physicists and other physical scientists** | 3.0% | 4.0% | 13.0% |
| **Psychologists** | 15.4% | 4.9% | 16.4% |
| **Economics** | 3.1% | 4.0% | 12.0% |
| **Other social scientists** | 3.0% | 4.0% | 13.4% |
| **Chemical engineers** | 3.0% | 4.0% | 25.8% |
| **Civil and architectural engineers** | 3.0% | 4.0% | 30.0% |
| **Electrical and computer engineers** | 3.0% | 4.0% | 14.2% |
| **Mechanical engineers** | 3.0% | 4.0% | 27.2% |
| **Other engineers** | 6.0% | 8.0% | 14.9% |
| **Health-Related Occupations** | 13.4% | 2.9% | 14.4% |
| **S&E-Related non-Health Occupations** | 13.4% | 2.9% | 14.4% |
| **Post secondary teacher, S&E FOD** | 3.0% | 4.0% | 14.7% |
| **Post secondary teacher, Non-S&E FOD** | 20.5% | 10.0% | 14.0% |
| **Secondary Teacher, S&E FOD** | 4.0% | 4.0% | 7.3% |
| **Secondary Teacher, Non-S&E FOD** | 20.5% | 10.0% | 14.0% |
| **Non-S&E High Interest Occupations, S&E FOD** | 1.7% | 2.2% | 5.2% |
| **Non-S&E Low Interest Occupations, S&E FOD** | 4.3% | 4.3% | 7.6% |
| **Non-S&E Occupation, Non-S&E FOD** | 20.5% | 10.0% | 14.0% |
| **Not Working, S&E FOD** | 4.0% | 5.0% | 13.0% |
| **Not Working, Non-S&E FOD** | 13.4% | 15.0% | 19.0% |

*Notes:*

 *(1) CV = Coefficient of Variation*

 *(2) The total row and column CVs are approximated by the assumption of strata independence.*

 *(3) S&E = Science and Engineering*

 *(4) FOD = Field of Degree*

 *(5) The Bachelor's degree column includes respondents with a Professional degree*

**Table B-1: 2010 NSCG Desired Number of Respondents - Broad Occupation by Demographic Group**

| BROAD OCCUPATION | USCAB or High Prob. of U.S. Earned Degree | | | | | | Low Prob. of U.S. Earned Degree | | |
| --- | --- | --- | --- | --- | --- | --- | --- | --- | --- |
| | Hispanic | Black | Asian | AIAN/NHPI | Disabled | White | Hispanic | Asian | Residual |
| Mathematician | 95 | 197 | 140 | 20 | 63 | 603 | 14 | 170 | 89 |
| Computer Scientists | 112 | 112 | 78 | 26 | 24 | 1,071 | 14 | 209 | 109 |
| Life Scientists | 67 | 65 | 50 | 10 | 26 | 483 | 22 | 138 | 129 |
| Physical Scientists | 76 | 63 | 48 | 27 | 17 | 355 | 13 | 119 | 104 |
| Social Scientists, Except Psychologists | 57 | 30 | 30 | 10 | 22 | 180 | 8 | 19 | 26 |
| Psychologists | 43 | 26 | 24 | 10 | 19 | 204 | 10 | 8 | 13 |
| Engineers | 238 | 335 | 290 | 24 | 99 | 371 | 42 | 232 | 156 |
| Health-Related Occupations | 80 | 37 | 51 | 15 | 38 | 827 | 18 | 12 | 16 |
| S&E-Related non-Health Occupations | 69 | 26 | 35 | 15 | 32 | 644 | 18 | 8 | 19 |
| Post secondary teacher, S&E FOD | 176 | 166 | 178 | 38 | 78 | 603 | 31 | 235 | 131 |
| Post secondary teacher, Non-S&E FOD | 18 | 11 | 10 | 9 | 19 | 228 | 10 | 20 | 33 |
| Secondary Teacher, S&E FOD | 249 | 271 | 99 | 56 | 186 | 385 | 39 | 58 | 104 |
| Secondary teacher, Non-S&E | 17 | 11 | 12 | 9 | 26 | 268 | 10 | 17 | 60 |
| Non-S&E High Interest Occup, S&E FOD | 811 | 1,171 | 1,049 | 109 | 348 | 1,340 | 146 | 728 | 638 |
| Non-S&E Low Interest Occup, S&E FOD | 626 | 522 | 420 | 147 | 297 | 475 | 78 | 392 | 295 |
| Non-S&E Occupations, Non-S&E FOD | 19 | 13 | 13 | 11 | 22 | 284 | 10 | 15 | 49 |
| Not Working, S&E FOD | 178 | 232 | 197 | 36 | 206 | 1,053 | 29 | 141 | 158 |
| Not Working, Non-S&E FOD | 12 | 19 | 21 | 9 | 48 | 133 | 7 | 23 | 54 |

Notes:

(1) USCAB = U.S. Citizen at Birth

(2) AIAN/NHPI = American Indian, Alaska Native / Native Hawaiian, Pacific Islander

(3) S&E = Science and Engineering

(4) FOD = Field of Degree

Attachment B-1

**Table B.2: NSCG Desired Number of Respondent - Broad Occupation by Highest Degree Level**

| BROAD OCCUPATION | HIGHEST DEGREE LEVEL | | |
| --- | --- | --- | --- |
| | Bachelor's | Master's | Doctorate |
| Mathematician | 787 | 586 | 61 |
| Computer Scientist | 578 | 605 | 119 |
| Life Scientists | 400 | 236 | 146 |
| Physical Scientists | 241 | 191 | 89 |
| Social Scientists, Except Psychologists | 169 | 125 | 43 |
| Psychologists | 23 | 254 | 30 |
| Engineers | 901 | 416 | 89 |
| Health-Related Occupations | 60 | 953 | 40 |
| S&E-Related non-Health Occupations | 37 | 843 | 30 |
| Post Secondary Teacher, S&E FOD | 937 | 550 | 32 |
| Post Secondary Teacher, Non-S&E FOD | 19 | 64 | 40 |
| Secondary Teacher, S&E FOD | 549 | 335 | 112 |
| Secondary teacher, non-S&E FOD | 23 | 71 | 44 |
| Non-S&E High Interest Occupations, S&E FOD | 2,403 | 1,076 | 237 |
| Non-S&E Low Interest Occupations, S&E FOD | 554 | 481 | 82 |
| Non-S&E Occupation, Non-S&E FOD | 25 | 67 | 41 |
| Not Working, S&E FOD | 533 | 295 | 38 |
| Not Working, Non-S&E FOD | 50 | 40 | 19 |

*Notes:*

*(1) S&E = Science and Engineering*

*(2) FOD = Field of Degree*

*(3) The Bachelor's degree column includes respondents with a Professional degree*

Attachment B-2

**Table B.3: NSCG Desired Number of Respondents - Detailed Occupation by Highest Degree Level**

| DETAILED OCCUPATION | HIGHEST DEGREE LEVEL | | |
|---|---|---|---|
| | **Bachelor's** | **Master's** | **Doctorate** |
| **Mathematician** | 787 | 586 | 61 |
| **Computer Scientist** | 578 | 605 | 119 |
| **Biological/medical scientists** | 273 | 171 | 126 |
| **Agriculture and other life scientists** | 231 | 214 | 90 |
| **Chemists, except biochemists** | 681 | 299 | 32 |
| **Physicists and other physical scientists** | 809 | 368 | 43 |
| **Psychologists** | 23 | 254 | 30 |
| **Economics** | 133 | 153 | 35 |
| **Other social scientists** | 748 | 366 | 42 |
| **Chemical engineers** | 598 | 203 | 12 |
| **Civil and architectural engineers** | 643 | 374 | 6 |
| **Electrical and computer engineers** | 744 | 401 | 33 |
| **Mechanical engineers** | 726 | 360 | 9 |
| **Other engineers** | 246 | 109 | 48 |
| **Health-Related Occupations** | 60 | 953 | 40 |
| **S&E-Related non-Health Occupations** | 37 | 843 | 30 |
| **Post secondary teacher, S&E FOD** | 937 | 550 | 32 |
| **Post secondary teacher, Non-S&E FOD** | 19 | 64 | 40 |
| **Secondary Teacher, S&E FOD** | 549 | 335 | 112 |
| **Secondary Teacher, Non-S&E FOD** | 23 | 71 | 44 |
| **Non-S&E High Interest Occupations, S&E FOD** | 2,403 | 1,076 | 237 |
| **Non-S&E Low Interest Occupations, S&E FOD** | 554 | 481 | 82 |
| **Non-S&E Occupation, Non-S&E FOD** | 25 | 67 | 41 |
| **Not Working, S&E FOD** | 533 | 295 | 38 |
| **Not Working, Non-S&E FOD** | 50 | 40 | 19 |

*Notes:*
 *(1) S&E = Science and Engineering*
 *(2) FOD = Field of Degree*
 *(3) The Bachelor's degree column includes respondents with a Professional degree*

**Table C.1: 2010 NSCG Response Rates - Primary Analytical Domain #1 by Difficulty to Enumerate Indicator**

| Demographic Group | Broad Occupation Group | Difficulty to Enumerate Indicator | 2010 NSCG Sample Cases | Response Rate |
|---|---|---|---|---|
| Hispanic | Mathematician | Other | 92 | 70.65% |
| Hispanic | Mathematician | Hard to Enumerate | 25 | 20.00% |
| Hispanic | Computer Scientists | Other | 169 | 65.09% |
| Hispanic | Computer Scientists | Hard to Enumerate | 54 | 38.89% |
| Hispanic | Life Scientists | Other | 71 | 64.79% |
| Hispanic | Life Scientists | Hard to Enumerate | 30 | 46.67% |
| Hispanic | Physical Scientists | Other | 120 | 75.00% |
| Hispanic | Physical Scientists | Hard to Enumerate | 35 | 42.86% |
| Hispanic | Social Scientists, Except Psychologists | Other | 76 | 63.16% |
| Hispanic | Social Scientists, Except Psychologists | Hard to Enumerate | 30 | 26.67% |
| Hispanic | Psychologists | Other | 60 | 66.67% |
| Hispanic | Psychologists | Hard to Enumerate | 13 | 38.46% |
| Hispanic | Engineers | Other | 360 | 61.39% |
| Hispanic | Engineers | Hard to Enumerate | 130 | 37.69% |
| Hispanic | Health-Related Occupations | Other | 148 | 60.81% |
| Hispanic | Health-Related Occupations | Hard to Enumerate | 72 | 34.72% |
| Hispanic | S&E-Related non-Health Occupations | Other | 134 | 61.94% |
| Hispanic | S&E-Related non-Health Occupations | Hard to Enumerate | 59 | 33.90% |
| Hispanic | Post secondary teacher, S&E FOD | Other | 267 | 69.29% |
| Hispanic | Post secondary teacher, S&E FOD | Hard to Enumerate | 80 | 37.50% |
| Hispanic | Post secondary teacher, Non-S&E FOD | Other | 59 | 66.10% |
| Hispanic | Post secondary teacher, Non-S&E FOD | Hard to Enumerate | 15 | 53.33% |
| Hispanic | Secondary Teacher, S&E FOD | Other | 164 | 59.15% |
| Hispanic | Secondary Teacher, S&E FOD | Hard to Enumerate | 76 | 42.11% |
| Hispanic | Secondary teacher, Non-S&E | Other | 14 | 64.29% |
| Hispanic | Secondary teacher, Non-S&E | Hard to Enumerate | 36 | 38.89% |
| Hispanic | Non-S&E High Interest Occupations, S&E FOD | Other | 967 | 60.08% |
| Hispanic | Non-S&E High Interest Occupations, S&E FOD | Hard to Enumerate | 382 | 33.25% |
| Hispanic | Non-S&E Low Interest Occupations, S&E FOD | Other | 750 | 58.00% |
| Hispanic | Non-S&E Low Interest Occupations, S&E FOD | Hard to Enumerate | 341 | 32.85% |
| Hispanic | Non-S&E Occupations, Non-S&E FOD | Other | 138 | 58.70% |
| Hispanic | Non-S&E Occupations, Non-S&E FOD | Hard to Enumerate | 96 | 23.96% |
| Hispanic | Not Working, S&E FOD | Other | 183 | 62.30% |
| Hispanic | Not Working, S&E FOD | Hard to Enumerate | 120 | 38.33% |
| Hispanic | Not Working, Non-S&E FOD | Other | 21 | 52.38% |
| Hispanic | Not Working, Non-S&E FOD | Hard to Enumerate | 23 | 43.48% |
| Black | Mathematician | Other | 128 | 57.81% |
| Black | Mathematician | Hard to Enumerate | 60 | 40.00% |
| Black | Computer Scientists | Other | 214 | 59.81% |
| Black | Computer Scientists | Hard to Enumerate | 134 | 30.60% |
| Black | Life Scientists | Other | 58 | 67.24% |
| Black | Life Scientists | Hard to Enumerate | 28 | 35.71% |
| Black | Physical Scientists | Other | 90 | 55.56% |
| Black | Physical Scientists | Hard to Enumerate | 37 | 24.32% |
| Black | Social Scientists, Except Psychologists | Other | 72 | 51.39% |
| Black | Social Scientists, Except Psychologists | Hard to Enumerate | 26 | 23.08% |
| Black | Psychologists | Other | 30 | 66.67% |
| Black | Psychologists | Hard to Enumerate | 15 | 33.33% |
| Black | Engineers | Other | 356 | 52.25% |
| Black | Engineers | Hard to Enumerate | 206 | 26.70% |
| Black | Health-Related Occupations | Other | 131 | 54.20% |

Attachment C-1

| Black | Health-Related Occupations | Hard to Enumerate | 83 | 26.51% |
|---|---|---|---|---|
| Black | S&E-Related non-Health Occupations | Other | 154 | 57.14% |
| Black | S&E-Related non-Health Occupations | Hard to Enumerate | 81 | 35.80% |
| Black | Post secondary teacher, S&E FOD | Other | 244 | 61.89% |
| Black | Post secondary teacher, S&E FOD | Hard to Enumerate | 110 | 32.73% |
| Black | Post secondary teacher, Non-S&E FOD | Other | 43 | 58.14% |
| Black | Post secondary teacher, Non-S&E FOD | Hard to Enumerate | 33 | 27.27% |
| Black | Secondary Teacher, S&E FOD | Other | 128 | 56.25% |
| Black | Secondary Teacher, S&E FOD | Hard to Enumerate | 128 | 25.00% |
| Black | Secondary teacher, Non-S&E | Other | 15 | 80.00% |
| Black | Secondary teacher, Non-S&E | Hard to Enumerate | 25 | 32.00% |
| Black | Non-S&E High Interest Occupations, S&E FOD | Other | 1,309 | 56.23% |
| Black | Non-S&E High Interest Occupations, S&E FOD | Hard to Enumerate | 686 | 32.22% |
| Black | Non-S&E Low Interest Occupations, S&E FOD | Other | 654 | 51.38% |
| Black | Non-S&E Low Interest Occupations, S&E FOD | Hard to Enumerate | 352 | 27.56% |
| Black | Non-S&E Occupations, Non-S&E FOD | Other | 112 | 61.61% |
| Black | Non-S&E Occupations, Non-S&E FOD | Hard to Enumerate | 158 | 25.32% |
| Black | Not Working, S&E FOD | Other | 255 | 58.04% |
| Black | Not Working, S&E FOD | Hard to Enumerate | 146 | 37.67% |
| Black | Not Working, Non-S&E FOD | Other | 28 | 64.29% |
| Black | Not Working, Non-S&E FOD | Hard to Enumerate | 31 | 25.81% |
| Asian | Mathematician | Other | 112 | 62.50% |
| Asian | Mathematician | Hard to Enumerate | 22 | 31.82% |
| Asian | Computer Scientists | Other | 264 | 62.88% |
| Asian | Computer Scientists | Hard to Enumerate | 54 | 42.59% |
| Asian | Life Scientists | Other | 86 | 72.09% |
| Asian | Life Scientists | Hard to Enumerate | 18 | 22.22% |
| Asian | Physical Scientists | Other | 204 | 62.26% |
| Asian | Physical Scientists | Hard to Enumerate | 30 | 33.33% |
| Asian | Social Scientists, Except Psychologists | Other | 98 | 62.25% |
| Asian | Social Scientists, Except Psychologists | Hard to Enumerate | 17 | 35.29% |
| Asian | Psychologists | Other | 32 | 65.63% |
| Asian | Psychologists | Hard to Enumerate | 6 | 50.00% |
| Asian | Engineers | Other | 570 | 65.61% |
| Asian | Engineers | Hard to Enumerate | 118 | 38.98% |
| Asian | Health-Related Occupations | Other | 153 | 54.90% |
| Asian | Health-Related Occupations | Hard to Enumerate | 31 | 29.03% |
| Asian | S&E-Related non-Health Occupations | Other | 96 | 69.79% |
| Asian | S&E-Related non-Health Occupations | Hard to Enumerate | 22 | 31.82% |
| Asian | Post secondary teacher, S&E FOD | Other | 288 | 68.06% |
| Asian | Post secondary teacher, S&E FOD | Hard to Enumerate | 48 | 52.08% |
| Asian | Post secondary teacher, Non-S&E FOD | Other | 36 | 69.44% |
| Asian | Post secondary teacher, Non-S&E FOD | Hard to Enumerate | 8 | 50.00% |
| Asian | Secondary Teacher, S&E FOD | Other | 81 | 61.73% |
| Asian | Secondary Teacher, S&E FOD | Hard to Enumerate | 17 | 29.41% |
| Asian | Secondary teacher, Non-S&E | Other | 16 | 68.75% |
| Asian | Secondary teacher, Non-S&E | Hard to Enumerate | 8 | 37.50% |
| Asian | Non-S&E High Interest Occupations, S&E FOD | Other | 1,411 | 61.52% |
| Asian | Non-S&E High Interest Occupations, S&E FOD | Hard to Enumerate | 317 | 37.54% |
| Asian | Non-S&E Low Interest Occupations, S&E FOD | Other | 608 | 57.57% |
| Asian | Non-S&E Low Interest Occupations, S&E FOD | Hard to Enumerate | 124 | 35.48% |
| Asian | Non-S&E Occupations, Non-S&E FOD | Other | 76 | 55.26% |
| Asian | Non-S&E Occupations, Non-S&E FOD | Hard to Enumerate | 43 | 37.21% |
| Asian | Not Working, S&E FOD | Other | 253 | 62.06% |
| Asian | Not Working, S&E FOD | Hard to Enumerate | 74 | 32.43% |
| Asian | Not Working, Non-S&E FOD | Other | 22 | 63.64% |

Attachment C-2

| | | | | |
|---|---|---|---|---|
| Asian | Not Working, Non-S&E FOD | Hard to Enumerate | 22 | 36.36% |
| AIAN/NHPI | Mathematician | Other | 15 | 60.00% |
| AIAN/NHPI | Mathematician | Hard to Enumerate | 4 | 50.00% |
| AIAN/NHPI | Computer Scientists | Other | 32 | 56.25% |
| AIAN/NHPI | Computer Scientists | Hard to Enumerate | 15 | 40.00% |
| AIAN/NHPI | Life Scientists | Other | 12 | 66.67% |
| AIAN/NHPI | Life Scientists | Hard to Enumerate | 7 | 57.14% |
| AIAN/NHPI | Physical Scientists | Other | 30 | 73.33% |
| AIAN/NHPI | Physical Scientists | Hard to Enumerate | 10 | 50.00% |
| AIAN/NHPI | Social Scientists, Except Psychologists | Other | 13 | 46.15% |
| AIAN/NHPI | Social Scientists, Except Psychologists | Hard to Enumerate | 1 | 100.00% |
| AIAN/NHPI | Psychologists | Other | 10 | 40.00% |
| AIAN/NHPI | Psychologists | Hard to Enumerate | 5 | 60.00% |
| AIAN/NHPI | Engineers | Other | 46 | 60.87% |
| AIAN/NHPI | Engineers | Hard to Enumerate | 14 | 28.57% |
| AIAN/NHPI | Health-Related Occupations | Other | 22 | 50.00% |
| AIAN/NHPI | Health-Related Occupations | Hard to Enumerate | 17 | 23.53% |
| AIAN/NHPI | S&E-Related non-Health Occupations | Other | 19 | 47.37% |
| AIAN/NHPI | S&E-Related non-Health Occupations | Hard to Enumerate | 14 | 28.57% |
| AIAN/NHPI | Post secondary teacher, S&E FOD | Other | 48 | 64.58% |
| AIAN/NHPI | Post secondary teacher, S&E FOD | Hard to Enumerate | 18 | 44.44% |
| AIAN/NHPI | Post secondary teacher, Non-S&E FOD | Other | 18 | 61.11% |
| AIAN/NHPI | Post secondary teacher, Non-S&E FOD | Hard to Enumerate | 8 | 25.00% |
| AIAN/NHPI | Secondary Teacher, S&E FOD | Other | 29 | 65.52% |
| AIAN/NHPI | Secondary Teacher, S&E FOD | Hard to Enumerate | 20 | 65.00% |
| AIAN/NHPI | Secondary teacher, Non-S&E | Other | 4 | 75.00% |
| AIAN/NHPI | Secondary teacher, Non-S&E | Hard to Enumerate | 14 | 21.43% |
| AIAN/NHPI | Non-S&E High Interest Occupations, S&E FOD | Other | 126 | 58.73% |
| AIAN/NHPI | Non-S&E High Interest Occupations, S&E FOD | Hard to Enumerate | 46 | 39.13% |
| AIAN/NHPI | Non-S&E Low Interest Occupations, S&E FOD | Other | 162 | 58.03% |
| AIAN/NHPI | Non-S&E Low Interest Occupations, S&E FOD | Hard to Enumerate | 69 | 30.44% |
| AIAN/NHPI | Non-S&E Occupations, Non-S&E FOD | Other | 24 | 54.17% |
| AIAN/NHPI | Non-S&E Occupations, Non-S&E FOD | Hard to Enumerate | 21 | 28.57% |
| AIAN/NHPI | Not Working, S&E FOD | Other | 36 | 66.67% |
| AIAN/NHPI | Not Working, S&E FOD | Hard to Enumerate | 23 | 34.78% |
| AIAN/NHPI | Not Working, Non-S&E FOD | Other | 11 | 54.55% |
| AIAN/NHPI | Not Working, Non-S&E FOD | Hard to Enumerate | 8 | 37.50% |
| Disabled | Mathematician | Other | 48 | 58.33% |
| Disabled | Mathematician | Hard to Enumerate | 14 | 42.86% |
| Disabled | Computer Scientists | Other | 57 | 70.18% |
| Disabled | Computer Scientists | Hard to Enumerate | 14 | 57.14% |
| Disabled | Life Scientists | Other | 39 | 69.23% |
| Disabled | Life Scientists | Hard to Enumerate | 12 | 66.67% |
| Disabled | Physical Scientists | Other | 60 | 75.00% |
| Disabled | Physical Scientists | Hard to Enumerate | 22 | 68.18% |
| Disabled | Social Scientists, Except Psychologists | Other | 36 | 69.44% |
| Disabled | Social Scientists, Except Psychologists | Hard to Enumerate | 17 | 64.71% |
| Disabled | Psychologists | Other | 28 | 75.00% |
| Disabled | Psychologists | Hard to Enumerate | 5 | 80.00% |
| Disabled | Engineers | Other | 164 | 67.68% |
| Disabled | Engineers | Hard to Enumerate | 49 | 46.94% |
| Disabled | Health-Related Occupations | Other | 79 | 69.62% |
| Disabled | Health-Related Occupations | Hard to Enumerate | 30 | 46.67% |
| Disabled | S&E-Related non-Health Occupations | Other | 67 | 65.67% |
| Disabled | S&E-Related non-Health Occupations | Hard to Enumerate | 22 | 40.91% |
| Disabled | Post secondary teacher, S&E FOD | Other | 142 | 73.94% |

| | | | | |
|---|---|---|---|---|
| Disabled | Post secondary teacher, S&E FOD | Hard to Enumerate | 29 | 68.97% |
| Disabled | Post secondary teacher, Non-S&E FOD | Other | 52 | 78.85% |
| Disabled | Post secondary teacher, Non-S&E FOD | Hard to Enumerate | 12 | 41.67% |
| Disabled | Secondary Teacher, S&E FOD | Other | 120 | 73.33% |
| Disabled | Secondary Teacher, S&E FOD | Hard to Enumerate | 55 | 56.36% |
| Disabled | Secondary teacher, Non-S&E | Other | 29 | 79.31% |
| Disabled | Secondary teacher, Non-S&E | Hard to Enumerate | 18 | 44.44% |
| Disabled | Non-S&E High Interest Occupations, S&E FOD | Other | 406 | 70.69% |
| Disabled | Non-S&E High Interest Occupations, S&E FOD | Hard to Enumerate | 118 | 49.15% |
| Disabled | Non-S&E Low Interest Occupations, S&E FOD | Other | 350 | 65.14% |
| Disabled | Non-S&E Low Interest Occupations, S&E FOD | Hard to Enumerate | 114 | 43.86% |
| Disabled | Non-S&E Occupations, Non-S&E FOD | Other | 102 | 65.69% |
| Disabled | Non-S&E Occupations, Non-S&E FOD | Hard to Enumerate | 38 | 57.90% |
| Disabled | Not Working, S&E FOD | Other | 264 | 71.59% |
| Disabled | Not Working, S&E FOD | Hard to Enumerate | 82 | 47.56% |
| Disabled | Not Working, Non-S&E FOD | Other | 90 | 64.44% |
| Disabled | Not Working, Non-S&E FOD | Hard to Enumerate | 38 | 63.16% |
| White/Other | Mathematician | Other | 1,051 | 67.94% |
| White/Other | Mathematician | Hard to Enumerate | 160 | 46.25% |
| White/Other | Computer Scientists | Other | 1,518 | 66.27% |
| White/Other | Computer Scientists | Hard to Enumerate | 235 | 45.96% |
| White/Other | Life Scientists | Other | 859 | 72.53% |
| White/Other | Life Scientists | Hard to Enumerate | 182 | 55.50% |
| White/Other | Physical Scientists | Other | 1,716 | 71.33% |
| White/Other | Physical Scientists | Hard to Enumerate | 271 | 52.03% |
| White/Other | Social Scientists, Except Psychologists | Other | 1,187 | 65.54% |
| White/Other | Social Scientists, Except Psychologists | Hard to Enumerate | 200 | 43.50% |
| White/Other | Psychologists | Other | 382 | 73.82% |
| White/Other | Psychologists | Hard to Enumerate | 60 | 46.67% |
| White/Other | Engineers | Other | 3,838 | 68.73% |
| White/Other | Engineers | Hard to Enumerate | 661 | 44.93% |
| White/Other | Health-Related Occupations | Other | 2,120 | 67.03% |
| White/Other | Health-Related Occupations | Hard to Enumerate | 440 | 42.27% |
| White/Other | S&E-Related non-Health Occupations | Other | 1,520 | 69.34% |
| White/Other | S&E-Related non-Health Occupations | Hard to Enumerate | 285 | 49.12% |
| White/Other | Post secondary teacher, S&E FOD | Other | 1,405 | 75.37% |
| White/Other | Post secondary teacher, S&E FOD | Hard to Enumerate | 242 | 55.79% |
| White/Other | Post secondary teacher, Non-S&E FOD | Other | 872 | 73.05% |
| White/Other | Post secondary teacher, Non-S&E FOD | Hard to Enumerate | 150 | 46.67% |
| White/Other | Secondary Teacher, S&E FOD | Other | 756 | 73.68% |
| White/Other | Secondary Teacher, S&E FOD | Hard to Enumerate | 205 | 46.34% |
| White/Other | Secondary teacher, Non-S&E | Other | 345 | 63.19% |
| White/Other | Secondary teacher, Non-S&E | Hard to Enumerate | 203 | 40.89% |
| White/Other | Non-S&E High Interest Occupations, S&E FOD | Other | 4,155 | 66.19% |
| White/Other | Non-S&E High Interest Occupations, S&E FOD | Hard to Enumerate | 726 | 41.05% |
| White/Other | Non-S&E Low Interest Occupations, S&E FOD | Other | 1,779 | 65.94% |
| White/Other | Non-S&E Low Interest Occupations, S&E FOD | Hard to Enumerate | 334 | 42.22% |
| White/Other | Non-S&E Occupations, Non-S&E FOD | Other | 2,088 | 63.22% |
| White/Other | Non-S&E Occupations, Non-S&E FOD | Hard to Enumerate | 790 | 36.08% |
| White/Other | Not Working, S&E FOD | Other | 1,416 | 69.77% |
| White/Other | Not Working, S&E FOD | Hard to Enumerate | 230 | 47.39% |
| White/Other | Not Working, Non-S&E FOD | Other | 356 | 64.61% |
| White/Other | Not Working, Non-S&E FOD | Hard to Enumerate | 102 | 41.18% |
| Hispanic (low) | Mathematician | Other | 21 | 76.19% |
| Hispanic (low) | Mathematician | Hard to Enumerate | 5 | 40.00% |
| Hispanic (low) | Computer Scientists | Other | 30 | 63.33% |

Attachment C-4

| | | | | |
|---|---|---|---|---:|---:|
| Hispanic (low) | Computer Scientists | Hard to Enumerate | 5 | 40.00% |
| Hispanic (low) | Life Scientists | Other | 36 | 69.44% |
| Hispanic (low) | Life Scientists | Hard to Enumerate | 8 | 25.00% |
| Hispanic (low) | Physical Scientists | Other | 30 | 60.00% |
| Hispanic (low) | Physical Scientists | Hard to Enumerate | 10 | 40.00% |
| Hispanic (low) | Social Scientists, Except Psychologists | Other | 21 | 71.43% |
| Hispanic (low) | Social Scientists, Except Psychologists | Hard to Enumerate | 8 | 25.00% |
| Hispanic (low) | Psychologists | Other | 12 | 75.00% |
| Hispanic (low) | Psychologists | Hard to Enumerate | . | 0.00% |
| Hispanic (low) | Engineers | Other | 98 | 64.29% |
| Hispanic (low) | Engineers | Hard to Enumerate | 33 | 39.39% |
| Hispanic (low) | Health-Related Occupations | Other | 37 | 48.65% |
| Hispanic (low) | Health-Related Occupations | Hard to Enumerate | 18 | 22.22% |
| Hispanic (low) | S&E-Related non-Health Occupations | Other | 34 | 61.77% |
| Hispanic (low) | S&E-Related non-Health Occupations | Hard to Enumerate | 9 | 33.33% |
| Hispanic (low) | Post secondary teacher, S&E FOD | Other | 67 | 71.64% |
| Hispanic (low) | Post secondary teacher, S&E FOD | Hard to Enumerate | 17 | 58.82% |
| Hispanic (low) | Post secondary teacher, Non-S&E FOD | Other | 23 | 60.87% |
| Hispanic (low) | Post secondary teacher, Non-S&E FOD | Hard to Enumerate | 7 | 28.57% |
| Hispanic (low) | Secondary Teacher, S&E FOD | Other | 23 | 65.22% |
| Hispanic (low) | Secondary Teacher, S&E FOD | Hard to Enumerate | 13 | 38.46% |
| Hispanic (low) | Secondary teacher, Non-S&E | Other | 11 | 45.46% |
| Hispanic (low) | Secondary teacher, Non-S&E | Hard to Enumerate | 10 | 10.00% |
| Hispanic (low) | Non-S&E High Interest Occupations, S&E FOD | Other | 198 | 52.02% |
| Hispanic (low) | Non-S&E High Interest Occupations, S&E FOD | Hard to Enumerate | 74 | 20.27% |
| Hispanic (low) | Non-S&E Low Interest Occupations, S&E FOD | Other | 112 | 51.79% |
| Hispanic (low) | Non-S&E Low Interest Occupations, S&E FOD | Hard to Enumerate | 77 | 16.88% |
| Hispanic (low) | Non-S&E Occupations, Non-S&E FOD | Other | 22 | 45.46% |
| Hispanic (low) | Non-S&E Occupations, Non-S&E FOD | Hard to Enumerate | 49 | 18.37% |
| Hispanic (low) | Not Working, S&E FOD | Other | 36 | 55.56% |
| Hispanic (low) | Not Working, S&E FOD | Hard to Enumerate | 25 | 28.00% |
| Hispanic (low) | Not Working, Non-S&E FOD | Other | 10 | 30.00% |
| Hispanic (low) | Not Working, Non-S&E FOD | Hard to Enumerate | 16 | 50.00% |
| Asian (low) | Mathematician | Other | 137 | 72.26% |
| Asian (low) | Mathematician | Hard to Enumerate | 24 | 50.00% |
| Asian (low) | Computer Scientists | Other | 520 | 64.81% |
| Asian (low) | Computer Scientists | Hard to Enumerate | 117 | 36.75% |
| Asian (low) | Life Scientists | Other | 204 | 75.98% |
| Asian (low) | Life Scientists | Hard to Enumerate | 44 | 43.18% |
| Asian (low) | Physical Scientists | Other | 322 | 66.15% |
| Asian (low) | Physical Scientists | Hard to Enumerate | 50 | 36.00% |
| Asian (low) | Social Scientists, Except Psychologists | Other | 77 | 57.14% |
| Asian (low) | Social Scientists, Except Psychologists | Hard to Enumerate | 19 | 52.63% |
| Asian (low) | Psychologists | Other | 11 | 90.91% |
| Asian (low) | Psychologists | Hard to Enumerate | 3 | 33.33% |
| Asian (low) | Engineers | Other | 613 | 68.84% |
| Asian (low) | Engineers | Hard to Enumerate | 116 | 52.59% |
| Asian (low) | Health-Related Occupations | Other | 136 | 52.94% |
| Asian (low) | Health-Related Occupations | Hard to Enumerate | 38 | 31.58% |
| Asian (low) | S&E-Related non-Health Occupations | Other | 101 | 68.32% |
| Asian (low) | S&E-Related non-Health Occupations | Hard to Enumerate | 20 | 45.00% |
| Asian (low) | Post secondary teacher, S&E FOD | Other | 334 | 68.26% |
| Asian (low) | Post secondary teacher, S&E FOD | Hard to Enumerate | 122 | 40.16% |
| Asian (low) | Post secondary teacher, Non-S&E FOD | Other | 59 | 69.49% |
| Asian (low) | Post secondary teacher, Non-S&E FOD | Hard to Enumerate | 14 | 28.57% |
| Asian (low) | Secondary Teacher, S&E FOD | Other | 38 | 73.68% |

Attachment C-5

| | | | | |
|---|---|---|---|---|
| Asian (low) | Secondary Teacher, S&E FOD | Hard to Enumerate | 18 | 61.11% |
| Asian (low) | Secondary teacher, Non-S&E | Other | 21 | 66.67% |
| Asian (low) | Secondary teacher, Non-S&E | Hard to Enumerate | 11 | 45.46% |
| Asian (low) | Non-S&E High Interest Occupations, S&E FOD | Other | 1,010 | 60.50% |
| Asian (low) | Non-S&E High Interest Occupations, S&E FOD | Hard to Enumerate | 270 | 37.04% |
| Asian (low) | Non-S&E Low Interest Occupations, S&E FOD | Other | 557 | 60.14% |
| Asian (low) | Non-S&E Low Interest Occupations, S&E FOD | Hard to Enumerate | 171 | 33.92% |
| Asian (low) | Non-S&E Occupations, Non-S&E FOD | Other | 66 | 59.09% |
| Asian (low) | Non-S&E Occupations, Non-S&E FOD | Hard to Enumerate | 56 | 35.71% |
| Asian (low) | Not Working, S&E FOD | Other | 202 | 57.43% |
| Asian (low) | Not Working, S&E FOD | Hard to Enumerate | 89 | 34.83% |
| Asian (low) | Not Working, Non-S&E FOD | Other | 45 | 53.33% |
| Asian (low) | Not Working, Non-S&E FOD | Hard to Enumerate | 32 | 34.38% |
| Other (low) | Mathematician | Other | 70 | 68.57% |
| Other (low) | Mathematician | Hard to Enumerate | 14 | 57.14% |
| Other (low) | Computer Scientists | Other | 203 | 69.95% |
| Other (low) | Computer Scientists | Hard to Enumerate | 61 | 37.71% |
| Other (low) | Life Scientists | Other | 163 | 69.94% |
| Other (low) | Life Scientists | Hard to Enumerate | 37 | 35.14% |
| Other (low) | Physical Scientists | Other | 206 | 67.96% |
| Other (low) | Physical Scientists | Hard to Enumerate | 37 | 40.54% |
| Other (low) | Social Scientists, Except Psychologists | Other | 84 | 57.14% |
| Other (low) | Social Scientists, Except Psychologists | Hard to Enumerate | 15 | 20.00% |
| Other (low) | Psychologists | Other | 20 | 85.00% |
| Other (low) | Psychologists | Hard to Enumerate | 5 | 0.00% |
| Other (low) | Engineers | Other | 413 | 63.20% |
| Other (low) | Engineers | Hard to Enumerate | 86 | 45.35% |
| Other (low) | Health-Related Occupations | Other | 96 | 59.38% |
| Other (low) | Health-Related Occupations | Hard to Enumerate | 45 | 26.67% |
| Other (low) | S&E-Related non-Health Occupations | Other | 80 | 65.00% |
| Other (low) | S&E-Related non-Health Occupations | Hard to Enumerate | 25 | 32.00% |
| Other (low) | Post secondary teacher, S&E FOD | Other | 241 | 68.88% |
| Other (low) | Post secondary teacher, S&E FOD | Hard to Enumerate | 72 | 43.06% |
| Other (low) | Post secondary teacher, Non-S&E FOD | Other | 78 | 75.64% |
| Other (low) | Post secondary teacher, Non-S&E FOD | Hard to Enumerate | 27 | 48.15% |
| Other (low) | Secondary Teacher, S&E FOD | Other | 66 | 75.76% |
| Other (low) | Secondary Teacher, S&E FOD | Hard to Enumerate | 30 | 40.00% |
| Other (low) | Secondary teacher, Non-S&E | Other | 61 | 63.93% |
| Other (low) | Secondary teacher, Non-S&E | Hard to Enumerate | 41 | 34.15% |
| Other (low) | Non-S&E High Interest Occupations, S&E FOD | Other | 879 | 59.84% |
| Other (low) | Non-S&E High Interest Occupations, S&E FOD | Hard to Enumerate | 233 | 33.48% |
| Other (low) | Non-S&E Low Interest Occupations, S&E FOD | Other | 386 | 57.77% |
| Other (low) | Non-S&E Low Interest Occupations, S&E FOD | Hard to Enumerate | 175 | 30.86% |
| Other (low) | Non-S&E Occupations, Non-S&E FOD | Other | 107 | 48.60% |
| Other (low) | Non-S&E Occupations, Non-S&E FOD | Hard to Enumerate | 71 | 30.99% |
| Other (low) | Not Working, S&E FOD | Other | 197 | 59.90% |
| Other (low) | Not Working, S&E FOD | Hard to Enumerate | 94 | 40.43% |
| Other (low) | Not Working, Non-S&E FOD | Other | 58 | 46.55% |
| Other (low) | Not Working, Non-S&E FOD | Hard to Enumerate | 60 | 36.67% |

*(1) AIAN/NHPI = American Indian, Alaska Native / Native Hawaiian, Pacific Islander*

*(2) S&E = Science and Engineering*

*(3) FOD = Field of Degree*

*(4) (low) = Low probability of U.S. earned degree cases.  All other cases are U.S. citizens at birth*
*or*
*high probability of U.S. earned degree cases.*

Attachment C-6

**Table C.2: 2010 NSCG Response Rates - Primary Analytical Domain #2 by Difficulty to Enumerate Indicator**

| Highest Degree Level | Broad Occupation Group | Difficulty to Enumerate Indicator | 2010 NSCG Sample Cases | Response Rate |
|---|---|---|---|---|
| Bachelor/ Professional | Mathematician | Other | 897 | 61.43% |
| Bachelor/ Professional | Mathematician | Hard to Enumerate | 202 | 39.60% |
| Bachelor/ Professional | Computer Scientists | Other | 1,871 | 64.19% |
| Bachelor/ Professional | Computer Scientists | Hard to Enumerate | 471 | 40.34% |
| Bachelor/ Professional | Life Scientists | Other | 580 | 69.14% |
| Bachelor/ Professional | Life Scientists | Hard to Enumerate | 194 | 45.88% |
| Bachelor/ Professional | Physical Scientists | Other | 1,628 | 66.46% |
| Bachelor/ Professional | Physical Scientists | Hard to Enumerate | 348 | 45.40% |
| Bachelor/ Professional | Social Scientists, Except Psychologists | Other | 975 | 59.80% |
| Bachelor/ Professional | Social Scientists, Except Psychologists | Hard to Enumerate | 237 | 37.98% |
| Bachelor/ Professional | Psychologists | Other | 68 | 64.71% |
| Bachelor/ Professional | Psychologists | Hard to Enumerate | 25 | 36.00% |
| Bachelor/ Professional | Engineers | Other | 4,182 | 64.95% |
| Bachelor/ Professional | Engineers | Hard to Enumerate | 994 | 40.34% |
| Bachelor/ Professional | Health-Related Occupations | Other | 1,657 | 63.01% |
| Bachelor/ Professional | Health-Related Occupations | Hard to Enumerate | 429 | 34.03% |
| Bachelor/ Professional | S&E-Related non-Health Occupations | Other | 1,003 | 62.71% |
| Bachelor/ Professional | S&E-Related non-Health Occupations | Hard to Enumerate | 265 | 42.64% |
| Bachelor/ Professional | Post secondary teacher, S&E FOD | Other | 1,222 | 67.59% |
| Bachelor/ Professional | Post secondary teacher, S&E FOD | Hard to Enumerate | 398 | 40.96% |
| Bachelor/ Professional | Post secondary teacher, Non-S&E FOD | Other | 323 | 69.35% |
| Bachelor/ Professional | Post secondary teacher, Non-S&E FOD | Hard to Enumerate | 99 | 40.40% |
| Bachelor/ Professional | Secondary Teacher, S&E FOD | Other | 748 | 66.58% |
| Bachelor/ Professional | Secondary Teacher, S&E FOD | Hard to Enumerate | 324 | 39.20% |
| Bachelor/ Professional | Secondary teacher, Non-S&E | Other | 249 | 59.44% |
| Bachelor/ Professional | Secondary teacher, Non-S&E | Hard to Enumerate | 200 | 32.50% |
| Bachelor/ Professional | Non-S&E High Interest Occupations, S&E FOD | Other | 7,044 | 59.97% |
| Bachelor/ Professional | Non-S&E High Interest Occupations, S&E FOD | Hard to Enumerate | 2,038 | 34.54% |
| Bachelor/ Professional | Non-S&E Low Interest Occupations, S&E FOD | Other | 3,858 | 58.35% |
| Bachelor/ Professional | Non-S&E Low Interest Occupations, S&E FOD | Hard to Enumerate | 1,398 | 31.69% |
| Bachelor/ Professional | Non-S&E Occupations, Non-S&E FOD | Other | 2,033 | 58.83% |

Attachment C-7

| Highest Degree Level | Broad Occupation Group | Difficulty to Enumerate Indicator | 2010 NSCG Sample Cases | Response Rate |
|---|---|---|---|---|
| Bachelor/ Professional | Non-S&E Occupations, Non-S&E FOD | Hard to Enumerate | 1,034 | 32.11% |
| Bachelor/ Professional | Not Working, S&E FOD | Other | 2,015 | 64.91% |
| Bachelor/ Professional | Not Working, S&E FOD | Hard to Enumerate | 681 | 38.91% |
| Bachelor/ Professional | Not Working, Non-S&E FOD | Other | 462 | 58.23% |
| Bachelor/ Professional | Not Working, Non-S&E FOD | Hard to Enumerate | 253 | 38.74% |
| Master | Mathematician | Other | 658 | 72.80% |
| Master | Mathematician | Hard to Enumerate | 114 | 50.00% |
| Master | Computer Scientists | Other | 943 | 66.38% |
| Master | Computer Scientists | Hard to Enumerate | 200 | 37.00% |
| Master | Life Scientists | Other | 485 | 72.78% |
| Master | Life Scientists | Hard to Enumerate | 113 | 53.98% |
| Master | Physical Scientists | Other | 783 | 73.82% |
| Master | Physical Scientists | Hard to Enumerate | 127 | 50.39% |
| Master | Social Scientists, Except Psychologists | Other | 592 | 68.75% |
| Master | Social Scientists, Except Psychologists | Hard to Enumerate | 81 | 45.68% |
| Master | Psychologists | Other | 340 | 73.53% |
| Master | Psychologists | Hard to Enumerate | 57 | 45.61% |
| Master | Engineers | Other | 2,063 | 69.66% |
| Master | Engineers | Hard to Enumerate | 398 | 44.47% |
| Master | Health-Related Occupations | Other | 1,153 | 67.48% |
| Master | Health-Related Occupations | Hard to Enumerate | 287 | 40.77% |
| Master | S&E-Related non-Health Occupations | Other | 1,149 | 71.19% |
| Master | S&E-Related non-Health Occupations | Hard to Enumerate | 260 | 43.08% |
| Master | Post secondary teacher, S&E FOD | Other | 977 | 73.80% |
| Master | Post secondary teacher, S&E FOD | Hard to Enumerate | 216 | 49.54% |
| Master | Post secondary teacher, Non-S&E FOD | Other | 524 | 70.42% |
| Master | Post secondary teacher, Non-S&E FOD | Hard to Enumerate | 117 | 37.61% |
| Master | Secondary Teacher, S&E FOD | Other | 567 | 72.49% |
| Master | Secondary Teacher, S&E FOD | Hard to Enumerate | 219 | 45.21% |
| Master | Secondary teacher, Non-S&E | Other | 228 | 67.98% |
| Master | Secondary teacher, Non-S&E | Hard to Enumerate | 140 | 40.71% |
| Master | Non-S&E High Interest Occupations, S&E FOD | Other | 2,948 | 66.76% |
| Master | Non-S&E High Interest Occupations, S&E FOD | Hard to Enumerate | 688 | 40.41% |
| Master | Non-S&E Low Interest Occupations, S&E FOD | Other | 1,344 | 65.70% |
| Master | Non-S&E Low Interest Occupations, S&E FOD | Hard to Enumerate | 335 | 41.19% |
| Master | Non-S&E Occupations, Non-S&E FOD | Other | 638 | 70.69% |
| Master | Non-S&E Occupations, Non-S&E FOD | Hard to Enumerate | 253 | 37.15% |
| Master | Not Working, S&E FOD | Other | 697 | 68.87% |
| Master | Not Working, S&E FOD | Hard to Enumerate | 180 | 46.11% |
| Master | Not Working, Non-S&E FOD | Other | 153 | 68.63% |

Attachment C-8

| Highest Degree Level | Broad Occupation Group | Difficulty to Enumerate Indicator | 2010 NSCG Sample Cases | Response Rate |
|---|---|---|---|---|
| Master | Not Working, Non-S&E FOD | Hard to Enumerate | 65 | 49.23% |
| Doctorate | Mathematician | Other | 119 | 78.15% |
| Doctorate | Mathematician | Hard to Enumerate | 12 | 25.00% |
| Doctorate | Computer Scientists | Other | 193 | 72.02% |
| Doctorate | Computer Scientists | Hard to Enumerate | 18 | 61.11% |
| Doctorate | Life Scientists | Other | 463 | 74.51% |
| Doctorate | Life Scientists | Hard to Enumerate | 59 | 42.37% |
| Doctorate | Physical Scientists | Other | 367 | 73.30% |
| Doctorate | Physical Scientists | Hard to Enumerate | 27 | 37.04% |
| Doctorate | Social Scientists, Except Psychologists | Other | 97 | 74.23% |
| Doctorate | Social Scientists, Except Psychologists | Hard to Enumerate | 15 | 46.67% |
| Doctorate | Psychologists | Other | 177 | 73.45% |
| Doctorate | Psychologists | Hard to Enumerate | 30 | 46.67% |
| Doctorate | Engineers | Other | 213 | 70.89% |
| Doctorate | Engineers | Hard to Enumerate | 21 | 42.86% |
| Doctorate | Health-Related Occupations | Other | 112 | 50.89% |
| Doctorate | Health-Related Occupations | Hard to Enumerate | 58 | 43.10% |
| Doctorate | S&E-Related non-Health Occupations | Other | 53 | 75.47% |
| Doctorate | S&E-Related non-Health Occupations | Hard to Enumerate | 12 | 33.33% |
| Doctorate | Post secondary teacher, S&E FOD | Other | 837 | 74.31% |
| Doctorate | Post secondary teacher, S&E FOD | Hard to Enumerate | 124 | 59.68% |
| Doctorate | Post secondary teacher, Non-S&E FOD | Other | 393 | 76.08% |
| Doctorate | Post secondary teacher, Non-S&E FOD | Hard to Enumerate | 58 | 56.90% |
| Doctorate | Secondary Teacher, S&E FOD | Other | 90 | 74.44% |
| Doctorate | Secondary Teacher, S&E FOD | Hard to Enumerate | 19 | 52.63% |
| Doctorate | Secondary teacher, Non-S&E | Other | 39 | 79.49% |
| Doctorate | Secondary teacher, Non-S&E | Hard to Enumerate | 26 | 65.39% |
| Doctorate | Non-S&E High Interest Occupations, S&E FOD | Other | 469 | 73.35% |
| Doctorate | Non-S&E High Interest Occupations, S&E FOD | Hard to Enumerate | 126 | 41.27% |
| Doctorate | Non-S&E Low Interest Occupations, S&E FOD | Other | 156 | 62.82% |
| Doctorate | Non-S&E Low Interest Occupations, S&E FOD | Hard to Enumerate | 24 | 37.50% |
| Doctorate | Non-S&E Occupations, Non-S&E FOD | Other | 64 | 71.88% |
| Doctorate | Non-S&E Occupations, Non-S&E FOD | Hard to Enumerate | 35 | 48.57% |
| Doctorate | Not Working, S&E FOD | Other | 130 | 66.15% |
| Doctorate | Not Working, S&E FOD | Hard to Enumerate | 22 | 40.91% |
| Doctorate | Not Working, Non-S&E FOD | Other | 26 | 65.39% |
| Doctorate | Not Working, Non-S&E FOD | Hard to Enumerate | 14 | 42.86% |

*Notes:*

 *(1) S&E = Science and Engineering*

 *(2) FOD = Field of Degree*

Attachment C-9

**Table C.3: 2010 NSCG Response Rates - Primary Analytical Domain #3 by Difficulty to Enumerate Indicator**

| Highest Degree Level | Broad Occupation Group | Difficulty to Enumerate Indicator | 2010 NSCG Sample Cases | Response Rate |
|---|---|---|---|---|
| Bachelor/Professional | Mathematician | Other | 897 | 61.43% |
| Bachelor/Professional | Mathematician | Hard to Enumerate | 202 | 39.60% |
| Bachelor/Professional | Computer Scientist | Other | 1,871 | 64.19% |
| Bachelor/Professional | Computer Scientist | Hard to Enumerate | 471 | 40.34% |
| Bachelor/Professional | Biological/medical scientists | Other | 346 | 69.94% |
| Bachelor/Professional | Biological/medical scientists | Hard to Enumerate | 103 | 38.84% |
| Bachelor/Professional | Agriculture and other life scientists | Other | 234 | 67.95% |
| Bachelor/Professional | Agriculture and other life scientists | Hard to Enumerate | 91 | 53.85% |
| Bachelor/Professional | Chemists, except biochemists | Other | 624 | 65.22% |
| Bachelor/Professional | Chemists, except biochemists | Hard to Enumerate | 148 | 43.24% |
| Bachelor/Professional | Physicists and other physical scientists | Other | 1,004 | 67.23% |
| Bachelor/Professional | Physicists and other physical scientists | Hard to Enumerate | 200 | 47.00% |
| Bachelor/Professional | Psychologists | Other | 68 | 64.71% |
| Bachelor/Professional | Psychologists | Hard to Enumerate | 25 | 36.00% |
| Bachelor/Professional | Economics | Other | 93 | 64.52% |
| Bachelor/Professional | Economics | Hard to Enumerate | 31 | 38.71% |
| Bachelor/Professional | Other social scientists | Other | 882 | 59.30% |
| Bachelor/Professional | Other social scientists | Hard to Enumerate | 206 | 37.86% |
| Bachelor/Professional | Chemical engineers | Other | 502 | 66.73% |
| Bachelor/Professional | Chemical engineers | Hard to Enumerate | 83 | 51.81% |
| Bachelor/Professional | Civil and architectural engineers | Other | 840 | 62.38% |
| Bachelor/Professional | Civil and architectural engineers | Hard to Enumerate | 198 | 43.43% |
| Bachelor/Professional | Electrical and computer engineers | Other | 858 | 64.92% |
| Bachelor/Professional | Electrical and computer engineers | Hard to Enumerate | 246 | 34.55% |
| Bachelor/Professional | Mechanical engineers | Other | 885 | 66.55% |
| Bachelor/Professional | Mechanical engineers | Hard to Enumerate | 181 | 37.57% |
| Bachelor/Professional | Other engineers | Other | 1,097 | 64.81% |
| Bachelor/Professional | Other engineers | Hard to Enumerate | 286 | 41.61% |
| Bachelor/Professional | Health-Related Occupations | Other | 1,657 | 63.01% |
| Bachelor/Professional | Health-Related Occupations | Hard to Enumerate | 429 | 34.03% |
| Bachelor/Professional | S&E-Related non-Health Occupations | Other | 1,003 | 62.71% |

| Highest Degree Level | Broad Occupation Group | Difficulty to Enumerate Indicator | 2010 NSCG Sample Cases | Response Rate |
|---|---|---|---|---|
| Bachelor/Professional | S&E-Related non-Health Occupations | Hard to Enumerate | 265 | 42.64% |
| Bachelor/Professional | Post secondary teacher, S&E FOD | Other | 1,222 | 67.59% |
| Bachelor/Professional | Post secondary teacher, S&E FOD | Hard to Enumerate | 398 | 40.96% |
| Bachelor/Professional | Post secondary teacher, Non-S&E FOD | Other | 323 | 69.35% |
| Bachelor/Professional | Post secondary teacher, Non-S&E FOD | Hard to Enumerate | 99 | 40.40% |
| Bachelor/Professional | Secondary Teacher, S&E FOD | Other | 748 | 66.58% |
| Bachelor/Professional | Secondary Teacher, S&E FOD | Hard to Enumerate | 324 | 39.20% |
| Bachelor/Professional | Secondary Teacher, Non-S&E FOD | Other | 249 | 59.44% |
| Bachelor/Professional | Secondary Teacher, Non-S&E FOD | Hard to Enumerate | 200 | 32.50% |
| Bachelor/Professional | Non-S&E High Interest Occupations, S&E FOD | Other | 7,044 | 59.97% |
| Bachelor/Professional | Non-S&E High Interest Occupations, S&E FOD | Hard to Enumerate | 2,038 | 34.54% |
| Bachelor/Professional | Non-S&E Low Interest Occupations, S&E FOD | Other | 3,858 | 58.35% |
| Bachelor/Professional | Non-S&E Low Interest Occupations, S&E FOD | Hard to Enumerate | 1,398 | 31.69% |
| Bachelor/Professional | Non-S&E Occupation, Non-S&E FOD | Other | 2,033 | 58.83% |
| Bachelor/Professional | Non-S&E Occupation, Non-S&E FOD | Hard to Enumerate | 1,034 | 32.11% |
| Bachelor/Professional | Not Working, S&E FOD | Other | 2,015 | 64.91% |
| Bachelor/Professional | Not Working, S&E FOD | Hard to Enumerate | 681 | 38.91% |
| Bachelor/Professional | Not Working, Non-S&E FOD | Other | 462 | 58.23% |
| Bachelor/Professional | Not Working, Non-S&E FOD | Hard to Enumerate | 253 | 38.74% |
| Master | Mathematician | Other | 658 | 72.80% |
| Master | Mathematician | Hard to Enumerate | 114 | 50.00% |
| Master | Computer Scientist | Other | 943 | 66.38% |
| Master | Computer Scientist | Hard to Enumerate | 200 | 37.00% |
| Master | Biological/medical scientists | Other | 329 | 70.52% |
| Master | Biological/medical scientists | Hard to Enumerate | 81 | 48.15% |
| Master | Agriculture and other life scientists | Other | 156 | 77.56% |
| Master | Agriculture and other life scientists | Hard to Enumerate | 32 | 68.75% |
| Master | Chemists, except biochemists | Other | 232 | 72.41% |
| Master | Chemists, except biochemists | Hard to Enumerate | 56 | 37.50% |
| Master | Physicists and other physical scientists | Other | 551 | 74.41% |
| Master | Physicists and other physical scientists | Hard to Enumerate | 71 | 60.56% |
| Master | Psychologists | Other | 340 | 73.53% |
| Master | Psychologists | Hard to Enumerate | 57 | 45.61% |
| Master | Economics | Other | 132 | 69.70% |
| Master | Economics | Hard to Enumerate | 19 | 47.37% |
| Master | Other social scientists | Other | 460 | 68.48% |
| Master | Other social scientists | Hard to Enumerate | 62 | 45.16% |
| Master | Chemical engineers | Other | 174 | 66.09% |
| Master | Chemical engineers | Hard to Enumerate | 25 | 36.00% |
| Master | Civil and architectural engineers | Other | 457 | 70.46% |
| Master | Civil and architectural engineers | Hard to Enumerate | 73 | 38.36% |
| Master | Electrical and computer engineers | Other | 468 | 69.44% |
| Master | Electrical and computer engineers | Hard to Enumerate | 101 | 46.54% |

Attachment C-11

| Highest Degree Level | Broad Occupation Group | Difficulty to Enumerate Indicator | 2010 NSCG Sample Cases | Response Rate |
|---|---|---|---|---|
| Master | Mechanical engineers | Other | 418 | 68.90% |
| Master | Mechanical engineers | Hard to Enumerate | 83 | 46.99% |
| Master | Other engineers | Other | 546 | 70.88% |
| Master | Other engineers | Hard to Enumerate | 116 | 46.55% |
| Master | Health-Related Occupations | Other | 1,153 | 67.48% |
| Master | Health-Related Occupations | Hard to Enumerate | 287 | 40.77% |
| Master | S&E-Related non-Health Occupations | Other | 1,149 | 71.19% |
| Master | S&E-Related non-Health Occupations | Hard to Enumerate | 260 | 43.08% |
| Master | Post secondary teacher, S&E FOD | Other | 977 | 73.80% |
| Master | Post secondary teacher, S&E FOD | Hard to Enumerate | 216 | 49.54% |
| Master | Post secondary teacher, Non-S&E FOD | Other | 524 | 70.42% |
| Master | Post secondary teacher, Non-S&E FOD | Hard to Enumerate | 117 | 37.61% |
| Master | Secondary Teacher, S&E FOD | Other | 567 | 72.49% |
| Master | Secondary Teacher, S&E FOD | Hard to Enumerate | 219 | 45.21% |
| Master | Secondary Teacher, Non-S&E FOD | Other | 228 | 67.98% |
| Master | Secondary Teacher, Non-S&E FOD | Hard to Enumerate | 140 | 40.71% |
| Master | Non-S&E High Interest Occupations, S&E FOD | Other | 2,948 | 66.76% |
| Master | Non-S&E High Interest Occupations, S&E FOD | Hard to Enumerate | 688 | 40.41% |
| Master | Non-S&E Low Interest Occupations, S&E FOD | Other | 1,344 | 65.70% |
| Master | Non-S&E Low Interest Occupations, S&E FOD | Hard to Enumerate | 335 | 41.19% |
| Master | Non-S&E Occupation, Non-S&E FOD | Other | 638 | 70.69% |
| Master | Non-S&E Occupation, Non-S&E FOD | Hard to Enumerate | 253 | 37.15% |
| Master | Not Working, S&E FOD | Other | 697 | 68.87% |
| Master | Not Working, S&E FOD | Hard to Enumerate | 180 | 46.11% |
| Master | Not Working, Non-S&E FOD | Other | 153 | 68.63% |
| Master | Not Working, Non-S&E FOD | Hard to Enumerate | 65 | 49.23% |
| Doctorate | Mathematician | Other | 119 | 78.15% |
| Doctorate | Mathematician | Hard to Enumerate | 12 | 25.00% |
| Doctorate | Computer Scientist | Other | 193 | 72.02% |
| Doctorate | Computer Scientist | Hard to Enumerate | 18 | 61.11% |
| Doctorate | Biological/medical scientists | Other | 398 | 73.87% |
| Doctorate | Biological/medical scientists | Hard to Enumerate | 51 | 43.14% |
| Doctorate | Agriculture and other life scientists | Other | 65 | 78.46% |
| Doctorate | Agriculture and other life scientists | Hard to Enumerate | 8 | 37.50% |
| Doctorate | Chemists, except biochemists | Other | 55 | 78.18% |
| Doctorate | Chemists, except biochemists | Hard to Enumerate | 3 | 33.33% |
| Doctorate | Physicists and other physical scientists | Other | 312 | 72.44% |
| Doctorate | Physicists and other physical scientists | Hard to Enumerate | 24 | 37.50% |
| Doctorate | Psychologists | Other | 177 | 73.45% |
| Doctorate | Psychologists | Hard to Enumerate | 30 | 46.67% |
| Doctorate | Economics | Other | 46 | 71.74% |
| Doctorate | Economics | Hard to Enumerate | 8 | 62.50% |
| Doctorate | Other social scientists | Other | 51 | 76.47% |

Attachment C-12

| Highest Degree Level | Broad Occupation Group | Difficulty to Enumerate Indicator | 2010 NSCG Sample Cases | Response Rate |
|---|---|---|---|---|
| Doctorate | Other social scientists | Hard to Enumerate | 7 | 28.57% |
| Doctorate | Chemical engineers | Other | 17 | 88.24% |
| Doctorate | Chemical engineers | Hard to Enumerate | 3 | 100.00% |
| Doctorate | Civil and architectural engineers | Other | 21 | 80.95% |
| Doctorate | Civil and architectural engineers | Hard to Enumerate | 4 | 25.00% |
| Doctorate | Electrical and computer engineers | Other | 46 | 71.74% |
| Doctorate | Electrical and computer engineers | Hard to Enumerate | 5 | 20.00% |
| Doctorate | Mechanical engineers | Other | 19 | 63.16% |
| Doctorate | Mechanical engineers | Hard to Enumerate | 1 | 100.00% |
| Doctorate | Other engineers | Other | 110 | 67.27% |
| Doctorate | Other engineers | Hard to Enumerate | 8 | 37.50% |
| Doctorate | Health-Related Occupations | Other | 112 | 50.89% |
| Doctorate | Health-Related Occupations | Hard to Enumerate | 58 | 43.10% |
| Doctorate | S&E-Related non-Health Occupations | Other | 53 | 75.47% |
| Doctorate | S&E-Related non-Health Occupations | Hard to Enumerate | 12 | 33.33% |
| Doctorate | Post secondary teacher, S&E FOD | Other | 837 | 74.31% |
| Doctorate | Post secondary teacher, S&E FOD | Hard to Enumerate | 124 | 59.68% |
| Doctorate | Post secondary teacher, Non-S&E FOD | Other | 393 | 76.08% |
| Doctorate | Post secondary teacher, Non-S&E FOD | Hard to Enumerate | 58 | 56.90% |
| Doctorate | Secondary Teacher, S&E FOD | Other | 90 | 74.44% |
| Doctorate | Secondary Teacher, S&E FOD | Hard to Enumerate | 19 | 52.63% |
| Doctorate | Secondary Teacher, Non-S&E FOD | Other | 39 | 79.49% |
| Doctorate | Secondary Teacher, Non-S&E FOD | Hard to Enumerate | 26 | 65.39% |
| Doctorate | Non-S&E High Interest Occupations, S&E FOD | Other | 469 | 73.35% |
| Doctorate | Non-S&E High Interest Occupations, S&E FOD | Hard to Enumerate | 126 | 41.27% |
| Doctorate | Non-S&E Low Interest Occupations, S&E FOD | Other | 156 | 62.82% |
| Doctorate | Non-S&E Low Interest Occupations, S&E FOD | Hard to Enumerate | 24 | 37.50% |
| Doctorate | Non-S&E Occupation, Non-S&E FOD | Other | 64 | 71.88% |
| Doctorate | Non-S&E Occupation, Non-S&E FOD | Hard to Enumerate | 35 | 48.57% |
| Doctorate | Not Working, S&E FOD | Other | 130 | 66.15% |
| Doctorate | Not Working, S&E FOD | Hard to Enumerate | 22 | 40.91% |
| Doctorate | Not Working, Non-S&E FOD | Other | 26 | 65.39% |
| Doctorate | Not Working, Non-S&E FOD | Hard to Enumerate | 14 | 42.86% |

*Notes:*

 *(1) S&E = Science and Engineering*

 *(2) FOD = Field of Degree*