SIGMA XI POSTDOC SURVEY

REPORTS

I. OVERVIEW
The results of the Sigma Xi Postdoc Survey project will be delivered in a number of different report formats to various stakeholders. The goals in designing the following report structure are to:

- protect the privacy of individual respondents and the confidentiality of individual responses;
- provide information to institutional participants at both the institutional and ‘division’ levels (‘divisions’ being major schools within academic institutions or departments within non-academic institutions);
- offer comparative data from peer institutions to those institutions that elect to participate in data sharing;
- create an aggregated report on selected, non-sensitive data that will be released publicly.

II. MODULES
In order to keep the length of the survey manageable, survey questions have been segmented into different categories:

- **Core questions** are asked on all surveys and can be reported at all levels (division, institution, national). Only selected core questions will be aggregated and released at a national level.
- **Medium-frequency questions** are asked on 50% of surveys and will be reported at the institutional and national levels. Division-level reports may be possible depending on the number of respondents.
- **Low-frequency questions** are asked on 1 of every 8 surveys and will be reported as national aggregates. Institution-level reports may be possible depending on the number of respondents.
- **Institutional questions** are designed by the institutional team and are asked of all participants from that particular institution. Results for these questions are reported at the institutional level. Division-level reports may be possible depending on the number of respondents.

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Report Design:
- Protects Privacy,
- Provides institutional information,
- Offers comparative data,
- Aggregates non-sensitive data.

Modules are used to manage the frequency with which certain questions are administered.

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III. Who Gets the Reports?

In order to protect the privacy of the respondents, any individual or institution that has access to reports (other than public reports) is required to abide by the privacy policy and the institutional participation agreement (that you should have already submitted if you are reading this Toolkit). These documents are available online and are included in this Toolkit.

A. Reports for Participating Institutions

At each participating institution, there is a local team responsible for promoting the survey, locating postdocs and working with Sigma Xi staff on the project. This team may include: individual postdocs, postdoc association representatives, postdoc office staff, Sigma Xi chapter representatives and members of the institutional administration. Just as you did, all teams are required to secure written support for this project by a member of the administration.

Upon completion of the data collection, a copy of and/or link to the reports (described below) containing institution-level results will be delivered to each member of the local team and to the sponsoring administrator. The primary goal of this project is to enable institutions to assess their postdoc policies and environment and to benchmark local postdoc experiences against those at peer institutions. These reports are intended for use as tools to open or continue dialogue among the relevant stakeholders.

Institutional representatives may determine their own guidelines for distributing their institutional reports. However, institutions participating in data sharing may not redistribute any other institution’s reports without that institution’s expressed permission.

B. Cross-Institutional Reports

Each participating institution will have the option to participate in data sharing with other similar institutions. In order for an institution to receive comparative data about other institutions, the institution must agree to make their data available for use by other institutions in cross-institutional reports. Reports that involve cross-institutional data will be provided only to those that participate in data sharing. Institutions may choose no fewer than 5 specific peer institutions from among the participating institutions, and data from those peers will be presented on the reports in a way that facilitates comparisons. However, the peer institution names and all open-ended responses will be stripped from the cross-institutional reports.
C. Public Reports
Sigma Xi will publish a set of reports containing data aggregated at the national level. In addition, Sigma Xi will create a set of public reports on participating institutions that will report demographics of the local postdoc population, basic information on salaries and availability of benefits, and cost of living information. These public institution-level reports will not contain answers to subjective questions such as job satisfaction and will not be ranked in any way.

D. Partner Reports
Survey partners will have access to reports containing nationally aggregated data over and above those that Sigma Xi makes public. Partners will then have permission to publish the data within strict privacy-protection guidelines. Partners will not have access to institution level data and will not be permitted to rank institutions in any way.

E. Data for Researchers
Some data will be made available to individual researchers studying the scientific workforce. These researchers will be required to submit written applications for using the data and to sign strict agreements that protect the privacy of individuals and institutions that participate in the project.

IV. REPORT CONTENT AND FORMAT
A. Basic Report
The basic report provided to institutions will consist of a summary of all responses to questions on the survey. For institution-level reports, we will display responses to all questions in the core and medium-frequency modules (see Section II above). In all our reports, we will only display responses to all questions for which there are sufficient numbers of responses that we are able to protect respondent anonymity. For concreteness, we offer a few examples along with description of our planned reporting format (subject to change).

Public reports will contain non-sensitive data, aggregated at a national level.

Your institution-level report will display responses to all questions from the core and medium-frequency modules.

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The following are typical survey questions:

YP04. How does your institution classify your position?

1=Employee
2=Student
3=Other
4=Don’t know

YR04. In your current position, are you permitted to submit a funding proposal as a principal investigator?

1=Yes
2=No
3=Don’t know

YR08. To what extent do you agree or disagree with the following statement?

Strongly Disagree | Somewhat Disagree | Neither Agree nor Disagree | Somewhat Agree | Strongly Agree
---|---|---|---|---
a. People in my group help each other with their research. | 1 | 2 | 3 | 4 | 5

We anticipate that basic reports will contain summaries for each question that look like the following:

YP04. How does your institution classify your position?

<table>
<thead>
<tr>
<th></th>
<th>N</th>
<th>% of N</th>
<th>% of responses</th>
</tr>
</thead>
<tbody>
<tr>
<td>Total</td>
<td>275</td>
<td>100.0</td>
<td></td>
</tr>
<tr>
<td>Employee</td>
<td>119</td>
<td>43.2</td>
<td>46.7</td>
</tr>
<tr>
<td>Student</td>
<td>104</td>
<td>37.8</td>
<td>40.8</td>
</tr>
<tr>
<td>Other</td>
<td>22</td>
<td>8.0</td>
<td>8.6</td>
</tr>
<tr>
<td>Don’t know</td>
<td>10</td>
<td>3.6</td>
<td>3.9</td>
</tr>
<tr>
<td>No response</td>
<td>20</td>
<td>7.3</td>
<td>--</td>
</tr>
</tbody>
</table>

The column labeled “N” shows the number of people who were administered each question followed by the total number of people who responded with each possible answer. The “% of N” column shows the fraction of survey participants administered the question who chose the given response. The “% of responses” column shows the fraction of survey participants who responded to the question who chose the given response.

Reports will include total responses, percentage of population and percentage of respondents for each question.
We will display confidence limits for questions that are administered to a randomly selected subset of participants. For example, if the question above were administered to every other participant, we would show 95% confidence bounds for the various figures. For the example above, we would report the number of respondents with employee status as 119 ± 8 (or 43% ± 3%).

For Yes/No questions like YR04 above, we will include the additional summary statistic, “% Yes,” which is the ratio of the number answering Yes to the number who answered either Yes or No, expressed as a percentage.

<table>
<thead>
<tr>
<th></th>
<th>N</th>
<th>% of N</th>
<th>% of responses</th>
</tr>
</thead>
<tbody>
<tr>
<td>Total</td>
<td>119</td>
<td>100.0</td>
<td></td>
</tr>
<tr>
<td>Yes</td>
<td>27</td>
<td>22.6</td>
<td>23.5</td>
</tr>
<tr>
<td>No</td>
<td>54</td>
<td>45.3</td>
<td>47.0</td>
</tr>
<tr>
<td>Don’t Know</td>
<td>34</td>
<td>28.6</td>
<td>29.6</td>
</tr>
<tr>
<td>No response</td>
<td>4</td>
<td>3.4</td>
<td>--</td>
</tr>
</tbody>
</table>

% Yes: 33.3%

As above, we will report this “% Yes” summary statistic with appropriate indicators of sampling errors.

For questions with a Likert scale (e.g., Strongly Agree / Somewhat Agree / Neither Agree nor Disagree / Somewhat Disagree / Strongly Disagree), we will provide two additional summary statistics. First, we will assign each value on the scale a score (e.g. Strongly Agree = 2, Somewhat Agree = 1, Neither Agree Nor Disagree = 0, Somewhat Disagree = -1, Strongly Disagree = -2), and we will use these values to compute an average score for the question. Second, we will compute a “% Agree” statistic by computing the ratio of the number answering Strongly Agree or Agree to the number expressing an opinion.

Reports on “Yes” / “No” questions will include a “%Yes” summary statistic.

Reports on Likert scales will include a numerical value or score for each question.

continues
YR08. To what extent do you agree or disagree with the following statement?

a) People in my group help each other with their research

<table>
<thead>
<tr>
<th></th>
<th>N</th>
<th>% of N</th>
<th>% of responses</th>
</tr>
</thead>
<tbody>
<tr>
<td>Total</td>
<td>119</td>
<td>100.0</td>
<td>100.0</td>
</tr>
<tr>
<td>Strongly Agree</td>
<td>52</td>
<td>43.7</td>
<td>46.8</td>
</tr>
<tr>
<td>Somewhat Agree</td>
<td>29</td>
<td>24.4</td>
<td>26.1</td>
</tr>
<tr>
<td>Neither Agree Nor Disagree</td>
<td>17</td>
<td>14.3</td>
<td>15.3</td>
</tr>
<tr>
<td>Somewhat Disagree</td>
<td>10</td>
<td>8.4</td>
<td>9.0</td>
</tr>
<tr>
<td>Strongly Disagree</td>
<td>3</td>
<td>2.5</td>
<td>2.7</td>
</tr>
<tr>
<td>No response</td>
<td>8</td>
<td>6.7</td>
<td>--</td>
</tr>
</tbody>
</table>

% Agree: 73.0%
Score: 1.05

Again, we will report the % Agree and Score summary statistics with appropriate indicators of sampling errors.

Raw responses to questions with an “Other, specify” option will be not be shown. Rather, we will show total counts or percentages of people responding “Other,” or we will list the top few categories of “Other” responses.

B. Segmented Reports for Institutions
In addition to a basic report summarizing survey responses, we will produce for each institution a set of reports in which responses are segmented by characteristics of the respondent. For example, we will produce a report that compares responses of male participants to those of female participants at a given institution.

These comparative reports will have a format similar to that described above, but with the following modifications:

- Reports will have multiple columns, one for each type of respondent being compared.
- When appropriate, we will provide p-values for cross-column differences to enable one to determine when differences are statistically significant.
- Comparative results will only be shown if the number of responses is sufficient for protecting respondent anonymity.

Demographics will be used to segment some reports according to certain characteristics that might include:
- Gender,
- Number of years as a postdoc,
- Job satisfaction,
- Productivity,
- Citizenship.

continues
If we find large variations, say, by discipline, we may produce an alternative class of reports in which we look at cross-column differences after controlling for discipline (or whatever the source of the variation may be).

A tentative list of comparative reports to be provided at the institutional level is as follows:

- Male postdocs vs. female postdocs
- US citizen postdocs vs. non-citizen postdocs
- Minority US citizen postdocs vs. non-minority US citizen postdocs
- Postdocs with families vs. those without
- Junior postdocs vs. senior postdocs
- Most satisfied postdocs vs. least satisfied postdocs
- Most productive vs. least productive postdocs
- Postdocs who create formal plans vs. those who do not
- Postdocs who receive formal evaluations vs. those who do not
- Comparison across institutional divisions, e.g. Medical School vs. Engineering School vs. School of Arts & Sciences. Institutions will specify a list of relevant divisions as part of their survey registration process.

Similar breakdowns (e.g. results by gender, ethnicity, citizenship, etc) will be available within institutional divisions when the number of responses is sufficient for protecting respondent privacy.