

2008 EDITION

# IEEE-USA UNEMPLOYMENT SURVEY

PRELIMINARY RESULTS:  
DESCRIPTIVE STATISTICS



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## 2008 IEEE-USA UNEMPLOYMENT SURVEY: THE RESULTS

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The IEEE-USA Employment Assistance Committee has continued its interest in developing a better understanding of the problem of unemployment among older engineers by conducting a survey of unemployed engineers. The first survey was conducted in 1995 with replications in 1996, 1998, 2002, 2004, and 2006. In 2008, the Committee replicated these surveys again by mailing virtually the same survey instrument used in 1995, 1996, 1998, 2002, 2004 and 2006 to 3168 U.S. IEEE members who reported being unemployed at some time during the 2008 membership year and who consequently paid dues at a reduced rate. This year, 614 surveys were returned, representing a 19.4 percent response rate. This is the same response rate as that in 2006 and 2004. The 19 percent response rates are slightly below the 26 percent-28 percent response rates garnered in 1995, 1998 and 2002, but they are slightly better than the 14 percent response rate in 1996.

This report of results is organized in four sections. The first section reports the percentage distribution or mean response for each of the questions in the survey. The second section reports the results of selected cross tabulations that focus on age and various aspects of employment status. The third section reports the results of a multivariate analysis that focuses on the impact of age on the duration of unemployment when other factors are held constant. The final section compares some of the current results to those in 1995, 1996, 1998, 2002, 2004 and 2006.

### Survey Responses

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Respondents were asked to describe their current employment status. The modal respondent (36 percent) responded that he/she was involuntarily unemployed. About 31 percent had been re-employed full-time as a technical professional. (This compares to 17 percent who reported full-time re-employment as a technical professional in 2006.) The rest were employed in a non-technical profession (six percent), employed part-time (seven percent), or self-employed (five percent). Some seven percent reported voluntary unemployment, two percent said they were retired voluntarily, and six percent said they were retired involuntarily.

Respondents were next asked their industry of employment. A total of 18 percent of respondents worked in the computer industry (hardware or software), 20 percent were in electrical/engineering services or manufacturing, and 12 percent were employed in the communications industry. Twelve percent of respondents worked in the aerospace or defense industry (five percent and seven percent, respectively). About 8 percent of respondents worked in education. Among the other listed fields (automotive, consulting, medical, petrochemicals, transportation, and utilities), no single field garnered more than 6 percent of respondents. However, some 14 percent could not list their field from the selections they were given. The mean number of engineers in respondents' firms was 1,002, but the distribution is skewed, since the median response is 40 engineers. The size of firms ranged from 0 to 50,000 engineers.

The modal respondent is not dependent on government contracts. The responses indicate that 49 percent of jobs are not dependent on government at all, and 29 percent were very little or somewhat dependent on government funding. Twenty two percent (22 percent) were primarily or totally dependent on government appropriations, compared to 20 percent in 2006.

Forty seven percent of respondents reported that they had been laid off from their last position. Those who were laid off were asked what reason the company gave for the layoff. The most common response was a business downturn (51 percent selected this response, compared to 50 percent in 2006). Fourteen percent reported that their jobs were transferred offshore (compared to 16 percent in 2006), while 13 percent reported that they were laid off because of merger or acquisition. Eight percent reported being laid off because of efficiency improvements, and seven percent because their work was transferred to another domestic location. In slight contrast to 2006, about 10 percent reported their work was transferred to another domestic location, and 11 percent reported that they were laid off because of an efficiency improvement, respectively. Only one percent reported being laid off because of obsolescence. Some 22 percent reported being laid off for reasons not specified in the survey. Forty seven percent (47 percent) reported that the layoffs were across-the-board, while 53 percent reported that they were targeted at specific functions or units. (The comparable numbers in 2006 were 40 percent and 60 percent, respectively.)

All respondents were asked whether they wanted to remain in their primary area of technical competence, and 80 percent did, compared to 71 percent in 2006. Twenty percent wanted to move out of their primary area of technical competency.



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Most respondents (56 percent) do not contemplate more schooling, but 31 percent consider returning to school part-time, and 13 percent consider returning full-time. Twenty-nine percent (29 percent) consider leaving engineering entirely compared to 35 percent in 2006.

The duration of unemployment varies widely among the respondents, from a low of one week to a high of 500 weeks (or about 10 years). (The range was the same in 2006.) The mean is 91 weeks while the median is somewhat less, at 52 weeks, reflecting a skewed distribution in which a few respondents report exceedingly long spells of unemployment (e.g., more than 300 weeks). Some of these respondents may not be actively looking for work. (In 2006, the mean duration of unemployment was 99 weeks, and the median was 62.)

Respondents were asked what services their employer provided when they left. Respondents could check more than one service, and many did. Severance was provided in 30 percent of the cases and extended benefits in only 16 percent of the cases. Outplacement help was provided to 19 percent of respondents and retraining was offered to only four percent of respondents. Sixty three percent report that their employer provided none of the benefits listed in the survey. (The 2006 response to this same question was much lower – about 39 percent.)

The 2008 survey added a new set of questions about benefits and services partially or fully provided by previous and current employers that had not been asked in previous surveys, and about benefits that unemployed respondents had to provide for themselves. With respect to previous employers, 24 percent said that a pension plan was (partially or fully) provided, 42 percent reported coverage of vision-care insurance, 48 percent reported life insurance benefits, 50 percent reported provision of a 401K retirement plan, 56 percent reported dental insurance, and 69 percent reported healthcare insurance benefits. Some 27 percent said that their previous employer offered none of these benefits. Among those who are re-employed, coverage is clearly less. The corresponding percentages are: pension (10 percent); vision-care (25 percent); life insurance (24 percent); 401K plan (27 percent); dental insurance (29 percent); healthcare insurance (35 percent). Some 29 percent of the respondents report that current employers offer none of these benefits.

For respondents who were unemployed between jobs or are currently unemployed, 30 percent report funding their own life insurance, 12 percent fund their own 401K plan, four percent fund a pension plan, 55 percent fund healthcare insurance, 30 percent pay for their own dental insurance, 19 percent pay for vision-care insurance, and 32 percent do (or did) not pay for any of these services while unemployed.

Respondents were asked to describe their employment search and the results. Nearly half (48 percent) agreed that it was very difficult to find a new job, compared to 57 percent in 2006; only nine percent said that it was fairly easy to find a new job. About seven percent reported that an offer fell into their lap, about 13 percent reported that they found a great job, about seven percent said that they obtained an adequate job, and about four percent anticipated a raise. More than one of 10 (12 percent) anticipates a pay cut. Thirty-seven percent reported they have not yet found a job, compared to 43 percent in 2006.

More than four in 10 (43 percent) would recommend engineering to their son or daughter, compared to 37 percent in 2006; 27 percent would not, compared to 35 percent in 2006; and 30 percent are not sure, compared to 28 percent in 2006.

Slightly fewer than 40 percent (39 percent) report that they are aware of IEEE-USA's employment assistance services. In 2006, slightly fewer than half (48 percent) reported awareness of IEEE-USA's employment assistance services.


Respondents were asked to rank on a nine-point scale the job search techniques that worked best for them. Comparing the job-search techniques in terms of whether the response was ranked in the top three, 37 percent of respondents rated networking as especially helpful; 23 percent found Internet job listings beneficial; 11 percent found headhunters in the top three, 16 percent found that sending out resumes was useful, and two percent rated private consultants in the top three. Some 12 percent said that answering ads was helpful; eight percent rated going to job fairs, and 4 percent rated outplacement services in the top three.

Respondents were asked what they saw as major personal barriers to their employment or re-employment. Age was the most common response: 59 percent of respondents listed this as a barrier, compared to 72 percent in 2006. Some 46 percent selected national economic conditions, compared to 28 percent of respondents who listed this as a barrier in 2006. Area of technical competence was selected by 32 percent and geographic preferences was listed by 34 percent of respondents; and 13 percent cited a decrease in government spending as a personal barrier. Ethnicity was noted by 13 percent of respondents. Education was cited by 16 percent of the respondents, sex was listed by seven percent of the respondents, and disability was listed by seven percent of respondents. Sixteen percent cited other reasons not listed in the survey.

Respondents were asked their view of the long-term demand for engineers. Some 18 percent see the future as excellent, compared to 13 percent in 2006. About 11 percent saw it as poor compared to 18 percent in 2006. Between these categories, 43 percent saw the outlook as good and about a third (29 percent) saw the outlook as fair.

As a follow-up to this question, respondents were asked the following open-ended question: What should IEEE be doing to help (if anything)? About 26 percent (160) provided a response, less than the 2006 response rate of 37 percent. A few provided more than one response, but only the first response was coded. With a few exceptions, noted below, the responses were coded into the same general categories that were used in the previous (1995, 1998, 2002, 2004, and 2006) surveys. The largest percentages of comments fell into one of three categories. One group (32 percent) urged IEEE to provide networking help, augment its job banks, provide more specialized information about jobs, and even connect with Congress. The next largest group (19 percent) urged IEEE to do something to protect the supply of domestic engineers. Of these, most wanted IEEE to take steps to get Congress to reduce H1B visas and stop outsourcing of U.S. jobs; some wanted IEEE to unionize members and to restrict entry by licensing or certifying engineers. (This compares to 31 percent of respondents in 2006 and 37 percent of respondents in 2004.) Seventeen percent of the respondents felt there was little that IEEE could do or they had no idea what IEEE could do about the future of engineering, compared to seven percent in 2006. About 11 percent of respondents urged IEEE to provide more technical training or technical information to members, or education and retraining, compared to six percent in 2006. A few (three percent) urged IEEE to improve the image of IEEE itself, of the profession, or to do other things to increase the demand for engineers. Just as in 2006, a small group (seven percent) urged IEEE to provide health and other insurance services, but only one person urged IEEE to reduce or eliminate fees and dues, especially for unemployed members. Four percent urged IEEE to fight age discrimination, compared to 4 percent in 2006. Three percent complimented IEEE or urged IEEE to keep up the good work, compared to five percent in 2006.

Respondents were asked a series of questions about their personal characteristics and circumstances. Specifically, they were asked about their age, their years of professional and managerial experience, their education and their salary.



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The mean respondent is 47 years old, and the median respondent is 50; the youngest is 22 and the oldest is 85. The mean of years of experience among the respondents is 19, and the median is 22. The range is from 0 years of experience to 45 years.

The modal respondent has a BS in electrical engineering or other BS (73 percent). About 46 percent have an MS, MSEE or other Masters' degree and 16 percent have a PhD.

Respondents were asked their base salary. The mean annual base salary prior to the respondent's current period of unemployment was \$65,921; the median was 58,000, and the reported range was from 0 to \$500,000. The mean annual base salary for respondents who have been re-employed is slightly higher in nominal dollars, at \$67,632; the median is 65,000, and the reported range is from 0 to \$215,000. However, only 169 (28 percent) of the respondents chose to answer this item, which is too few for additional analysis.

Examining the pre-unemployment and re-employment salary of those who responded to both questions sheds light on the relation between pre- and post-unemployment salaries at the individual level. Most (159) of the 169 respondents who answered either question also answered both. Their responses do not differ very much from those reported above. Specifically, the mean annual base salary prior to the respondent's period of unemployment was \$64,684; the median was \$55,000, and the range is unchanged from that reported above. For the same group of 159 respondents who have been re-employed, the mean annual base salary in nominal dollars is \$67,796, and the median remains at \$65,000; the range also remains the same as that reported in the preceding paragraph.

Of the 614 respondents, 193 (31 percent) indicated that they would like IEEE to send them its packet of information for unemployed members.

## **Age and the Survey Responses**

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A key concern of the previous surveys of unemployed engineers in 1995, 1998, 2002, 2004 and 2006 is the link between age and employment opportunities. It appeared in previous years that older engineers have significantly fewer re-employment opportunities than younger engineers. Similar patterns continue to appear in 2008. The cross-tabulation results are below.

Consider the relation between age and employment status. The mean age of respondents who were re-employed full-time as a technical professional at the time they responded to the survey was among the youngest of the respondents (age = 35). The next youngest group (age 41) was employed as other than a technical professional. The largest subgroup was involuntarily unemployed (N=191); the mean age of this group is 52. A small group of respondents is self-employed (about 5 percent); their mean age is 50. A few respondents are voluntarily unemployed, or are employed part time; their mean age is 46. The mean age of voluntary retirees is 60, as is the mean age of involuntary retirees. These differences are significant overall at less than the .0001 level.

There is also a significant relation between employment status and weeks of unemployment. The average number of weeks unemployed was 23 weeks for those re-employed full-time as an engineer. (The comparable number in 2006 was 54 weeks, and it was 51 weeks in 2004.). Compared to the other groups, this was the shortest duration of unemployment. Those employed part time report an average of 64 weeks of

unemployment (60 weeks in 2006); and the self-employed have a mean of 104 weeks of unemployment (69 in 2006). Those re-employed in non-engineering jobs report a mean of 83 weeks of unemployment (73 in 2006). Among the unemployed, those who are voluntarily unemployed have an average of 163 weeks unemployment (146 in 2006), while the involuntarily unemployed have an average of 115 weeks of unemployment (same as in 2006). Involuntary retirees report an average of 202 weeks of unemployment (96 in 2006), while voluntary retirees report an average of 118 weeks (136 weeks in 2006). These differences are significant overall at less than the .0001 level.


Unlike 2006 (but like 2004), there is a significant age difference among industries in which respondents were (or are) employed. The oldest engineers worked in the automotive and communications industry (mean of 52 and 51 years, respectively), and the youngest worked in defense (other than aerospace) and education, where the mean is 42 years in both sectors), and in transportation and petrochemicals (mean of 43 years in both industries). The overall age difference among industry groups is significant at the .005 level.

Similar to 2006, the duration of unemployment does not vary by industry. Among the industry groups with more than 15 respondents, the longest duration of unemployment is among those who were employed in consulting, where the mean was 129 weeks of unemployment. The next longest duration was in communications (mean of 112 weeks) and utilities (mean of 99 weeks) followed by the electrical/electronic manufacturing industry (mean of 91 weeks), by those who report employment in computers (mean of 87 weeks), electrical/electronic services (mean of 83 weeks), defense (mean of 75 weeks), aerospace (mean of 56 weeks), and education (mean of 51 weeks). There are too few respondents in other industry groups for the reported means to be statistically reliable. The shortest duration of unemployment is in the automotive industry (43 weeks), but this is based on only seven respondents. These between-industry differences are not statistically significant.

Unlike the results in 2004 and 2006, older engineers in 2008 are clearly more likely to report that their job search is very difficult than younger engineers. Specifically, when asked whether the search was very difficult, the mean age of those who chose that response (50) is significantly different than those who did not (mean of 44) at less than the .0001 level. When asked if the search was easy, the mean age of those who said "yes" was 32, while the mean age of those who did not choose this response was 48. Although few respondents report an easy search (9.4 percent), the difference in mean ages is significant at less than the .0001 level.

There is a relation between the reported ease of the job search and duration of unemployment. For example, the mean weeks of unemployment for those who report a very difficult job search is 106; while the mean for those who did not select this response option is 83 weeks. This difference is statistically significant at the conventional .05 level. Looking from the other perspective, among the few respondents who reported that it was easy to find a new job, the duration of unemployment was just 14 weeks, compared to 102 weeks for those who did not choose this response. This difference is significant at less than the .001 level. The result is consistent with the common sense view that people who were only unemployed for a short period of time found it easier to find a new job.

Respondents were asked to check whether or not they perceived various factors as barriers to their re-employment. We have already seen that age was the most frequently selected among the nine possible barriers listed. More importantly, older engineers were significantly more likely to cite age as a barrier than younger engineers. Those who cited age as a barrier averaged 53 years, compared to a mean of 38 years for those who did not regard age as a barrier ( $p < 0.0001$ ). In addition, unlike 2006, those who report age as a barrier do face longer spells of unemployment (120 weeks) than those who do not (56 weeks). This difference is significant at less than the .001 level.



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Younger respondents are more likely to be optimistic about the long-term outlook for engineers than older ones. Those who see an excellent outlook average 40 years. Those who see the outlook as good average 46 years; and those who see the outlook as fair or poor average 50 and 51 years, respectively. The differences are significant at less than the .001 level.

Age is sometimes associated with the benefits and services that were provided by the respondent's previous employer and that are provided to re-employed respondents. Age is also sometimes associated with the benefits and services that are available to respondents who remain currently unemployed. Consider first the benefits and services provided by the respondent's previous employer. Older respondents (mean age = 51) are more likely than younger respondents (mean age = 43) to report that their previous employer provided full or partial support for life insurance. The same pattern is true for full or partial provision for a 401K plan (mean ages of 49 for employers who provide the benefit versus 44 for non-providers): for a pension plan (mean ages of 51 for employers who provide the benefit versus 45 for non-providers); for healthcare insurance (mean ages of 50 for employers who provide the benefit versus 43 for non-providers); for dental insurance (mean ages of 50 for employers who provide the benefit versus 43 for non-providers); and for vision-care insurance (mean ages of 50 for employers who provide the benefit versus 45 for non-providers). All of these differences are significant at less than the standard .05 level; in fact, p-values are less than .001.

Consider next the benefits and services provided to those respondents who report that they have been re-employed.<sup>1</sup> Younger respondents (mean age = 37) are more likely than older respondents (mean age = 50) to report that their current employer provides full or partial support for life insurance. The same pattern is true for full or partial provision for a 401K plan (mean ages of 37 for employers who provide the benefit versus 50 for non-provider); for a pension plan (mean ages of 37 for employers who provide the benefit versus 48 for non-providers); for healthcare insurance (mean ages of 38 for employers who provide the benefit versus 51 for non-providers); for dental insurance (mean ages of 38 for employers who provide the benefit versus 50 for non-providers); and for vision-care insurance (mean ages of 38 for employers who provide the benefit versus 50 for non-providers). Like the results for previous employers, all of these differences are significant at less than the standard .05 level; in fact, the p-values are less than .001. However, the age differences are exactly opposite: Benefits are more likely to be provided to re-employed younger engineers than to older engineers. (Note that one cannot conclude from this association that age causes the difference.)

Finally, consider the results for those who remain unemployed.<sup>2</sup> Older respondents (mean age = 52) are more likely than younger respondents (mean age = 44) to report that they fund their own life insurance ( $p < .001$ ). Among this group of respondents, there is no significant difference in the ages of those who report funding their own 401K or pension plan. Older respondents are more likely to report funding their own healthcare insurance (mean = 49 for those who report paying for their own health insurance, versus mean = 44 for those who do not so report;  $p < .001$ ). The same pattern is true for dental insurance (mean = 51 for those who report paying for their own dental insurance, versus mean = 45 for those who do not so report;  $p < .001$ ), and for vision care insurance (mean = 51 for those who report paying for their own vision-care insurance, versus mean = 46 for

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<sup>1</sup> Respondents to this question include not only those who report themselves as re-employed full time as a technical professional, but also those who report themselves as unemployed, self-employed, retired, or employed part time. Age differences among those who responded to this question and report themselves as re-employed full time as a technical professional are not significant.

<sup>2</sup> Respondents to this question include those who report themselves as unemployed, but also those who report themselves as re-employed full time, unemployed, self-employed, retired, or employed part time. It is likely that all respondents to the survey were at one time unemployed, and all those surveyed should respond to the question.

those who do not so report;  $p < .002$ ). Those who report funding none of these benefits for themselves are younger (mean age = 42) than those who report otherwise (mean age = 49); the p-value is  $< .001$ .

The services and benefits that are provided to unemployed engineers could also vary by industry. With respect to the previous employer, the aerospace, communications, defense, and electrical/electronic manufacturing industries are most likely to have provided life insurance (reported by more than 50 percent of respondents who were employed in these industries). The between-industry difference is significant at the  $p < .02$  level. With respect to a 401K, those employed in communications, defense, and electrical/electronic manufacturing are mostly likely to report provision (more than 50 percent of respondents in these industries report provision); the between-industry difference is significant at the  $p < .01$  level. However, the between-industry differences in the provision of pensions and healthcare insurance are not significant. The provision of dental insurance significantly varies among industry of the respondent's previous employer ( $p < .001$ ). More than 65 percent of respondents who had been employed in aerospace, communications, and electrical/electronic manufacturing report provision by the employer. The same is true for the provision of vision-care insurance: The-between industry differences are significant ( $p < .03$ ). At least 50 percent of respondents who had been employed in aerospace, automotive, communications, and electrical/electronic manufacturing report provision by the employer. The between-industry differences among those who report that their previous employer provided none of the benefits listed are not significant.

For those who have been re-employed, the between-industry differences in the provision of life insurance are not significant<sup>3</sup>; however, the between-industry differences in the provision of 401K plans and pensions are significant ( $p < .01$ ). More than 40 percent of those re-employed in the aerospace, automotive, and defense industries report that their employer provides benefits for a 401K plan, and more than 40 percent of those re-employed in the automotive industry report that their employer provides pension plan benefits. With respect to healthcare and dental insurance, the between-industry differences are not significant at conventional levels. More than 40 percent of those re-employed in aerospace and defense, and nearly 40 percent of those re-employed in electrical/electronic services report provision of vision-care insurance by their new employer ( $p < .02$ ). The between-industry differences among those who report that their new employer provides none of the benefits listed are not significant.

Age remains associated with an observable outcome, weeks of unemployment. As in the previous surveys, older respondents report significantly more weeks of unemployment than younger respondents. Specifically, for each additional year of age, unemployment goes up by 3.4 weeks ( $p < 0.001$ ). (In 2006, the corresponding statistic was 1.9 weeks.)

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<sup>3</sup> Respondents to this question include not only those who report themselves as re-employed full time as a technical professional, but also those who report themselves as unemployed, self-employed, retired, or employed part time.



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## Multivariate Analysis of Age and the Survey Responses

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Results indicate that, when other factors (experience, education, industry, method of job search, labor market status, etc.) are held constant in a multiple regression of duration of unemployment on age, the relation between age and unemployment is even stronger than in the bivariate analysis. (This was also the case in 2004 and 2006). Specifically, controlling for the variables in the regression, for each additional year of age, unemployment goes up by 3.5 weeks ( $p < .001$ ). The 95 percent confidence level means that the range of the estimate is from 1.8 to 5.3 weeks.

Like the results in 2004 and 2006, years of professional experience do not have an independent, countervailing effect on the duration of unemployment. Specifically, when other factors in the model (including age) are held constant, each additional year of experience has no significant effect on the duration of unemployment, but the sign is in the expected negative direction. Similarly, education, measured as an ordinal variable equaling one for those whose highest degree is a Bachelor's, two for those whose highest degree is a Master's, and three for those whose highest degree is a Ph.D., has no significant effect, but the sign is also in the expected negative direction. When other variables are held constant, retirees (no matter whether their retirement was voluntary or involuntary) report 62 more weeks of unemployment than those who are actively on the job market. The estimate is significant ( $p < .001$ ).

Compared to the base category, the computer industry, respondents employed in the automotive industry report 67 fewer weeks of employment ( $p < 0.001$ ). Respondents employed in education report 30 fewer weeks of unemployment, relative to the base category ( $p < .05$ ). None of the other industry categories were significant.

With one exception, respondents who report that they used a particular job search technique (regardless of their subjective rating of the effectiveness of the technique) reveal no significant impact on the actual duration of unemployment. Placing ads is the exception. Respondents who report answering ads when they search for a job report 24 more weeks of unemployment than those who do not use this job-search technique ( $p < .04$ ). Respondents were also asked whether their employer offered outplacement services, retraining opportunities, severance pay, extended benefits. According to the multivariate results, with one exception, these efforts by employers had no significant effect (positive or negative) on the actual duration of unemployment. Severance is the interesting exception; respondents who worked for employers that offered severance pay report 34 more weeks of unemployment than those whose employers did not offer severance ( $p < 0.08$ ). While this is marginally significant, it suggests that severance may give respondents more time to search.

Overall, the 2008 results mirror consistent results from each of the previous surveys: Controlling for other variables in the regression, including experience and education, age statistically and substantively increases the duration of unemployment. It remains uncertain whether this reflects age, or variables that are omitted from the survey but may be correlated with age, such as maintaining technical competence or other productivity-related factors in rapidly changing fields.


### **Selected Comparisons of the 2008 Responses to 1995, 1996, 1998, 2002, 2004 and 2006 Survey Responses: 1995-2008**

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There are some striking differences between, and some striking similarities among, the 1995, 1996, 1998, 2002, 2004, 2006 and 2008 survey responses. Further, there is evidence that the situation for unemployed engineers has gotten both better and worse. (Testing the differences for statistical significance is beyond the scope of this basically descriptive exercise.) For example, with respect to the employment status of respondents to the six previous surveys: in 1995, 20 percent reported being re-employed full-time as an engineer; in 1996, 19 percent so reported; in 1998, 17 percent so reported; in 2002, 24 percent reported being re-employed full-time as an engineer, and the same statistic in 2004 was 26 percent. The corresponding statistic in 2006 was 19 percent, and it was 31 percent in 2008. The respondents who reported being employed part-time or self-employed were 15 percent in 1995, 13 percent in 1996, 16 percent in 1998, nine percent in 2002, 17 percent in 2004, 12 percent in 2006, and 12 percent also in 2008. In 1995, 48 percent were involuntarily unemployed; in 1996, 49 percent were involuntarily unemployed; in 1998, 46 percent were; in 2002, 54 percent were; in 2004, 42 percent were; in 2006, 47 percent were. In the most recent 2008 survey, 36 percent were involuntarily unemployed.

A clear trend, however, emerges in the industry of former employment, as well as in characteristics related to the industry of employment. In 1995, 20 percent reported employment in defense, and 16 percent reported employment in aerospace; these industries were (and are) relatively dependent on government funds. In 1996, 11 percent were employed in defense, and 15 percent in aerospace. In 1998, with further cutbacks in aerospace, 11 percent report former employment in defense, but only eight percent in aerospace. In 2002 and 2004, this downward trend seemed to level at five percent in defense, and four percent in aerospace. In 2006, seven percent report employment in aerospace, and six percent in defense. The proportions were similar in 2008, when five percent and seven percent respectively were employed in aerospace and defense. In 2004, more than half of the respondents (55 percent) were engaged in communication, computer, and electrical/electronic manufacturing industry. In 2006, the corresponding statistic is 49 percent, and in 2008, the same statistic is 44 percent. These three industries remain the largest employers of the respondents to this survey. Further, in 1995, 33 percent reported that their former jobs did not depend at all on government funding; in 1996, 42 percent so reported; in 1998, 40 percent reported no dependence on government funding, in 2002 the corresponding percent was 55 percent; and in 2004, this percentage increased further to 59 percent. In 2006, the corresponding statistic dropped to 52 percent and it dropped again to 49 percent in 2008. In a similar vein, in 1995, 30 percent reported jobs that were totally dependent on government funding; in 1996, 23 percent so reported; in 1998, 24 percent so reported; in 2002, only 10 percent reported these as former jobs; and the corresponding percent in 2004 was 9 percent. In 2006, 13 percent report that their most recent job was totally dependent on government funds, and in 2008 the 11 percent report total dependence on government funds.

The reasons for the respondents' layoff roughly reflect the larger economy. In 1995, 58 percent cited business downturn as the reason for their layoff; and the corresponding percentages in 1996, 1998, 2002, and 2004 were 46 percent, 31 percent, 76 percent and 62 percent respectively. In 2006, the corresponding statistic continues to drop to 50 percent and it remains comparable in 2008 at 51 percent. Compared to responses in 2004, there is little change in the percent that cite the transfer of their work as the reason for being laid off. In 2004, seven percent cited transfer of work to another domestic location as the reason for being laid off; in 2006, the corresponding percentage is 10 percent; it was seven percent in 2008. In 2004, 15 percent cited transfer of work to an offshore location as the reason for layoff; in 2006, the corresponding statistic remains at 16 percent;



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it was 14 percent in 2008. (Responses to surveys before 2004 did not distinguish between domestic and off-shore transfers of work.)

Another trend is that employers are providing much less service for laid-off workers than they did before. Severance was provided to only 31 percent of the respondents in 2008, compared to 51 percent in 2006, 54 percent in 2004 and 90 percent in 2002. Extended benefits were provided to only 16 percent in 2008, compared to 30 percent of the cases in 2006, 27 percent in 2004 and 48 percent in 2002. Outplacement help was provided to 19 percent of respondents in 2008, compared to 28 percent of respondents in 2006, 38 percent in 2004 and 56 percent in 2002. Retraining was offered to only 4 percent of respondents in 2008, similar to the six percent of respondents in 2006 and four and five percent in 2002 and 2004, respectively.

The mean duration of unemployment is 91 weeks in 2008, compared to 99 weeks in 2006. In 2004, the mean was 82 weeks, which is considerably larger than that reported in the 2002 survey (49 weeks). Like the mean duration in 2006, the 2008 mean is comparable to levels reported in three other previous surveys: the mean duration was 103 weeks in 1998, 84 weeks in 1995 and 92 weeks in 1996. The median duration of unemployment in 2008 was 52 weeks, compared to the relatively long median duration of unemployment in 2006, at 62 weeks. The 2004 median unemployment spell was 68 weeks, compared to a 2002 median of 38 weeks, 65 weeks in 1998, 57 weeks in 1995, and a median reported as “between 52-78” in 1996. Interestingly, the percentage who reported that it is “very difficult” to find a new job is slightly less than in 2006, which itself was less than in 2004. In 2008, the percentage is 48 percent. In 2006, the corresponding percentage was 57 percent; the same percentage in 2004 and 2002 was 66 percent, which was less than in 1998 (71 percent), 1996 (76 percent) or 1995 (85 percent). Respondents in 2008 view the long term demand for engineers about the same as they did in 2006 and 2004. In 2008, 43 percent see the outlook at “good,” similar to 37 percent in 2006 who saw the outlook as “good”, and 33 percent who viewed the outlook as “good” in 2004. These compare to 45 percent in 2002, 47 percent in 1998, 25 percent in 1996, and 23 percent in 1995. About 11 percent see the outlook as “poor” in 2008, compared to 2006, when 18 percent saw the outlook as “poor” and 24 percent who saw the outlook as poor in 2004. The corresponding percentages were 13 percent in 2002, 21 percent in 1998, 35 percent in 1995, and 37 percent in 1996.

In 2002, 30 percent reported that they would not recommend engineering to their son and daughter. In 2004, this increased to 41 percent. In 2006 it decreased to 37 percent, but it bounced up to 43 percent in 2008.

Results from 2008 indicate that, when numerous other factors are held constant, each additional year of age adds about 3.5 weeks to the duration of unemployment. The comparable statistic in 2006 was 2.8 weeks of additional unemployment for each year of age. In 2004, the comparable statistic showed that each additional year of age added about 2.3 weeks to unemployment. In 2002 and 1998, each additional year resulted in three additional weeks of unemployment, compared to seven weeks in 1996 and five weeks in 1995.

Overall, in every year of the survey, controlling for other variables, age appears to have a persistent association with a significant and non-trivial increase in the duration of unemployment, but it cannot be determined from these surveys whether that is attributable to productivity differences, price/wage differences, the domestic supply of engineers, age discrimination, or some other factor.

## 2008 IEEE-USA UNEMPLOYMENT SURVEY: THE RESULTS

### Descriptives

Descriptive Statistics					
	N	Minimum	Maximum	Mean	Std. Deviation
No. Engineers [Question: Estimate the number of engineers at your most recent lo	509	0	50000	1002.13	4419.784
Weeks [Question: How many weeks have you been (or were you) unemployed?]	479	1	500	91.09	112.516
Age [Question: What is your age?]	443	22.00	85.00	46.6485	13.26191
Years [Question: How many years of professional and managerial experience do you	436	.00	45.00	18.9828	13.22442
Taking into consideration the total compensation, benefits, quality of life issu	192	0	5	2.47	1.357
\$ [Question: What was your annualized base salary immediately prior to your peri	169	0	500000	65921.47	56693.002
\$ [Question: If you have become re-employed, what is your current base salary, o	163	0	215000	67631.83	37666.649
Valid N (listwise)	154				

### Frequencies

#### Frequency Table

Check the response that best describes your current employment situation:					
		Frequency	Percent	Valid Percent	Cumulative Percent
Valid	Re-employed full time as a technical professional	167	27.2	31.2	31.2
	Employed as other than a technical professional	31	5.0	5.8	37.0
	Employed part time	38	6.2	7.1	44.1
	Self-employed	27	4.4	5.0	49.2
	Unemployed, voluntarily	39	6.4	7.3	56.4
	Unemployed, involuntarily	191	31.1	35.7	92.1
	Retired, voluntarily	11	1.8	2.1	94.2
	Retired, involuntarily	31	5.0	5.8	100.0
	Total	535	87.1	100.0	
Missing	System	79	12.9		
Total		614	100.0		

In what industry are/were you employed?					
		Frequency	Percent	Valid Percent	Cumulative Percent
Valid	Aerospace	23	3.7	4.5	4.5
	Automotive	7	1.1	1.4	5.9
	Communications	63	10.3	12.4	18.2
	Computers	90	14.7	17.6	35.9
	Consulting	27	4.4	5.3	41.2
	Defense (other than aerospace)	36	5.9	7.1	48.2
	Education	39	6.4	7.6	55.9
	Electrical/electronic services	33	5.4	6.5	62.4
	Electrical/electronic manufacturing	71	11.6	13.9	76.3
	Medical	15	2.4	2.9	79.2
	Petrochemicals	3	.5	.6	79.8
	Transportation	6	1.0	1.2	81.0
	Utilities	24	3.9	4.7	85.7
Other	73	11.9	14.3	100.0	
	Total	510	83.1	100.0	
Missing	System	104	16.9		
Total		614	100.0		

Other Specify [Question: In what industry are/were you employed?]					
		Frequency	Percent	Valid Percent	Cumulative Percent
Valid		545	88.8	88.8	88.8
	121	1	.2	.2	88.9
	Agriculture	1	.2	.2	89.1



Alternative Energy	1	.2	.2	89.3
Biotech	1	.2	.2	89.4
chemical	1	.2	.2	89.6
chip design	1	.2	.2	89.7
Clerical-Unable to get an engineering job	1	.2	.2	89.9
computer manufacturing	1	.2	.2	90.1
construction	1	.2	.2	90.2
Consumer Product Design	1	.2	.2	90.4
consumer product manufacturing	1	.2	.2	90.6
consumer Products teting	1	.2	.2	90.7
consumer products, paper manufacturing	1	.2	.2	90.9
Digital Mapping/Remote Sensing/Software	1	.2	.2	91.0
Digital Signage	1	.2	.2	91.2
doenatllab	1	.2	.2	91.4
education	1	.2	.2	91.5
Energy/oil	1	.2	.2	91.7
Engineering	1	.2	.2	91.9
Facilities Engineering Management, Umass at Amherst, MA	1	.2	.2	92.0
Federal government	1	.2	.2	92.2
Finance	1	.2	.2	92.3
Financial	1	.2	.2	92.5
financial services	1	.2	.2	92.7
Financial Services	1	.2	.2	92.8
Glass/Ceramic Manufacturing	1	.2	.2	93.0
government	1	.2	.2	93.2
govt.	1	.2	.2	93.3
have never been employed. recent grad.	1	.2	.2	93.5
High Energy Systems	1	.2	.2	93.6
Information Technologies	1	.2	.2	93.8
Integrator	1	.2	.2	94.0
Intellectual Property	1	.2	.2	94.1
Intellectual property law	1	.2	.2	94.3
Intelligence (military) systems	1	.2	.2	94.5
IT	1	.2	.2	94.6
Law	1	.2	.2	94.8
legal	1	.2	.2	95.0
Legal	1	.2	.2	95.1
Library	1	.2	.2	95.3
Manufacturing	2	.3	.3	95.6
Media Production	1	.2	.2	95.8
medical imaging research	1	.2	.2	95.9
Military	1	.2	.2	96.1
petroleum	1	.2	.2	96.3
Power	1	.2	.2	96.4
power industry	1	.2	.2	96.6
Printing	1	.2	.2	96.7
Process control	1	.2	.2	96.9
Remote Sensing	1	.2	.2	97.1
Research	2	.3	.3	97.4
Retail	2	.3	.3	97.7
Securities/banking	1	.2	.2	97.9
semiconductor	3	.5	.5	98.4
Semiconductor	2	.3	.3	98.7
semiconductors	1	.2	.2	98.9
Shipping	1	.2	.2	99.0
Software development	1	.2	.2	99.2
Solar	1	.2	.2	99.3
Support Technician	1	.2	.2	99.5
telecommunications	1	.2	.2	99.7
textiles-carpet industry	1	.2	.2	99.8
University research	1	.2	.2	100.0
Total	614	100.0	100.0	

## 2008 IEEE-USA UNEMPLOYMENT SURVEY: THE RESULTS

To what extent was your most recent position dependent on government grants, con					
		Frequency	Percent	Valid Percent	Cumulative Percent
Valid	Totally	57	9.3	11.2	11.2
	Primarily	55	9.0	10.8	22.0
	Somewhat	65	10.6	12.7	34.7
	Very little	84	13.7	16.5	51.2
	None	249	40.6	48.8	100.0
	Total	510	83.1	100.0	
Missing	System	104	16.9		
Total		614	100.0		

Were you laid off from your last position?					
		Frequency	Percent	Valid Percent	Cumulative Percent
Valid	Yes	240	39.1	47.1	47.1
	No	270	44.0	52.9	100.0
	Total	510	83.1	100.0	
Missing	System	104	16.9		
Total		614	100.0		

Business downturn (actual or anticipated) [Question: If you were laid off, what					
		Frequency	Percent	Valid Percent	Cumulative Percent
Valid	Not Selected	117	19.1	49.0	49.0
	Selected	122	19.9	51.0	100.0
	Total	239	38.9	100.0	
Missing	System	375	61.1		
Total		614	100.0		

Merger or acquisition [Question: If you were laid off, what reason(s) did the co					
		Frequency	Percent	Valid Percent	Cumulative Percent
Valid	Not Selected	208	33.9	87.0	87.0
	Selected	31	5.0	13.0	100.0
	Total	239	38.9	100.0	
Missing	System	375	61.1		
Total		614	100.0		

Efficiency or productivity improvements [Question: If you were laid off, what re					
		Frequency	Percent	Valid Percent	Cumulative Percent
Valid	Not Selected	219	35.7	91.6	91.6
	Selected	20	3.3	8.4	100.0
	Total	239	38.9	100.0	
Missing	System	375	61.1		
Total		614	100.0		

Transfer of work (another domestic location) [Question: If you were laid off, wh					
		Frequency	Percent	Valid Percent	Cumulative Percent
Valid	Not Selected	222	36.2	92.9	92.9
	Selected	17	2.8	7.1	100.0
	Total	239	38.9	100.0	
Missing	System	375	61.1		
Total		614	100.0		

Transfer of work (offshore location) [Question: If you were laid off, what reaso					
		Frequency	Percent	Valid Percent	Cumulative Percent
Valid	Not Selected	206	33.6	86.2	86.2
	Selected	33	5.4	13.8	100.0
	Total	239	38.9	100.0	
Missing	System	375	61.1		
Total		614	100.0		



Plant or office obsolescence [Question: If you were laid off, what reason(s) did					
		Frequency	Percent	Valid Percent	Cumulative Percent
Valid	Not Selected	236	38.4	98.7	98.7
	Selected	3	.5	1.3	100.0
	Total	239	38.9	100.0	
Missing	System	375	61.1		
Total		614	100.0		

Other [Question: If you were laid off, what reason(s) did the company give? (Sel					
		Frequency	Percent	Valid Percent	Cumulative Percent
Valid	Not Selected	186	30.3	77.8	77.8
	Selected	53	8.6	22.2	100.0
	Total	239	38.9	100.0	
Missing	System	375	61.1		
Total		614	100.0		

Other Specify [Question: If you were laid off, what reason(s) did the company gi					
		Frequency	Percent	Valid Percent	Cumulative Percent
Valid		564	91.9	91.9	91.9
	" too old"	1	.2	.2	92.0
	"Career Changer" voluntary layoff 50 or older	1	.2	.2	92.2
	accidental - error in contract renewal (tried to fix...)	1	.2	.2	92.3
	budget cuts	1	.2	.2	92.5
	budget issues	1	.2	.2	92.7
	Business sold for its contracts, not its people	1	.2	.2	92.8
	closed a business	1	.2	.2	93.0
	closing	1	.2	.2	93.2
	company closed	1	.2	.2	93.3
	company went out of business	1	.2	.2	93.5
	Completed Project-No new projects in my specialty	1	.2	.2	93.6
	Construction Job--Lack of work--Power Plant Construction	1	.2	.2	93.8
	Contract expired	1	.2	.2	94.0
	Cost cutting	1	.2	.2	94.1
	did not obtain "goals"	1	.2	.2	94.3
	didn't give explanation, but the company was struggling and close its doors 6 mo	1	.2	.2	94.5
	downsizing	1	.2	.2	94.6
	elimination of work assignment	1	.2	.2	94.8
	End of contract	2	.3	.3	95.1
	End of Project	1	.2	.2	95.3
	Govt cancelled contract	1	.2	.2	95.4
	Italian owner sold primary product line thereby closing our doors.	1	.2	.2	95.6
	Lack of Fund	1	.2	.2	95.8
	Local Office was closed. Company in Chapter 13	1	.2	.2	95.9
	loss of funding	1	.2	.2	96.1
	Loss of Grant	1	.2	.2	96.3
	Maxim Integrated Products abandoned cellular business	1	.2	.2	96.4
	My head injury	1	.2	.2	96.6
	my poor performance	1	.2	.2	96.7
	No need for my Services	1	.2	.2	96.9
	No reason given	1	.2	.2	97.1
	none	2	.3	.3	97.4
	office politics	1	.2	.2	97.6
	Other delays freed up resources eliminating need for contractors	1	.2	.2	97.7
	Personal Injury	1	.2	.2	97.9
	Position not needed	1	.2	.2	98.0
	product shutdown	1	.2	.2	98.2
	Project Terminated	1	.2	.2	98.4
	R&D Cost Cutting	1	.2	.2	98.5
re-organization	1	.2	.2	98.7	
RIF	1	.2	.2	98.9	
Services no longer needed	1	.2	.2	99.0	
Services no longer required	1	.2	.2	99.2	
Shift in business needs and plans.	1	.2	.2	99.3	

## 2008 IEEE-USA UNEMPLOYMENT SURVEY: THE RESULTS

	Staff reduction	1	.2	.2	99.5
	Start-up as blood sport	1	.2	.2	99.7
	Startup failure	1	.2	.2	99.8
	They are going broke.	1	.2	.2	100.0
	Total	614	100.0	100.0	

Were the layoffs					
		Frequency	Percent	Valid Percent	Cumulative Percent
Valid	Across the board?	113	18.4	47.3	47.3
	Targeted at specific functions or units?	126	20.5	52.7	100.0
	Total	239	38.9	100.0	
Missing	System	375	61.1		
Total		614	100.0		

Do you want to stay in or move out of your primary area of technical competence?					
		Frequency	Percent	Valid Percent	Cumulative Percent
Valid	Stay in	385	62.7	80.0	80.0
	Move out of	96	15.6	20.0	100.0
	Total	481	78.3	100.0	
Missing	System	133	21.7		
Total		614	100.0		

Do you contemplate returning to school full or part time?					
		Frequency	Percent	Valid Percent	Cumulative Percent
Valid	Full Time	62	10.1	12.9	12.9
	Part Time	150	24.4	31.2	44.1
	No	269	43.8	55.9	100.0
	Total	481	78.3	100.0	
Missing	System	133	21.7		
Total		614	100.0		

Do you contemplate moving out of the engineering profession entirely?					
		Frequency	Percent	Valid Percent	Cumulative Percent
Valid	Yes	139	22.6	28.9	28.9
	No	342	55.7	71.1	100.0
	Total	481	78.3	100.0	
Missing	System	133	21.7		
Total		614	100.0		

Outplacement services [Question: When you left, did your previous employer provi					
		Frequency	Percent	Valid Percent	Cumulative Percent
Valid	Not Selected	391	63.7	81.3	81.3
	Selected	90	14.7	18.7	100.0
	Total	481	78.3	100.0	
Missing	System	133	21.7		
Total		614	100.0		

Retraining opportunities [Question: When you left, did your previous employer pr					
		Frequency	Percent	Valid Percent	Cumulative Percent
Valid	Not Selected	464	75.6	96.5	96.5
	Selected	17	2.8	3.5	100.0
	Total	481	78.3	100.0	
Missing	System	133	21.7		
Total		614	100.0		



Severance [Question: When you left, did your previous employer provide: (Select					
		Frequency	Percent	Valid Percent	Cumulative Percent
Valid	Not Selected	335	54.6	69.6	69.6
	Selected	146	23.8	30.4	100.0
	Total	481	78.3	100.0	
Missing	System	133	21.7		
Total		614	100.0		

Extended benefits [Question: When you left, did your previous employer provide:					
		Frequency	Percent	Valid Percent	Cumulative Percent
Valid	Not Selected	405	66.0	84.2	84.2
	Selected	76	12.4	15.8	100.0
	Total	481	78.3	100.0	
Missing	System	133	21.7		
Total		614	100.0		

None of the above [Question: When you left, did your previous employer provide:					
		Frequency	Percent	Valid Percent	Cumulative Percent
Valid	Not Selected	177	28.8	36.8	36.8
	Selected	304	49.5	63.2	100.0
	Total	481	78.3	100.0	
Missing	System	133	21.7		
Total		614	100.0		

Life insurance [Question: When you were previously employed, which benefits were					
		Frequency	Percent	Valid Percent	Cumulative Percent
Valid	Not Selected	242	39.4	51.8	51.8
	Selected	225	36.6	48.2	100.0
	Total	467	76.1	100.0	
Missing	System	147	23.9		
Total		614	100.0		

401K plan [Question: When you were previously employed, which benefits were paid					
		Frequency	Percent	Valid Percent	Cumulative Percent
Valid	Not Selected	231	37.6	49.5	49.5
	Selected	236	38.4	50.5	100.0
	Total	467	76.1	100.0	
Missing	System	147	23.9		
Total		614	100.0		

Pension plan [Question: When you were previously employed, which benefits were p					
		Frequency	Percent	Valid Percent	Cumulative Percent
Valid	Not Selected	354	57.7	75.8	75.8
	Selected	113	18.4	24.2	100.0
	Total	467	76.1	100.0	
Missing	System	147	23.9		
Total		614	100.0		

## 2008 IEEE-USA UNEMPLOYMENT SURVEY: THE RESULTS

Healthcare insurance [Question: When you were previously employed, which benefit					
		Frequency	Percent	Valid Percent	Cumulative Percent
Valid	Not Selected	145	23.6	31.0	31.0
	Selected	322	52.4	69.0	100.0
	Total	467	76.1	100.0	
Missing	System	147	23.9		
Total		614	100.0		

Dental insurance [Question: When you were previously employed, which benefits we					
		Frequency	Percent	Valid Percent	Cumulative Percent
Valid	Not Selected	204	33.2	43.7	43.7
	Selected	263	42.8	56.3	100.0
	Total	467	76.1	100.0	
Missing	System	147	23.9		
Total		614	100.0		

Visioncare insurance [Question: When you were previously employed, which benefit					
		Frequency	Percent	Valid Percent	Cumulative Percent
Valid	Not Selected	271	44.1	58.0	58.0
	Selected	196	31.9	42.0	100.0
	Total	467	76.1	100.0	
Missing	System	147	23.9		
Total		614	100.0		

None of the above [Question: When you were previously employed, which benefits w					
		Frequency	Percent	Valid Percent	Cumulative Percent
Valid	Not Selected	339	55.2	72.6	72.6
	Selected	128	20.8	27.4	100.0
	Total	467	76.1	100.0	
Missing	System	147	23.9		
Total		614	100.0		

Life insurance [Question: If you are reemployed, which benefits are paid or part					
		Frequency	Percent	Valid Percent	Cumulative Percent
Valid	Not Selected	353	57.5	75.6	75.6
	Selected	114	18.6	24.4	100.0
	Total	467	76.1	100.0	
Missing	System	147	23.9		
Total		614	100.0		

401K plan [Question: If you are reemployed, which benefits are paid or partially					
		Frequency	Percent	Valid Percent	Cumulative Percent
Valid	Not Selected	343	55.9	73.4	73.4
	Selected	124	20.2	26.6	100.0
	Total	467	76.1	100.0	
Missing	System	147	23.9		
Total		614	100.0		

Pension plan [Question: If you are reemployed, which benefits are paid or partia					
		Frequency	Percent	Valid Percent	Cumulative Percent
Valid	Not Selected	420	68.4	89.9	89.9
	Selected	47	7.7	10.1	100.0
	Total	467	76.1	100.0	
Missing	System	147	23.9		
Total		614	100.0		



Healthcare insurance [Question: If you are reemployed, which benefits are paid o					
		Frequency	Percent	Valid Percent	Cumulative Percent
Valid	Not Selected	306	49.8	65.5	65.5
	Selected	161	26.2	34.5	100.0
	Total	467	76.1	100.0	
Missing	System	147	23.9		
Total		614	100.0		

Dental insurance [Question: If you are reemployed, which benefits are paid or pa					
		Frequency	Percent	Valid Percent	Cumulative Percent
Valid	Not Selected	331	53.9	70.9	70.9
	Selected	136	22.1	29.1	100.0
	Total	467	76.1	100.0	
Missing	System	147	23.9		
Total		614	100.0		

Visioncare insurance [Question: If you are reemployed, which benefits are paid o					
		Frequency	Percent	Valid Percent	Cumulative Percent
Valid	Not Selected	351	57.2	75.2	75.2
	Selected	116	18.9	24.8	100.0
	Total	467	76.1	100.0	
Missing	System	147	23.9		
Total		614	100.0		

None of the above [Question: If you are reemployed, which benefits are paid or p					
		Frequency	Percent	Valid Percent	Cumulative Percent
Valid	Not Selected	334	54.4	71.5	71.5
	Selected	133	21.7	28.5	100.0
	Total	467	76.1	100.0	
Missing	System	147	23.9		
Total		614	100.0		

Life insurance [Question: While you were/you are unemployed, which benefits were					
		Frequency	Percent	Valid Percent	Cumulative Percent
Valid	Not Selected	323	52.6	69.5	69.5
	Selected	142	23.1	30.5	100.0
	Total	465	75.7	100.0	
Missing	System	149	24.3		
Total		614	100.0		

401K plan [Question: While you were/you are unemployed, which benefits were/are					
		Frequency	Percent	Valid Percent	Cumulative Percent
Valid	Not Selected	409	66.6	88.0	88.0
	Selected	56	9.1	12.0	100.0
	Total	465	75.7	100.0	
Missing	System	149	24.3		
Total		614	100.0		

Pension plan [Question: While you were/you are unemployed, which benefits were/a					
		Frequency	Percent	Valid Percent	Cumulative Percent
Valid	Not Selected	445	72.5	95.7	95.7
	Selected	20	3.3	4.3	100.0
	Total	465	75.7	100.0	
Missing	System	149	24.3		
Total		614	100.0		

## 2008 IEEE-USA UNEMPLOYMENT SURVEY: THE RESULTS

Healthcare insurance [Question: While you were/you are unemployed, which benefit					
		Frequency	Percent	Valid Percent	Cumulative Percent
Valid	Not Selected	211	34.4	45.4	45.4
	Selected	254	41.4	54.6	100.0
	Total	465	75.7	100.0	
Missing	System	149	24.3		
Total		614	100.0		

Dental insurance [Question: While you were/you are unemployed, which benefits we					
		Frequency	Percent	Valid Percent	Cumulative Percent
Valid	Not Selected	325	52.9	69.9	69.9
	Selected	140	22.8	30.1	100.0
	Total	465	75.7	100.0	
Missing	System	149	24.3		
Total		614	100.0		

Visioncare insurance [Question: While you were/you are unemployed, which benefit					
		Frequency	Percent	Valid Percent	Cumulative Percent
Valid	Not Selected	378	61.6	81.3	81.3
	Selected	87	14.2	18.7	100.0
	Total	465	75.7	100.0	
Missing	System	149	24.3		
Total		614	100.0		

None of the above [Question: While you were/you are unemployed, which benefits w					
		Frequency	Percent	Valid Percent	Cumulative Percent
Valid	Not Selected	317	51.6	68.2	68.2
	Selected	148	24.1	31.8	100.0
	Total	465	75.7	100.0	
Missing	System	149	24.3		
Total		614	100.0		

Very difficult to find new job [Question: Describe your employment search and th					
		Frequency	Percent	Valid Percent	Cumulative Percent
Valid	Not Selected	235	38.3	52.3	52.3
	Selected	214	34.9	47.7	100.0
	Total	449	73.1	100.0	
Missing	System	165	26.9		
Total		614	100.0		

Fairly easy to find a new job [Question: Describe your employment search and the					
		Frequency	Percent	Valid Percent	Cumulative Percent
Valid	Not Selected	407	66.3	90.6	90.6
	Selected	42	6.8	9.4	100.0
	Total	449	73.1	100.0	
Missing	System	165	26.9		
Total		614	100.0		

Offer fell into my lap [Question: Describe your employment search and the result					
		Frequency	Percent	Valid Percent	Cumulative Percent
Valid	Not Selected	416	67.8	92.7	92.7
	Selected	33	5.4	7.3	100.0
	Total	449	73.1	100.0	
Missing	System	165	26.9		
Total		614	100.0		



Found a great job [Question: Describe your employment search and the results: (S					
		Frequency	Percent	Valid Percent	Cumulative Percent
Valid	Not Selected	391	63.7	87.1	87.1
	Selected	58	9.4	12.9	100.0
	Total	449	73.1	100.0	
Missing	System	165	26.9		
Total		614	100.0		

Found an adequate job [Question: Describe your employment search and the results					
		Frequency	Percent	Valid Percent	Cumulative Percent
Valid	Not Selected	418	68.1	93.1	93.1
	Selected	31	5.0	6.9	100.0
	Total	449	73.1	100.0	
Missing	System	165	26.9		
Total		614	100.0		

Anticipate a raise [Question: Describe your employment search and the results: (					
		Frequency	Percent	Valid Percent	Cumulative Percent
Valid	Not Selected	431	70.2	96.0	96.0
	Selected	18	2.9	4.0	100.0
	Total	449	73.1	100.0	
Missing	System	165	26.9		
Total		614	100.0		

Will have to take a cut in pay [Question: Describe your employment search and th					
		Frequency	Percent	Valid Percent	Cumulative Percent
Valid	Not Selected	395	64.3	88.0	88.0
	Selected	54	8.8	12.0	100.0
	Total	449	73.1	100.0	
Missing	System	165	26.9		
Total		614	100.0		

Have not yet found a new job [Question: Describe your employment search and the					
		Frequency	Percent	Valid Percent	Cumulative Percent
Valid	Not Selected	282	45.9	62.8	62.8
	Selected	167	27.2	37.2	100.0
	Total	449	73.1	100.0	
Missing	System	165	26.9		
Total		614	100.0		

Other [Question: Describe your employment search and the results: (Select all th					
		Frequency	Percent	Valid Percent	Cumulative Percent
Valid	Not Selected	386	62.9	86.0	86.0
	Selected	63	10.3	14.0	100.0
	Total	449	73.1	100.0	
Missing	System	165	26.9		
Total		614	100.0		

If you have/had a child, would you recommend to your son/daughter to go into you					
		Frequency	Percent	Valid Percent	Cumulative Percent
Valid	Yes	195	31.8	43.4	43.4
	No	120	19.5	26.7	70.2
	Not sure	134	21.8	29.8	100.0
	Total	449	73.1	100.0	
Missing	System	165	26.9		
Total		614	100.0		

## 2008 IEEE-USA UNEMPLOYMENT SURVEY: THE RESULTS

Are you aware of any of IEEE-USA's employment assistance services?					
		Frequency	Percent	Valid Percent	Cumulative Percent
Valid	Yes	176	28.7	39.2	39.2
	No	273	44.5	60.8	100.0
	Total	449	73.1	100.0	
Missing	System	165	26.9		
Total		614	100.0		

[Topic: Sending out resumes Question: Rate how well various job-search technique					
		Frequency	Percent	Valid Percent	Cumulative Percent
Valid	Did not use	75	12.2	16.7	16.7
	Not Answered	1	.2	.2	16.9
	Very effective 1	25	4.1	5.6	22.5
	2	21	3.4	4.7	27.2
	3	25	4.1	5.6	32.7
	4	26	4.2	5.8	38.5
	5	60	9.8	13.4	51.9
	6	23	3.7	5.1	57.0
	7	58	9.4	12.9	69.9
	8	40	6.5	8.9	78.8
	Very ineffective 9	95	15.5	21.2	100.0
Total		449	73.1	100.0	
Missing	System	165	26.9		
Total		614	100.0		

[Topic: Answering ads Question: Rate how well various job-search techniques work					
		Frequency	Percent	Valid Percent	Cumulative Percent
Valid	Did not use	111	18.1	24.7	24.7
	Not Answered	1	.2	.2	24.9
	Very effective 1	11	1.8	2.4	27.4
	2	21	3.4	4.7	32.1
	3	24	3.9	5.3	37.4
	4	22	3.6	4.9	42.3
	5	53	8.6	11.8	54.1
	6	30	4.9	6.7	60.8
	7	50	8.1	11.1	71.9
	8	45	7.3	10.0	82.0
	Very ineffective 9	81	13.2	18.0	100.0
Total		449	73.1	100.0	
Missing	System	165	26.9		
Total		614	100.0		

[Topic: Using a headhunter Question: Rate how well various job-search techniques					
		Frequency	Percent	Valid Percent	Cumulative Percent
Valid	Did not use	187	30.5	41.6	41.6
	Not Answered	3	.5	.7	42.3
	Very effective 1	12	2.0	2.7	45.0
	2	15	2.4	3.3	48.3
	3	24	3.9	5.3	53.7
	4	21	3.4	4.7	58.4
	5	41	6.7	9.1	67.5
	6	30	4.9	6.7	74.2
	7	35	5.7	7.8	82.0
	8	35	5.7	7.8	89.8
	Very ineffective 9	46	7.5	10.2	100.0
Total		449	73.1	100.0	
Missing	System	165	26.9		
Total		614	100.0		



[Topic: Using outplacement services Question: Rate how well various job-search t					
		Frequency	Percent	Valid Percent	Cumulative Percent
Valid	Did not use	278	45.3	61.9	61.9
	Not Answered	2	.3	.4	62.4
	Very effective 1	4	.7	.9	63.3
	2	6	1.0	1.3	64.6
	3	6	1.0	1.3	65.9
	4	13	2.1	2.9	68.8
	5	32	5.2	7.1	75.9
	6	16	2.6	3.6	79.5
	7	15	2.4	3.3	82.9
	8	24	3.9	5.3	88.2
	Very ineffective 9	53	8.6	11.8	100.0
Total	449	73.1	100.0		
Missing	System	165	26.9		
Total		614	100.0		

[Topic: Hiring private consultant Question: Rate how well various job-search tec					
		Frequency	Percent	Valid Percent	Cumulative Percent
Valid	Did not use	375	61.1	83.5	83.5
	Not Answered	2	.3	.4	84.0
	Very effective 1	2	.3	.4	84.4
	2	3	.5	.7	85.1
	3	3	.5	.7	85.7
	4	5	.8	1.1	86.9
	5	11	1.8	2.4	89.3
	6	8	1.3	1.8	91.1
	7	5	.8	1.1	92.2
	8	12	2.0	2.7	94.9
	Very ineffective 9	23	3.7	5.1	100.0
Total	449	73.1	100.0		
Missing	System	165	26.9		
Total		614	100.0		

[Topic: Going to job fairs Question: Rate how well various job-search techniques					
		Frequency	Percent	Valid Percent	Cumulative Percent
Valid	Did not use	165	26.9	36.7	36.7
	Not Answered	2	.3	.4	37.2
	Very effective 1	7	1.1	1.6	38.8
	2	12	2.0	2.7	41.4
	3	17	2.8	3.8	45.2
	4	22	3.6	4.9	50.1
	5	33	5.4	7.3	57.5
	6	25	4.1	5.6	63.0
	7	31	5.0	6.9	69.9
	8	41	6.7	9.1	79.1
	Very ineffective 9	94	15.3	20.9	100.0
Total	449	73.1	100.0		
Missing	System	165	26.9		
Total		614	100.0		

## 2008 IEEE-USA UNEMPLOYMENT SURVEY: THE RESULTS

[Topic: Networking Question: Rate how well various job-search techniques work fo					
		Frequency	Percent	Valid Percent	Cumulative Percent
Valid	Did not use	81	13.2	18.0	18.0
	Not Answered	3	.5	.7	18.7
	Very effective 1	73	11.9	16.3	35.0
	2	49	8.0	10.9	45.9
	3	45	7.3	10.0	55.9
	4	45	7.3	10.0	65.9
	5	44	7.2	9.8	75.7
	6	28	4.6	6.2	82.0
	7	29	4.7	6.5	88.4
	8	26	4.2	5.8	94.2
	Very ineffective 9	26	4.2	5.8	100.0
Total	449	73.1	100.0		
Missing	System	165	26.9		
Total		614	100.0		

[Topic: Internet job listings Question: Rate how well various job-search techniq					
		Frequency	Percent	Valid Percent	Cumulative Percent
Valid	Did not use	63	10.3	14.0	14.0
	Not Answered	2	.3	.4	14.5
	Very effective 1	30	4.9	6.7	21.2
	2	33	5.4	7.3	28.5
	3	41	6.7	9.1	37.6
	4	41	6.7	9.1	46.8
	5	53	8.6	11.8	58.6
	6	35	5.7	7.8	66.4
	7	46	7.5	10.2	76.6
	8	38	6.2	8.5	85.1
	Very ineffective 9	67	10.9	14.9	100.0
Total	449	73.1	100.0		
Missing	System	165	26.9		
Total		614	100.0		

[Topic: Other Question: Rate how well various job-search techniques work for you					
		Frequency	Percent	Valid Percent	Cumulative Percent
Valid	Did not use	348	56.7	77.5	77.5
	Not Answered	2	.3	.4	78.0
	Very effective 1	10	1.6	2.2	80.2
	2	6	1.0	1.3	81.5
	3	11	1.8	2.4	84.0
	4	8	1.3	1.8	85.7
	5	24	3.9	5.3	91.1
	6	10	1.6	2.2	93.3
	7	5	.8	1.1	94.4
	8	5	.8	1.1	95.5
	Very ineffective 9	20	3.3	4.5	100.0
Total	449	73.1	100.0		
Missing	System	165	26.9		
Total		614	100.0		

Age [Question: Check any of the following that you view as personal major barrie					
		Frequency	Percent	Valid Percent	Cumulative Percent
Valid	Not Selected	183	29.8	40.8	40.8
	Selected	266	43.3	59.2	100.0
	Total	449	73.1	100.0	
Missing	System	165	26.9		
Total		614	100.0		



Sex [Question: Check any of the following that you view as personal major barrie					
		Frequency	Percent	Valid Percent	Cumulative Percent
Valid	Not Selected	419	68.2	93.3	93.3
	Selected	30	4.9	6.7	100.0
	Total	449	73.1	100.0	
Missing	System	165	26.9		
Total		614	100.0		

Ethnic background [Question: Check any of the following that you view as persona					
		Frequency	Percent	Valid Percent	Cumulative Percent
Valid	Not Selected	389	63.4	86.6	86.6
	Selected	60	9.8	13.4	100.0
	Total	449	73.1	100.0	
Missing	System	165	26.9		
Total		614	100.0		

Disability [Question: Check any of the following that you view as personal major					
		Frequency	Percent	Valid Percent	Cumulative Percent
Valid	Not Selected	418	68.1	93.1	93.1
	Selected	31	5.0	6.9	100.0
	Total	449	73.1	100.0	
Missing	System	165	26.9		
Total		614	100.0		

Educational background [Question: Check any of the following that you view as pe					
		Frequency	Percent	Valid Percent	Cumulative Percent
Valid	Not Selected	378	61.6	84.2	84.2
	Selected	71	11.6	15.8	100.0
	Total	449	73.1	100.0	
Missing	System	165	26.9		
Total		614	100.0		

Area of technical competence [Question: Check any of the following that you view					
		Frequency	Percent	Valid Percent	Cumulative Percent
Valid	Not Selected	307	50.0	68.4	68.4
	Selected	142	23.1	31.6	100.0
	Total	449	73.1	100.0	
Missing	System	165	26.9		
Total		614	100.0		

Geographic preferences [Question: Check any of the following that you view as pe					
		Frequency	Percent	Valid Percent	Cumulative Percent
Valid	Not Selected	295	48.0	65.7	65.7
	Selected	154	25.1	34.3	100.0
	Total	449	73.1	100.0	
Missing	System	165	26.9		
Total		614	100.0		

National economic conditions [Question: Check any of the following that you view					
		Frequency	Percent	Valid Percent	Cumulative Percent
Valid	Not Selected	244	39.7	54.3	54.3
	Selected	205	33.4	45.7	100.0
	Total	449	73.1	100.0	
Missing	System	165	26.9		
Total		614	100.0		

## 2008 IEEE-USA UNEMPLOYMENT SURVEY: THE RESULTS

Decrease in government spending [Question: Check any of the following that you v					
		Frequency	Percent	Valid Percent	Cumulative Percent
Valid	Not Selected	390	63.5	86.9	86.9
	Selected	59	9.6	13.1	100.0
	Total	449	73.1	100.0	
Missing	System	165	26.9		
Total		614	100.0		

Other [Question: Check any of the following that you view as personal major barr					
		Frequency	Percent	Valid Percent	Cumulative Percent
Valid	Not Selected	379	61.7	84.4	84.4
	Selected	70	11.4	15.6	100.0
	Total	449	73.1	100.0	
Missing	System	165	26.9		
Total		614	100.0		

How do you assess the long term demand for engineers?					
		Frequency	Percent	Valid Percent	Cumulative Percent
Valid	Excellent	79	12.9	17.6	17.6
	Good	192	31.3	42.8	60.4
	Fair	127	20.7	28.3	88.6
	Poor	51	8.3	11.4	100.0
	Total	449	73.1	100.0	
Missing	System	165	26.9		
Total		614	100.0		

BS/BSEE/other Baccalaureate [Question: What degree(s) do you hold? (Select all t					
		Frequency	Percent	Valid Percent	Cumulative Percent
Valid	Not Selected	123	20.0	27.5	27.5
	Selected	325	52.9	72.5	100.0
	Total	448	73.0	100.0	
Missing	System	166	27.0		
Total		614	100.0		

MS/MSEE/other Master's [Question: What degree(s) do you hold? (Select all that a					
		Frequency	Percent	Valid Percent	Cumulative Percent
Valid	Not Selected	242	39.4	54.0	54.0
	Selected	206	33.6	46.0	100.0
	Total	448	73.0	100.0	
Missing	System	166	27.0		
Total		614	100.0		

Ph.D. [Question: What degree(s) do you hold? (Select all that apply.)]					
		Frequency	Percent	Valid Percent	Cumulative Percent
Valid	Not Selected	375	61.1	83.7	83.7
	Selected	73	11.9	16.3	100.0
	Total	448	73.0	100.0	
Missing	System	166	27.0		
Total		614	100.0		

None [Question: What degree(s) do you hold? (Select all that apply.)]					
		Frequency	Percent	Valid Percent	Cumulative Percent
Valid	Not Selected	435	70.8	97.1	97.1
	Selected	13	2.1	2.9	100.0
	Total	448	73.0	100.0	
Missing	System	166	27.0		
Total		614	100.0		



Other [Question: What degree(s) do you hold? (Select all that apply.)]					
		Frequency	Percent	Valid Percent	Cumulative Percent
Valid	Not Selected	401	65.3	89.5	89.5
	Selected	47	7.7	10.5	100.0
	Total	448	73.0	100.0	
Missing	System	166	27.0		
Total		614	100.0		

Other Specify [Question: What degree(s) do you hold? (Select all that apply.)]					
		Frequency	Percent	Valid Percent	Cumulative Percent
Valid		568	92.5	92.5	92.5
	20 years of professional study	1	.2	.2	92.7
	AA ET	1	.2	.2	92.8
	AAS	1	.2	.2	93.0
	All but Thesis in Astronomy	1	.2	.2	93.2
	AS	1	.2	.2	93.3
	BA, Dance	1	.2	.2	93.5
	BS-CS	1	.2	.2	93.6
	BS Computer Science	1	.2	.2	93.8
	BSCS,BSEE,Tech.Certificate	1	.2	.2	94.0
	BSEE	1	.2	.2	94.1
	Diplomas and certificates in Telecommunication	1	.2	.2	94.3
	Ed. D.	1	.2	.2	94.5
	Engineer(UCLA) equivalent to PhD in industry	1	.2	.2	94.6
	English	1	.2	.2	94.8
	first year MS	1	.2	.2	95.0
	Incomplete BS	1	.2	.2	95.1
	Ivy League MBA	1	.2	.2	95.3
	J.D.	1	.2	.2	95.4
	jd	1	.2	.2	95.6
	JD	1	.2	.2	95.8
	Juris Doctor	1	.2	.2	95.9
	MA	1	.2	.2	96.1
	MasterCNE	1	.2	.2	96.3
	mba	1	.2	.2	96.4
	MBA	9	1.5	1.5	97.9
	MCSE, CCNA	1	.2	.2	98.0
	MS Eng Mgt	1	.2	.2	98.2
	MS/Internationa Business	1	.2	.2	98.4
	Naval Training	1	.2	.2	98.5
	P.E. License	1	.2	.2	98.7
	PE	1	.2	.2	98.9
	PE license in 5 states	1	.2	.2	99.0
Ph.D candidate	1	.2	.2	99.2	
PMP	1	.2	.2	99.3	
Started MS in ECET	1	.2	.2	99.5	
Teaching Credential	1	.2	.2	99.7	
unfinished MBA (diploma)	1	.2	.2	99.8	
writing MEng thesis att	1	.2	.2	100.0	
Total		614	100.0	100.0	

RECENTGR					
		Frequency	Percent	Valid Percent	Cumulative Percent
Valid	0	614	100.0	100.0	100.0

## 2008 IEEE-USA UNEMPLOYMENT SURVEY: THE RESULTS

**Question 22, recoded:**

- 1        Networking, etc (including lobbying)
- 2        Protection of domestic supply
- 3        Little IEEE could do
- 4        Improve image, etc.
- 5        Technical training, other services
- 6        Health and other insurance
- 7        Reduce/eliminate fees if unemployed
- 8        Fight age discrimination
- 9        Keep up good work
- 10      Other

What should IEEE-USA be doing to help (if anything)?	Freq.	Percent	Cum.
1	52	32.50	32.50
10	4	2.50	35.00
2	31	19.38	54.38
3	27	16.88	71.25
4	5	3.13	74.38
5	18	11.25	85.63
6	11	6.88	92.50
7	1	0.63	93.13
8	7	4.38	97.50
9	4	2.50	100.00
Total	160	100.00	

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