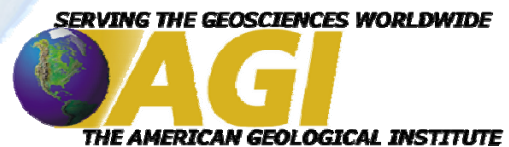


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# Effects of the Global Economic Crisis on Geoscience Departments

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March 2009

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American Geological Institute  
Geoscience Workforce Program

**Effects of the Global Economic Crisis on Geoscience Departments**  
**March 2009**

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## Introduction

From the end of 2008 through the early part of 2009, an increasing number of representatives from academic institutions began expressing concerns about the viability of their geoscience programs in the face of cutbacks due to the economic downturn. To better assess this situation, the American Geological Institute added an optional survey as part of the 2009 Directory of Geoscience Departments update process.

The survey consisted of five questions that pertained to impacts of the economic downturn on geoscience departments. This report provides a snapshot of these impacts as of March 2009 both internationally and within the United States. A regional analysis for U.S. geoscience departments for all institutions and by institution type is also provided.

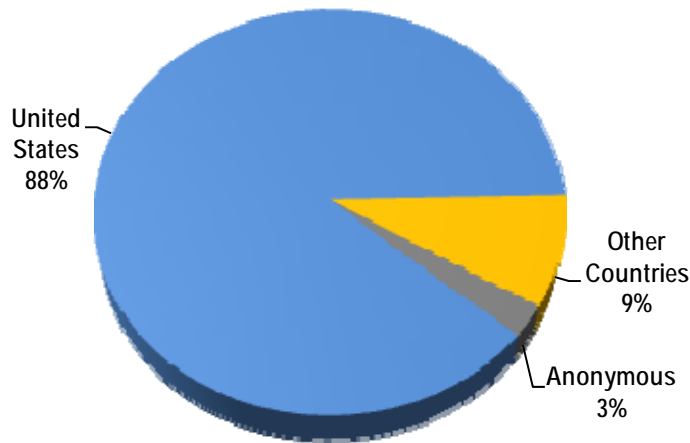
### Key Highlights

- 83% of geoscience departments expect budget cuts for 2009 and/or 2010.
- Budget cuts are expected to impact faculty (reductions and hiring freezes) and support activities (IT, lab equipment, etc.) the most.
- Graduate student admission and graduate student support will be least impacted.
- The majority of departments expect to be viable beyond the next three years.
- Several U.S. geoscience departments reported “definite” or “immediate” threats to their viability or future beyond the next three years. No international departments reported this level of crisis.
- Most budgets are expected to be cut by up to 10 percent in the next 12 months (when compared to the 2008 budget).
- Within the U.S., geoscience departments in the South are facing the largest impacts, while departments in the Midwest are weathering the crisis the best.
- Internationally, 71% of geoscience departments expect budget cuts in 2009 and/or 2010, with the most reductions occurring in support (IT, lab equipment, etc.) and reduction in lab / field trip activities.
- Only 24 percent of international geoscience departments feel that their future is “possibly” threatened beyond the next three years.

## Survey Responses by All Respondents

By March 2009, 192 departments from across the world responded to the survey. The majority of departments (88%) were from the United States, and 9 percent of respondents were from other countries including: Australia, Belgium, Canada, France, Germany, Hungary, Israel, New Zealand, and Spain. Overwhelmingly, survey respondents were from four-year universities and colleges (78%) and to a lesser extent from two-year colleges (U.S. only) (9%) and research institutes (7%).

### U.S. and non-U.S. Survey Respondents

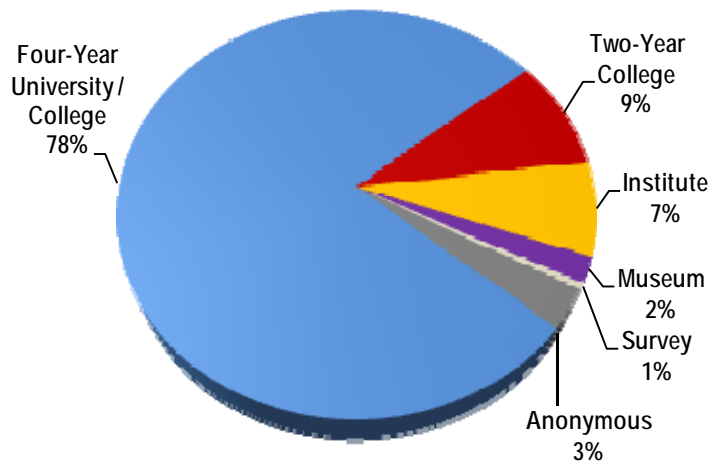


Source: AGI Geoscience Workforce Program

n=192

Figure 1: Survey Responses by Country

### All Survey Respondents by Institution Type

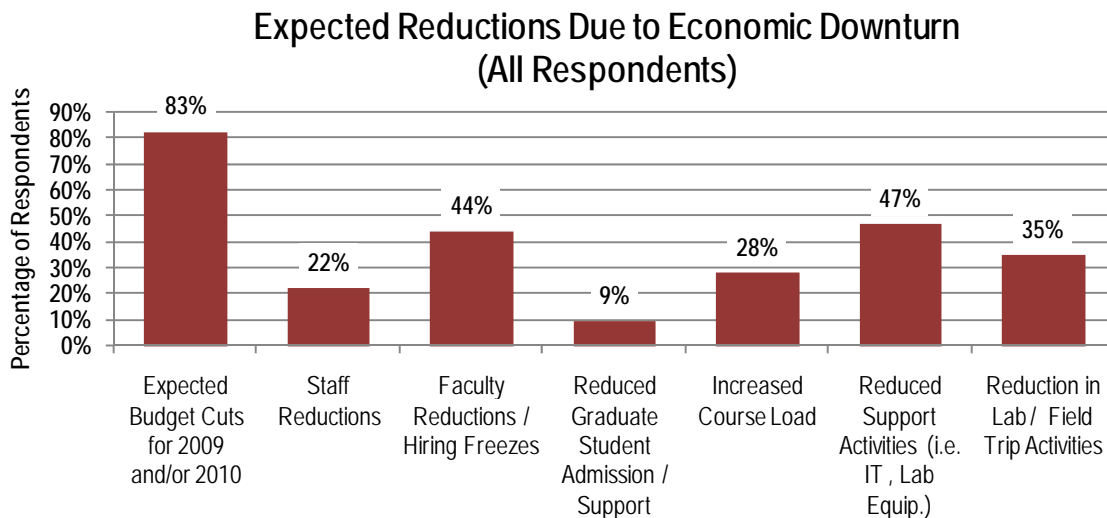


Source: AGI Geoscience Workforce Program

n=192

Figure 2: Survey Responses by Institution Type

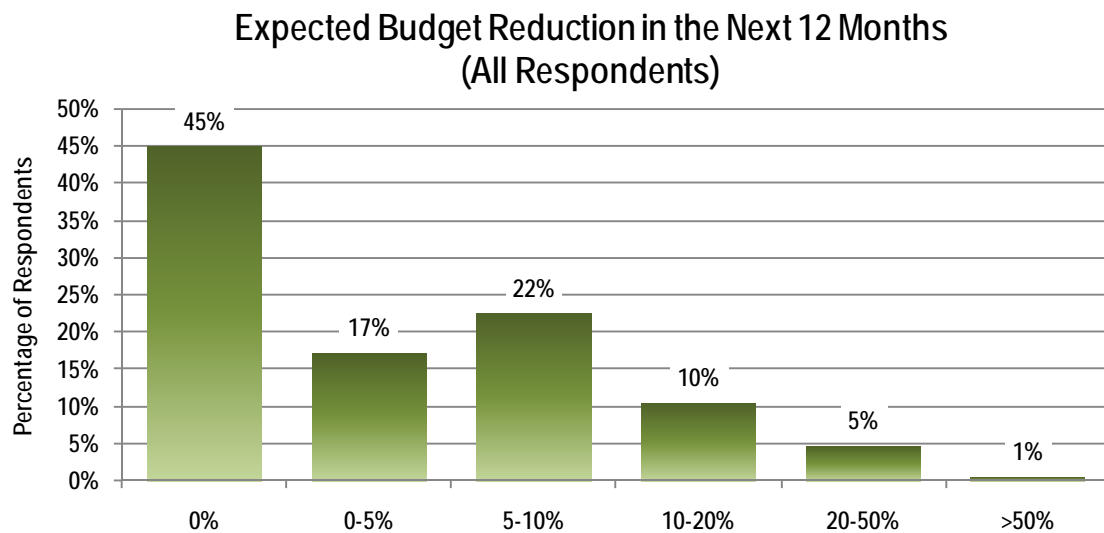
Eighty-three percent of respondents expected budget cuts for 2009 and/or 2010. Areas that were expected to be impacted the most by these budget cuts were faculty reductions (44%) and reductions in support activities (47%). Although, the majority of departments (72%) reported that these reductions would not threaten their viability or future beyond the next three years, four percent of respondents reported that the impacts of the economic downturn would “definitely” or “immediately” threaten their department. Additionally, 24 percent of departments reported that their future was “possibly” (20%) or “likely” (4%) threatened by the current budget cuts beyond the next three years.



Source: AGI Geoscience Workforce Program

n=192

**Figure 3: Expected Reductions Due to Economic Downturn (All Respondents)**

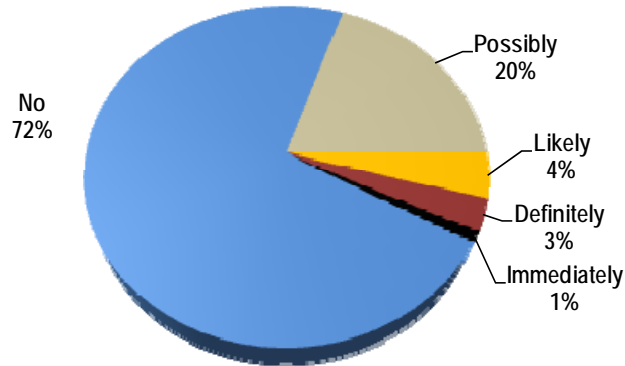


Source: AGI Geoscience Workforce Program

n=192

**Figure 4: Expected Budget Cuts (All Respondents)**

Will budget cuts threaten the viability or future of your department beyond the next three years?  
(All Respondents)



Source: AGI Geoscience Workforce Program

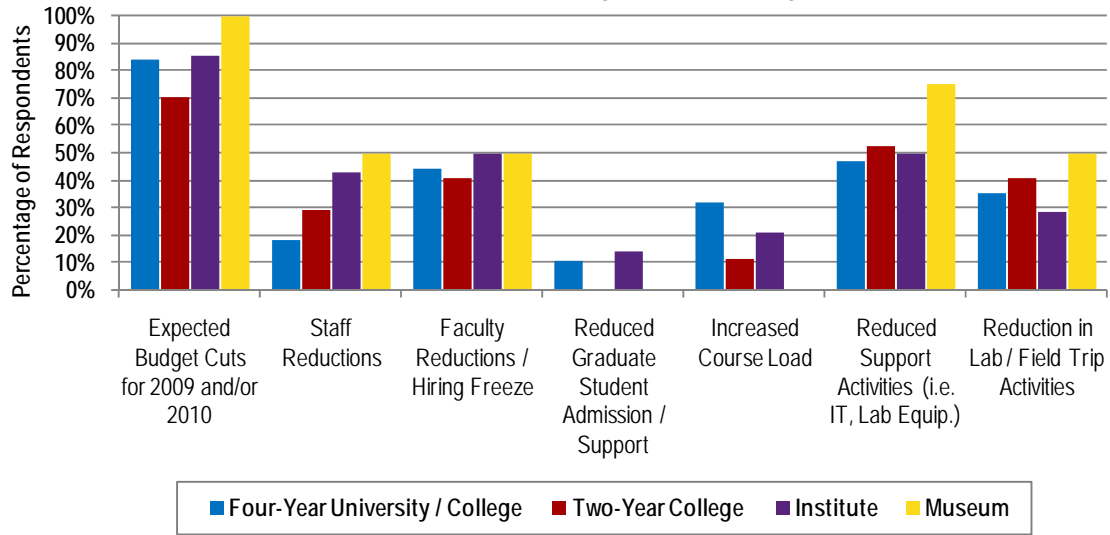
n=192

**Figure 5: Budget Cuts and Departmental Viability (All Respondents)**

## Survey Responses for All Respondents by Institution Type

When we examined the survey responses by institution type, the top expected impacts were reductions in support activities, faculty reductions, staff reductions, and reductions in lab/ field trip activities. Expected budget cuts within the next 12 months varied by institution type. Forty-three percent of four-year universities and colleges expected budget cuts of up to 10 percent whereas only 13 percent expected budget cuts of greater than 10 percent. In comparison, only 12 percent of two-year colleges expected budget cut of up to 5 percent whereas 35 percent of two-year colleges expected budget cuts of more than 10 percent. Fifty percent of museums and 43 percent of research institutes expected budget cuts of up to 10 percent, and 36 percent of research institutes expected budget cuts of greater than 10 percent.

### Expected Reductions Due to Economic Downturn (All Respondents by Institution Type)

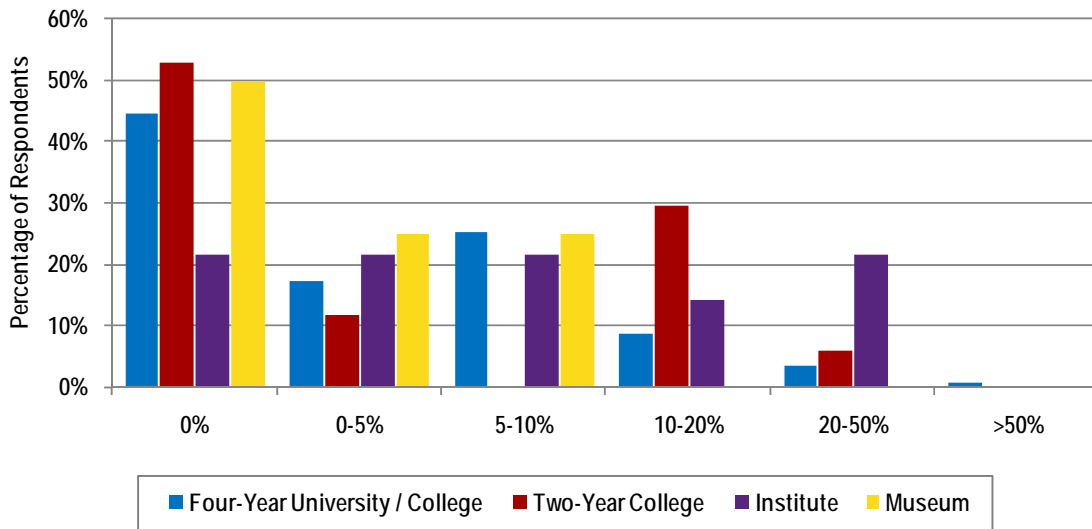


Source: AGI Geoscience Workforce Program

n=192

**Figure 6: Expected Reductions Due to Economic Downturn (All Respondents by Institution Type)**

### Expected Budget Reductions in the Next 12 Months (All Respondents by Institution Type)



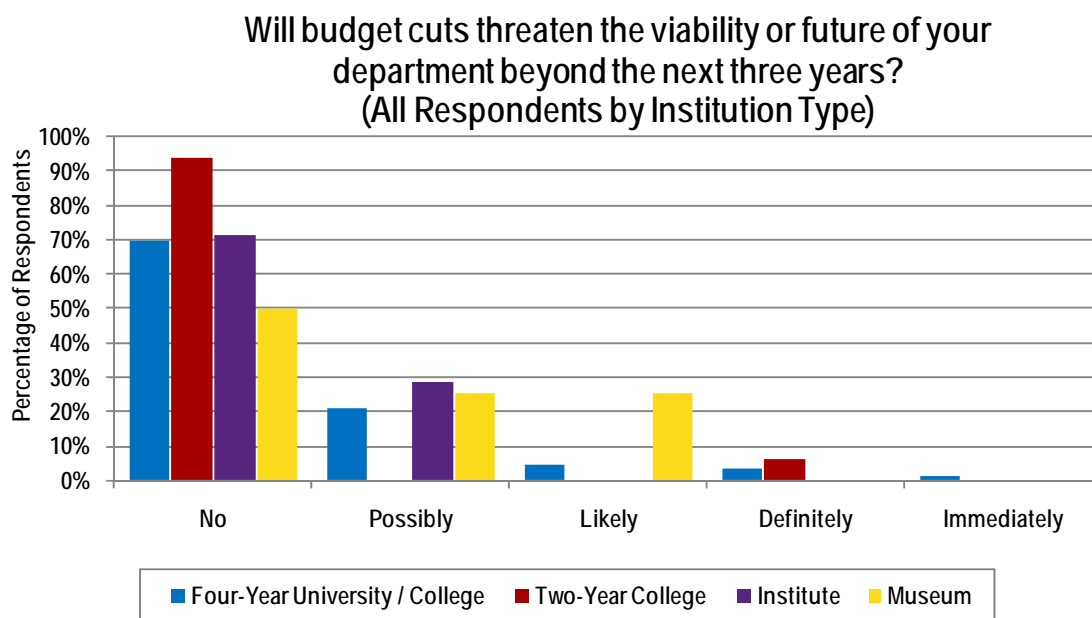
Source: AGI Geoscience Workforce Program

n=192

**Figure 7: Expected Budget Cuts (All Respondents by Institution Type)**



Despite the grim expectations of budget cuts, at least half of the departments per institution type reported that these cuts would not threaten the future of their departments (70%: four-year universities and colleges; 94%: two-year colleges; 71% research institutes; 50% museums). However, 6 percent of departments from two-year colleges and 4 percent of departments from four-year universities and colleges reported that their departments would be eliminated within the next three years. Furthermore, 50 percent of museums, 26 percent of four-year universities and colleges, and 29 percent of research institutes indicated that their departments would be “possibly” or “likely” threatened by the budget cuts beyond the next three years.



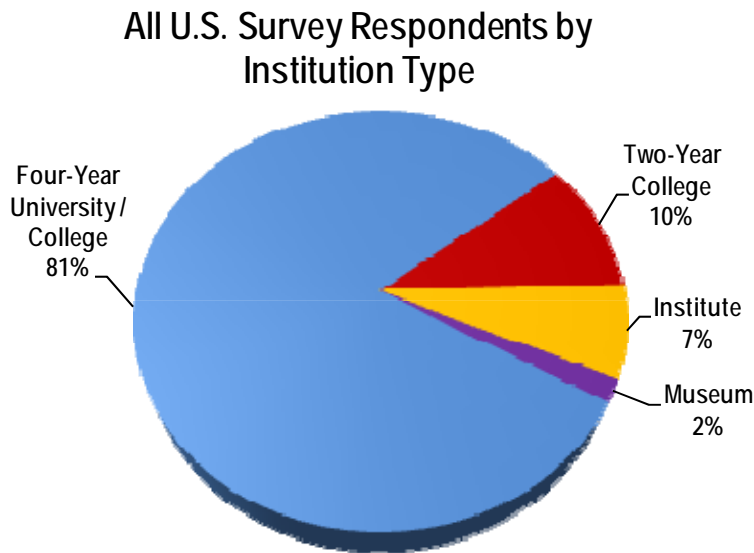
Source: AGI Geoscience Workforce Program

n=192

**Figure 8: Budget Cuts and Departmental Viability (All Respondents by Institution Type)**

## All U.S. Survey Responses

Within the United States, the majority of survey respondents (81%) were from four-year universities and colleges whereas 10 percent of respondents were from two-year colleges, 7 percent from research institutes, and 2 percent from museums.



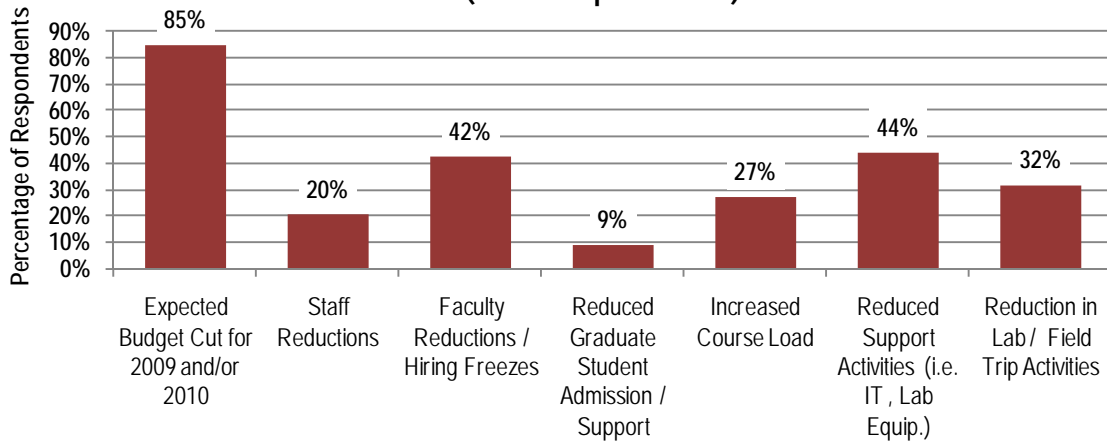
Source: AGI Geoscience Workforce Program

n=170

**Figure 9: Survey Responses by Institution Type (U.S. Respondents)**

When we compared the responses of U.S. survey respondents with the responses of all survey respondents, we found similar trends pertaining to the expected impacts of the current economic downturn. Eighty-five percent of U.S. survey respondents expected budget cuts in 2009 and/or 2010. In other categories (e.g. staff reductions, faculty reductions, increased course load, reduced support activities and reduced lab and field trip activities), U.S. survey respondents reported slightly lower impacts than did the pool of all survey respondents. Additionally, the majority of U.S. respondents (71%) did not expect that the budget cuts would threaten the existence of their department beyond the next three years.

### Expected Reductions Due to Economic Downturn (U.S. Respondents)

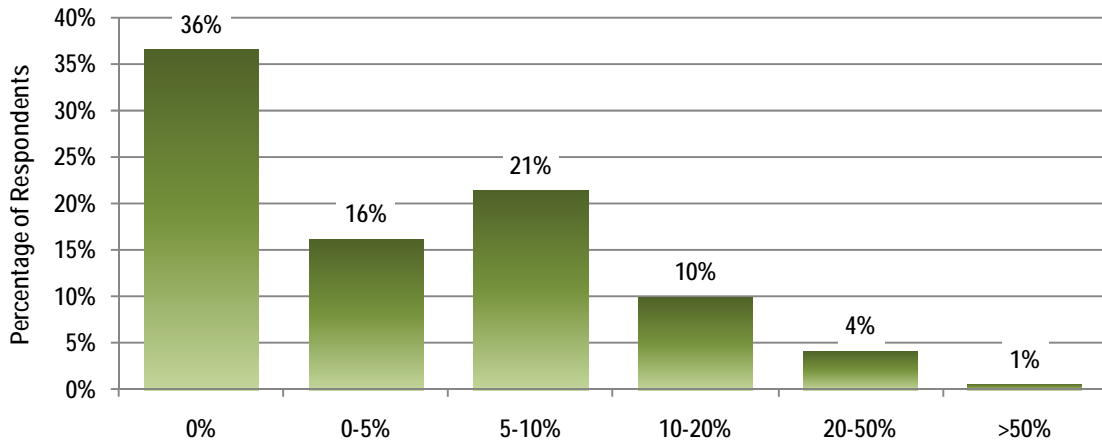


Source: AGI Geoscience Workforce Program

n=170

**Figure 10: Expected Reductions Due to Economic Downturn (U.S. Respondents)**

### Expected Budget Reduction in the Next 12 Months (U.S. Respondents)

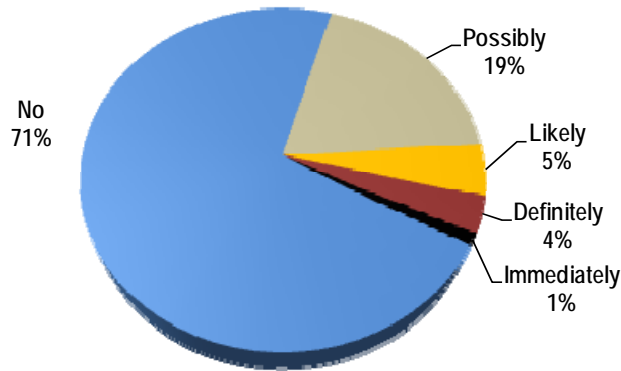


Source: AGI Geoscience Workforce Program

n=170

**Figure 11: Expected Budget Cuts (U.S. Respondents)**

Will budget cuts threaten the viability or future of your department beyond the next three years?  
(U.S. Respondents)



Source: AGI Geoscience Workforce Program

n=170

**Figure 12: Budget Cuts and Departmental Viability (U.S. Respondents)**

## U.S. Survey Responses by Institution Type

When we examined the survey responses by institution type, the over 70 percent of all institutions expected budget cuts for 2009 and/or 2010. The greatest impacts were expected in reduced support activities and faculty reductions. A higher percentage of research institutes and two-year colleges expected staff reductions than did four-year universities and colleges whereas a higher percentage of departments at four-year universities and colleges expected increased course load than departments at other institutions.

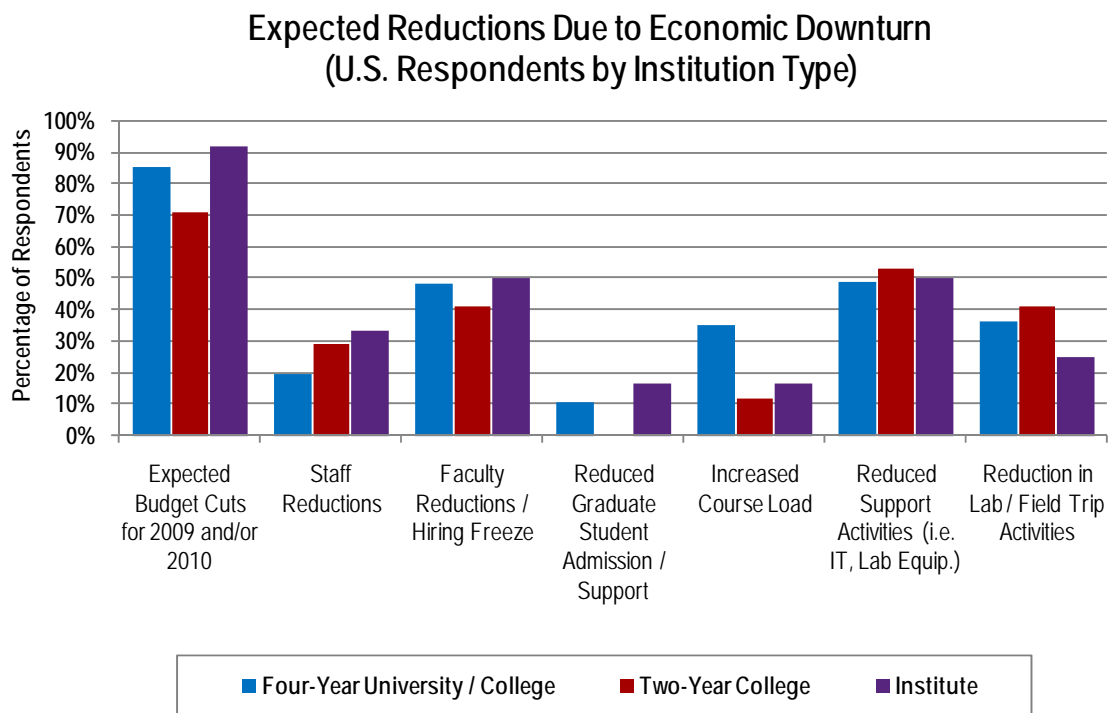
Because 31 percent of the four-year colleges and universities were public institutions, we also examined the differences in impacts for public and private four-year colleges and universities. A higher percentage of public four-year colleges and universities expected reductions across all categories than private four-year colleges and universities.

Furthermore, several two-year colleges, all of which were public institutions, reported an increase in enrollments tied to reports by students that they were unable to afford tuition at four-year institutions as well as an increase in students who were re-training for new workforce positions.

Some four year universities and colleges reported that funding from private companies has decreased, specific classes have been cut, hiring freezes have been put in effect, and undergraduate enrollments have decreased. Additionally, some departments indicated an

increase in applications for graduate studies. Others also mentioned that their departments may be merged with other larger departments within the institution.

The majority of departments from museums reported that they expected reductions in both staff and faculty positions as well as a reduction in support activities. All of these departments expected budget cuts in 2009 and/or 2010, and 66 percent of these departments expected that their departments would be “possibly” or “likely” threatened by these budget cuts beyond the next three years. Because of the low number of reporting museums, we did not include these analyses in the charts of this section.

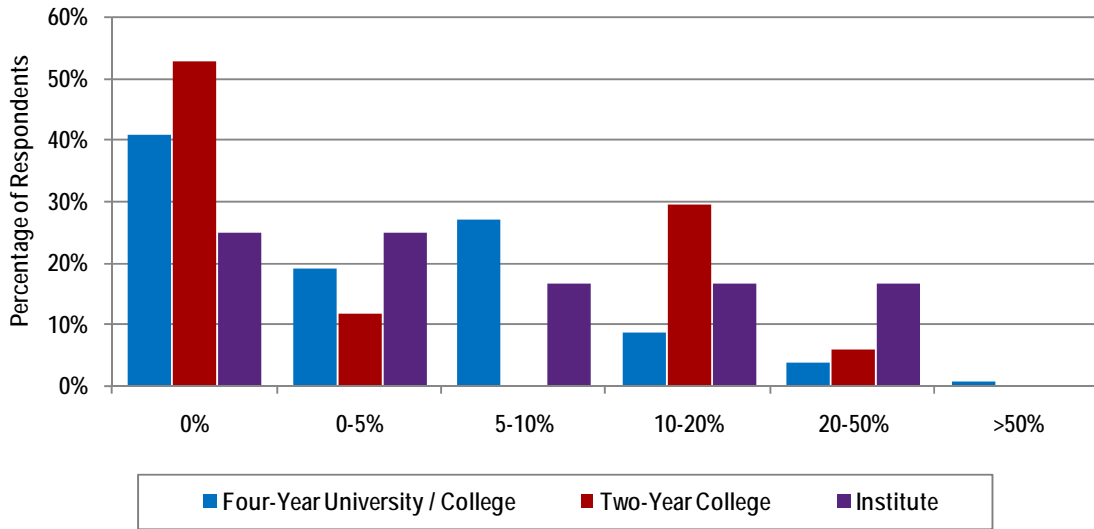


Source: AGI Geoscience Workforce Program

n=170

**Figure 13: Expected Reductions Due to Economic Downturn (U.S. Respondents by Institution Type)**

### Expected Budget Reductions in the Next 12 Months (U.S. Respondents by Institution Type)

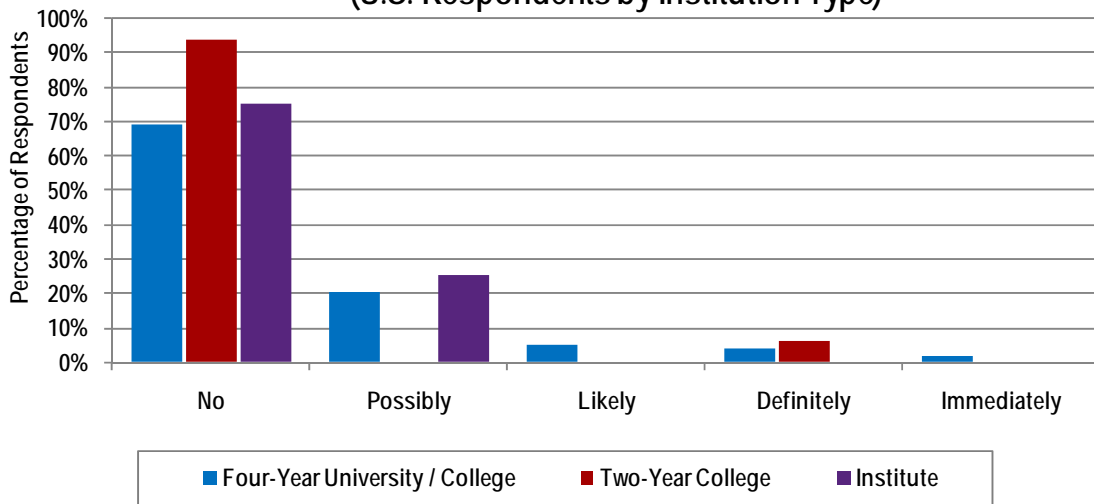


Source: AGI Geoscience Workforce Program

n=170

**Figure 14: Expected Budget Cuts (U.S. Respondents by Institution Type)**

### Will budget cuts threaten the viability or future of your department beyond the next three years? (U.S. Respondents by Institution Type)



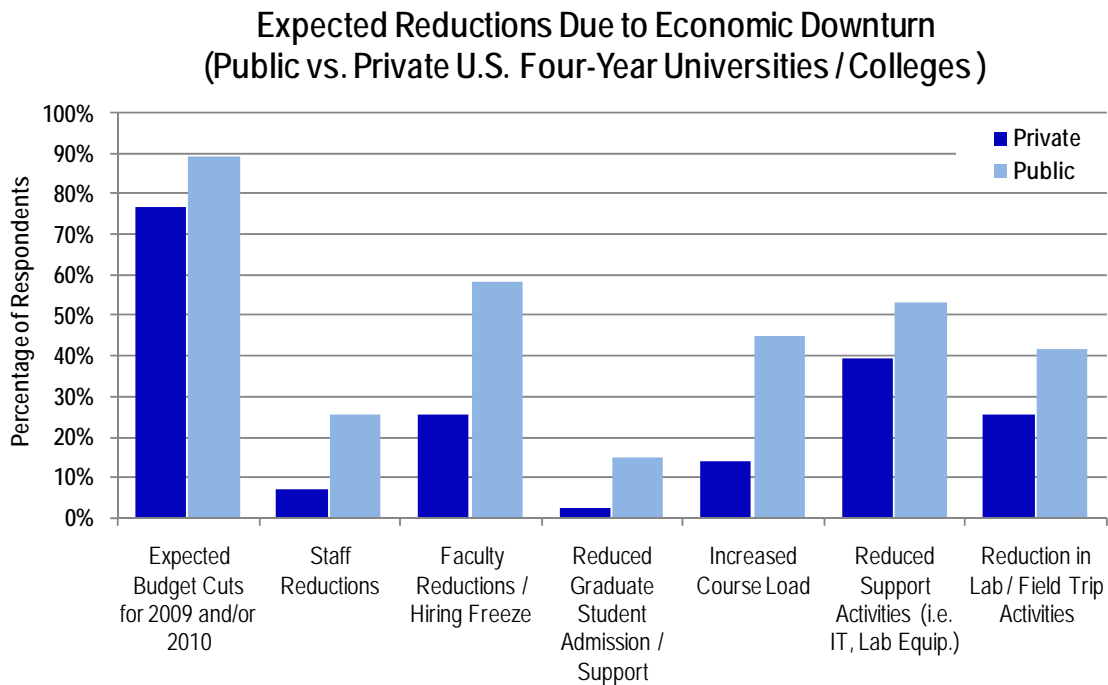
Source: AGI Geoscience Workforce Program

n=170

**Figure 15: Budget Cuts and Departmental Viability (U.S. Respondents by Institution Type)**

A higher percentage of public four-year colleges and universities expected reductions across all categories than private four-year colleges and universities. Public four-year institutions expected the greatest impacts in faculty reductions, reduced support activities, increased course loads, and reduced lab / field activities. Private four-year institutions reported the most reductions in support activities, lab / field trip activities, and faculty.

When compared to public four-year institutions, a slightly higher percentage of private four-year institutions expected budget cuts of up to 10 percent. However, a higher percentage of public four-year institutions expected budgets cuts of greater than 10% when compared to private four-year institutions (16% compared to 7%). Additionally a higher percentage of public four-year institutions than private four-year institutions reported that their department would be “definitely” or “immediately” threatened beyond the next three years (6% compared to 2%).

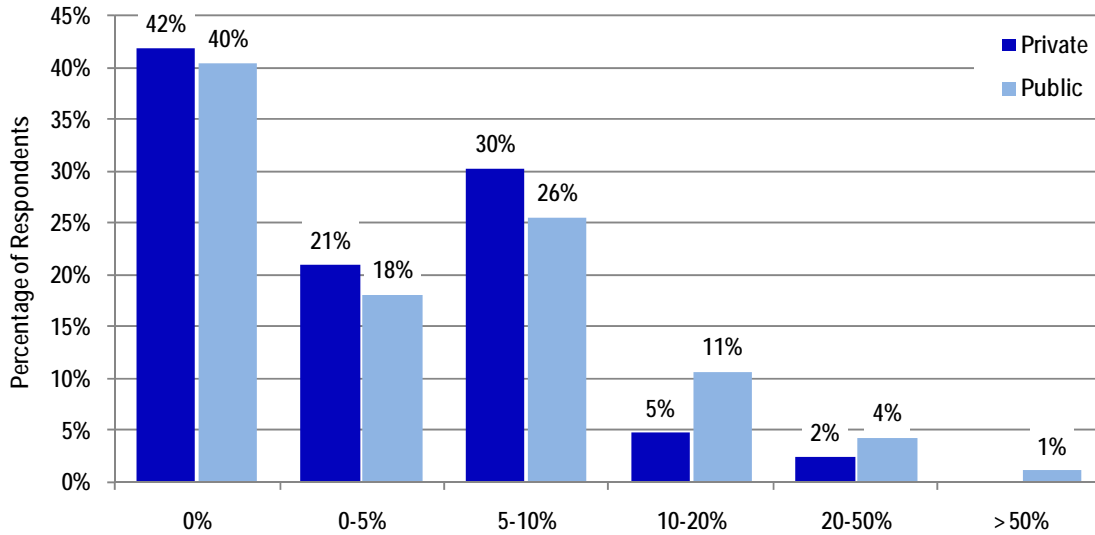


Source: AGI Geoscience Workforce Program

n=137

**Figure 16: Expected Reductions Due to Economic Downturn (Public vs. Private U.S. Four-Year Universities and Colleges)**

### Expected Budget Reductions in the Next 12 Months (Public vs. Private U.S. Four-Year Universities / Colleges)

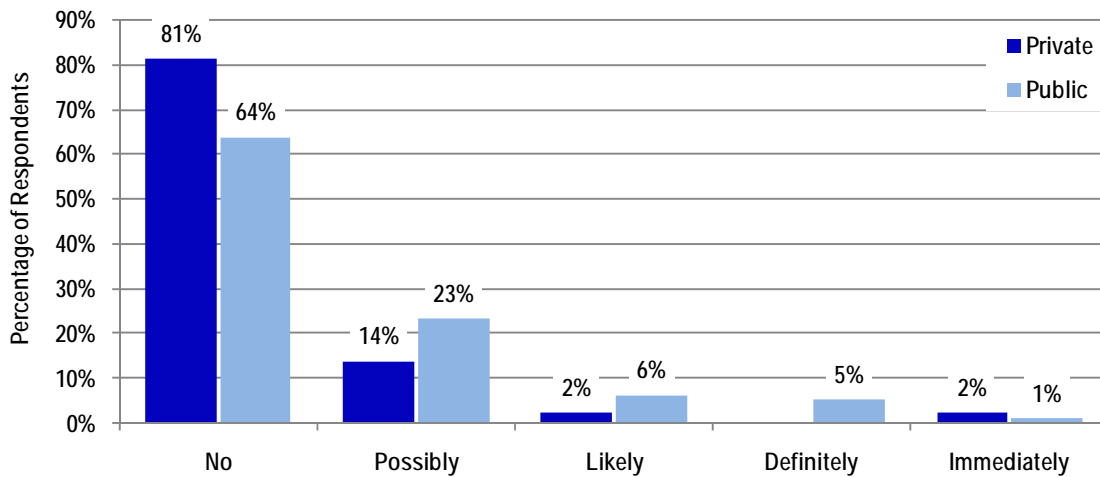


Source: AGI Geoscience Workforce Program

n=137

**Figure 17: Expected Budget Reductions in the Next 12 Months (Public vs. Private U.S. Four-Year Universities and Colleges)**

### Will budget cuts threaten the viability or future of your department beyond the next three years? (Public vs. Private U.S. Four-Year Universities / Colleges)



Source: AGI Geoscience Workforce Program

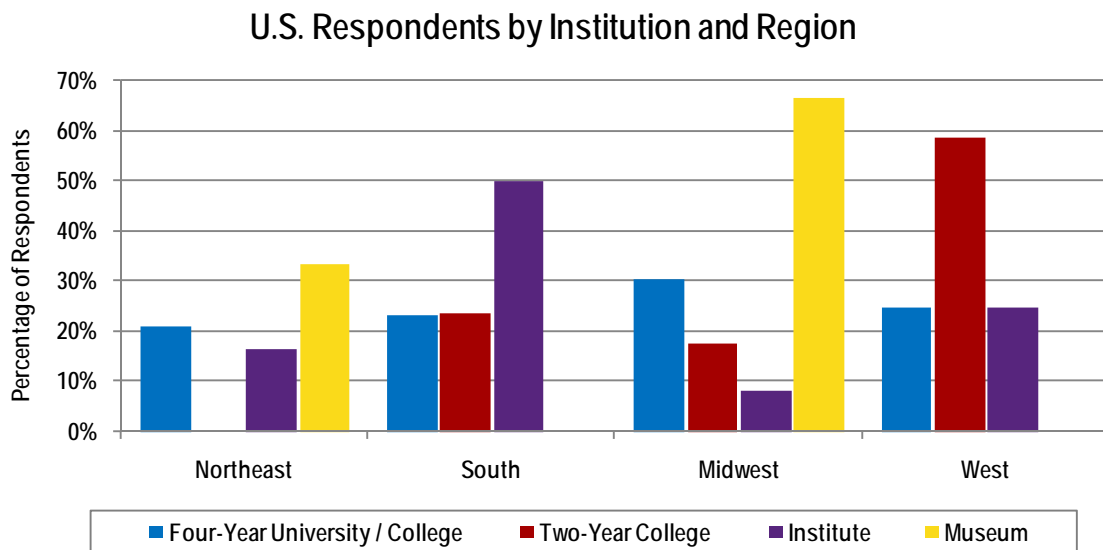
n=137

**Figure 18: Budget Cuts and Departmental Viability (Public vs. Private U.S. Four-Year Universities and Colleges)**



## Regional Trends in U.S. Survey Responses

In order to assess the regional impacts of the economic downturn on U.S. geoscience departments, we also analyzed the survey responses at a regional level. Survey respondents from geoscience departments at four-year universities and colleges were well represented across all regions, albeit there were slightly more departments reporting from the Midwest than from other regions. Respondents from two-year colleges were primarily located in the West. Half of the respondents from research institutes were located in the South, and the majority of respondents from museums were located in the Midwest.



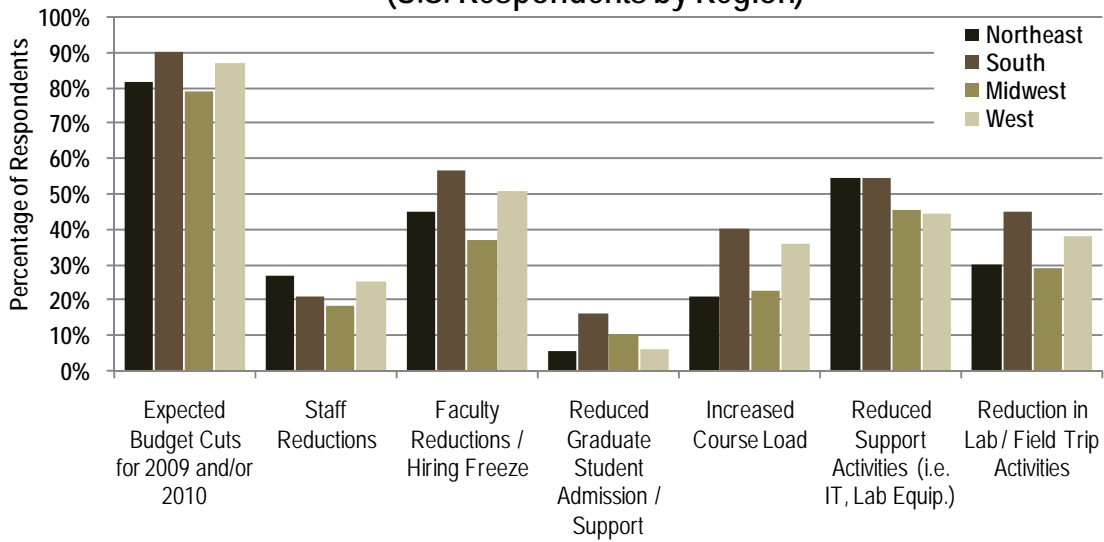
Source: AGI Geoscience Workforce Program

n=170

**Figure 19: Survey Responses by Institution Type (U.S. Respondents by Institution and Region)**

Similar to the previous analyses presented in this report, the expected impacts were reduced support activities and faculty reductions. A higher percentage of departments in the South expected increased course loads, faculty reductions, reduced support activities, and reduced lab / field trip activities than did institutions in other regions. Overall, there were a lower percentage of departments in the Midwest that expected reductions due to the economic downturn than departments in other regions.

### Expected Reductions Due to Economic Downturn (U.S. Respondents by Region)



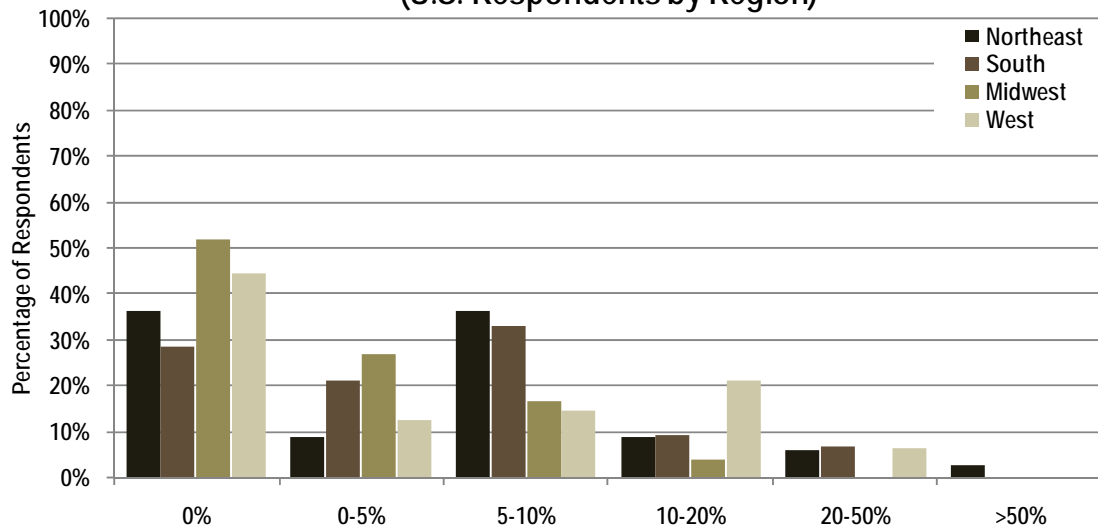
Source: AGI Geoscience Workforce Program

n=170

Figure 20: Expected Reductions Due to Economic Downturn (U.S. Respondents by Region)

Budget cuts over the next 12 months of greater than 10 percent were expected to impact departments in the West more than other regions. Furthermore, nine percent of departments in the Northeast and six percent of departments in the West reported that the budget cuts would “definitely” or “immediately” threaten the future of their departments.

### Expected Budget Reductions in the Next 12 Months (U.S. Respondents by Region)

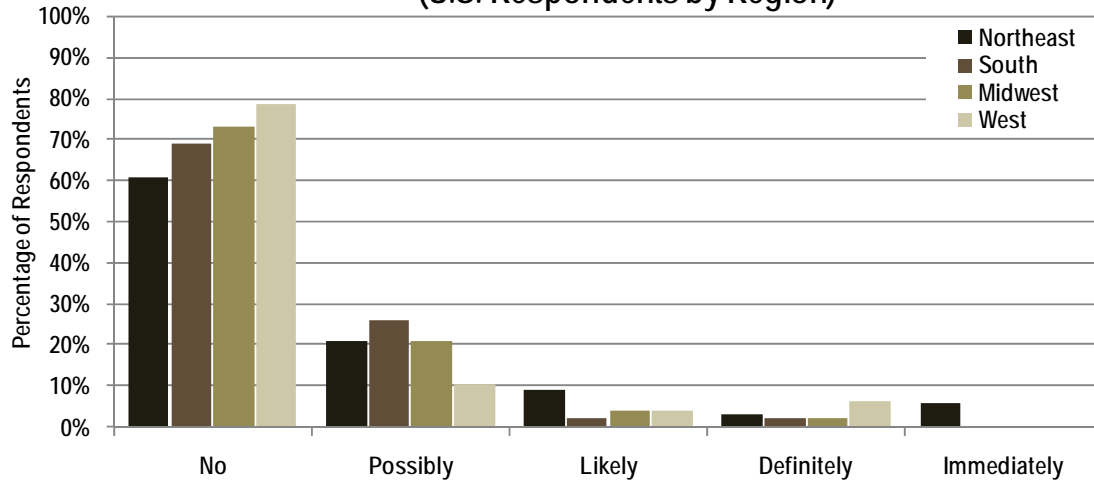


Source: AGI Geoscience Workforce Program

n=170

Figure 21: Expected Budget Cuts (U.S. Respondents by Region)

**Will budget cuts threaten the viability or future of your department beyond the next three years?  
(U.S. Respondents by Region)**



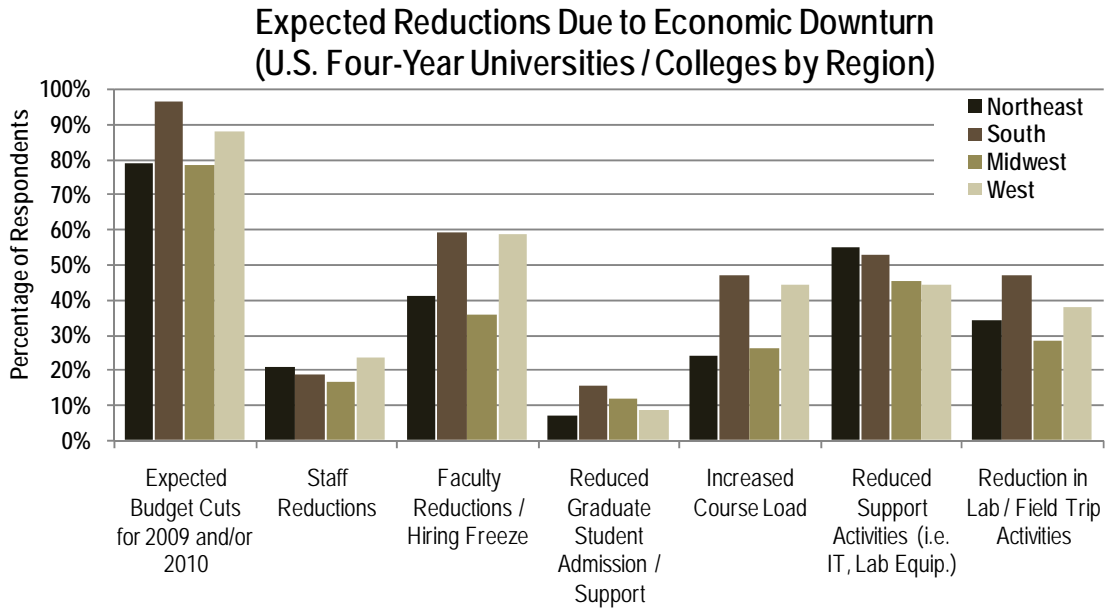
Source: AGI Geoscience Workforce Program

n=170

**Figure 22: Budget Cuts and Departmental Viability (U.S. Respondents by Region)**

## Regional Trends in U.S. Survey Responses by Institution Type

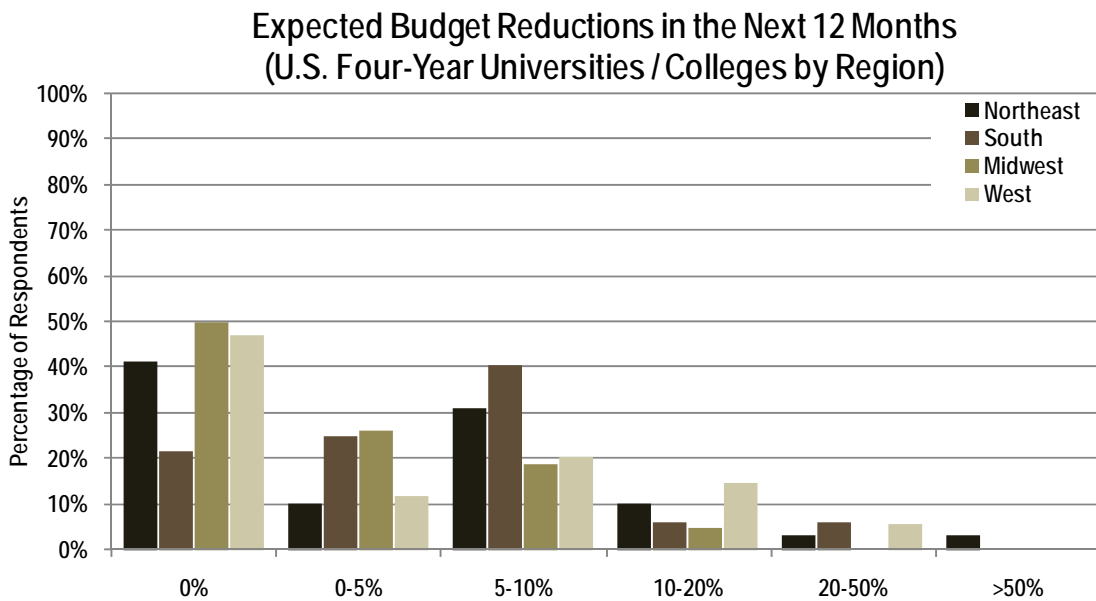
Overall, four-year institutions in the Midwest reported the least impact from the economic downturn whereas four-year universities and colleges in the South reported the greatest percentage of reductions for all regions. Four-year universities and colleges in the West were the second hardest impacted across most of the categories.



Source: AGI Geoscience Workforce Program

n=170

**Figure 23: Expected Reductions Due to Economic Downturn (U.S. Four-Year Universities and Colleges by Region)**



Source: AGI Geoscience Workforce Program

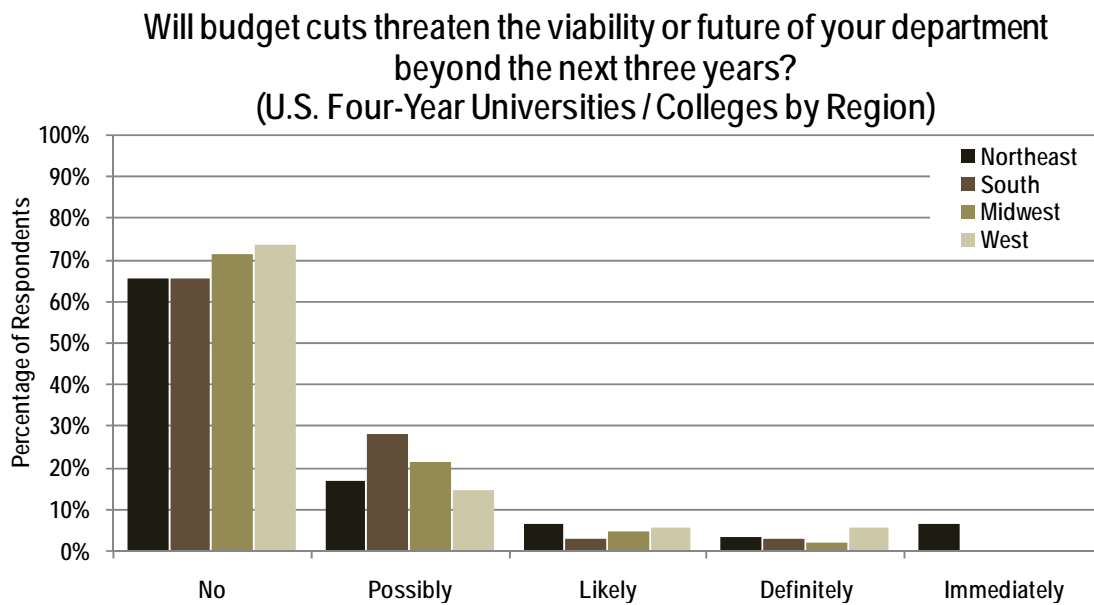
n=170

**Figure 24: Expected Budget Cuts (U.S. Four-Year Universities and Colleges by Region)**

Twenty-one percent of departments in the West and 17 percent of departments in the Northeast expected budget cuts over 10 percent within the next 12 months. However, most

budget cuts within the next 12 months were expected to be between 1 and 10 percent for all regions.

Seven percent of geoscience departments at four-year universities and colleges in the Northeast have reported that their departments were “immediately” threatened by the budget cuts. Six percent of departments at four-year institutions in the West and two to three percent of departments in the other regions reported that they were “definitely” threatened beyond the next three years due to the budget cuts.



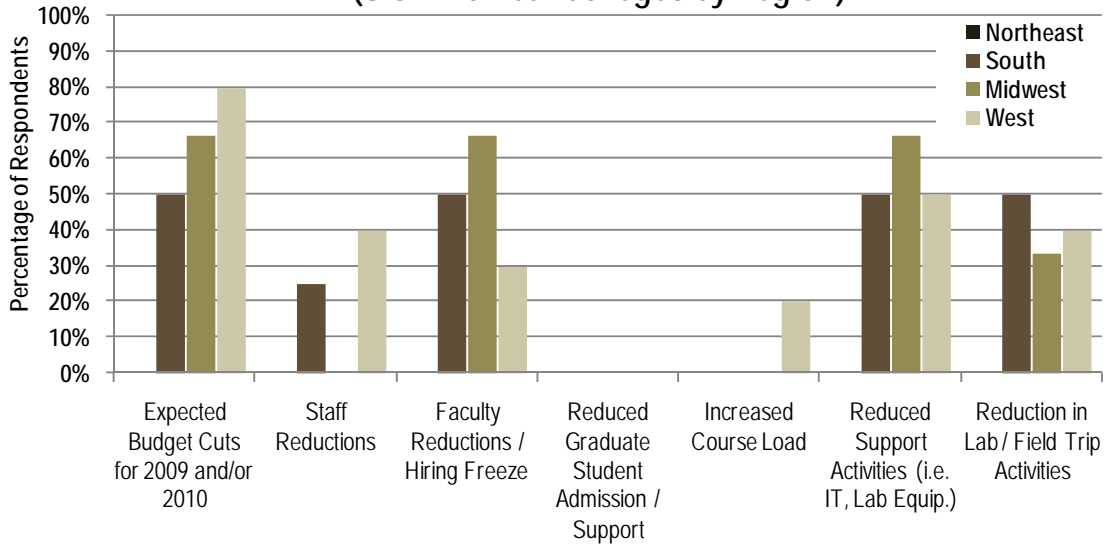
Source: AGI Geoscience Workforce Program

n=170

**Figure 25: Budget Cuts and Departmental Viability (U.S. Four-Year Universities and Colleges by Region)**

The spatial pattern of responses from two-year colleges was influenced by the low number of responses (17). No two-year colleges from the Northeast responded to the survey. Expected reductions for two-year colleges varied by region. A greater number of Midwestern two-year colleges expected reductions in faculty and in support activities than two-year colleges from other regions whereas a higher percentage of two-year colleges in the West expected the reductions in staff and increases in course loads than two-year colleges in other regions. Additionally, a higher percentage of two-year colleges in the South expected reductions in lab / field trip activities than two-year colleges in other regions.

### Expected Reductions Due to Economic Downturn (U.S. Two-Year Colleges by Region)



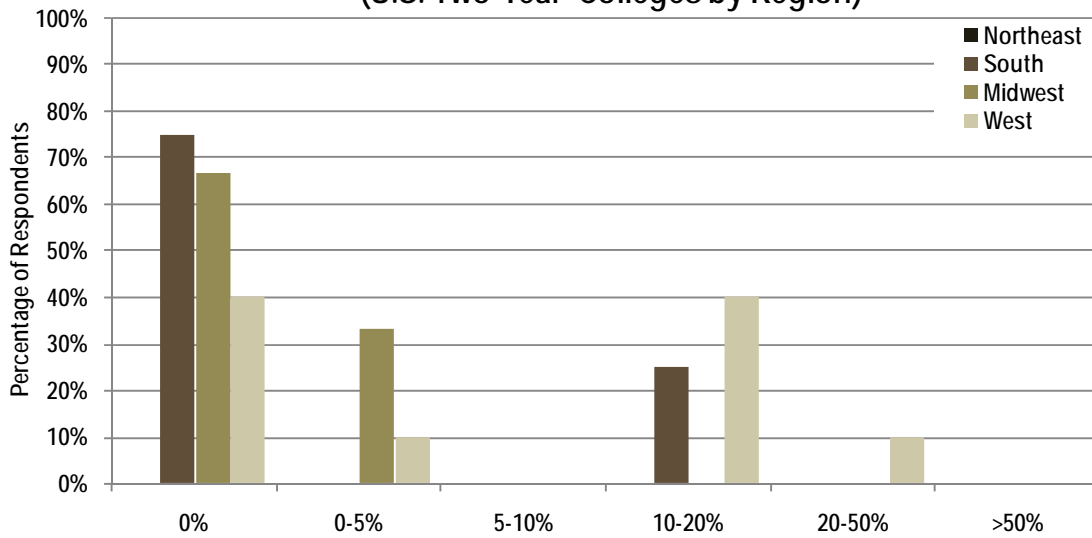
Source: AGI Geoscience Workforce Program

n=17

**Figure 26: Expected Reductions Due to Economic Downturn (U.S. Two-Year Colleges by Region)**

Geoscience departments at two-year colleges in the West expected the largest budget cuts of up to 50 percent for all regions, and 10 percent of these departments reported that they would “definitely” be threatened by these budget cuts beyond the next three years. In contrast, 25 percent of geoscience departments at two-year colleges in the South expected budget cuts of five to ten percent and 33 percent of those in the Midwest expected cuts of up to 5%.

### Expected Budget Reductions in the Next 12 Months (U.S. Two-Year Colleges by Region)

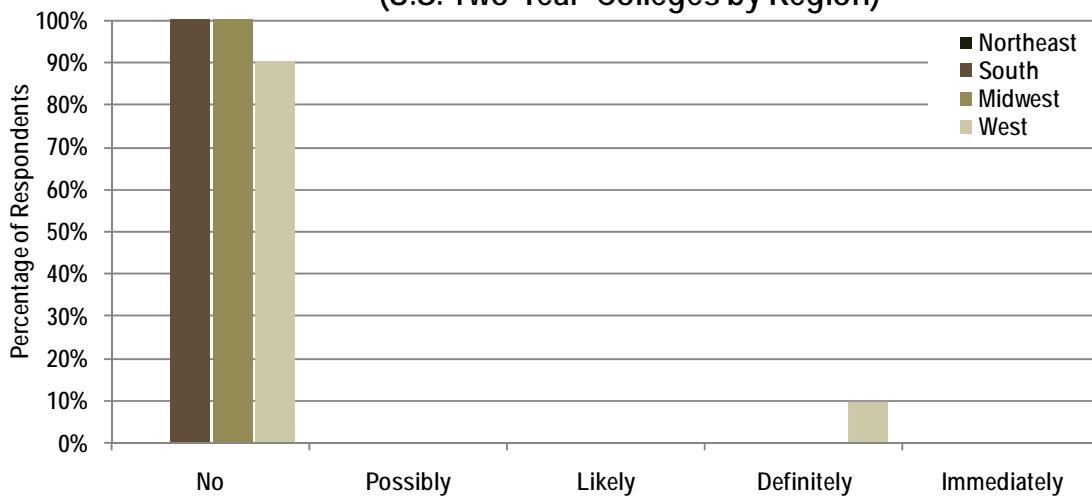


Source: AGI Geoscience Workforce Program

n=17

**Figure 27: Expected Budget Cuts (U.S. Two-Year Colleges by Region)**

### Will budget cuts threaten the viability or future of your department beyond the next three years? (U.S. Two-Year Colleges by Region)

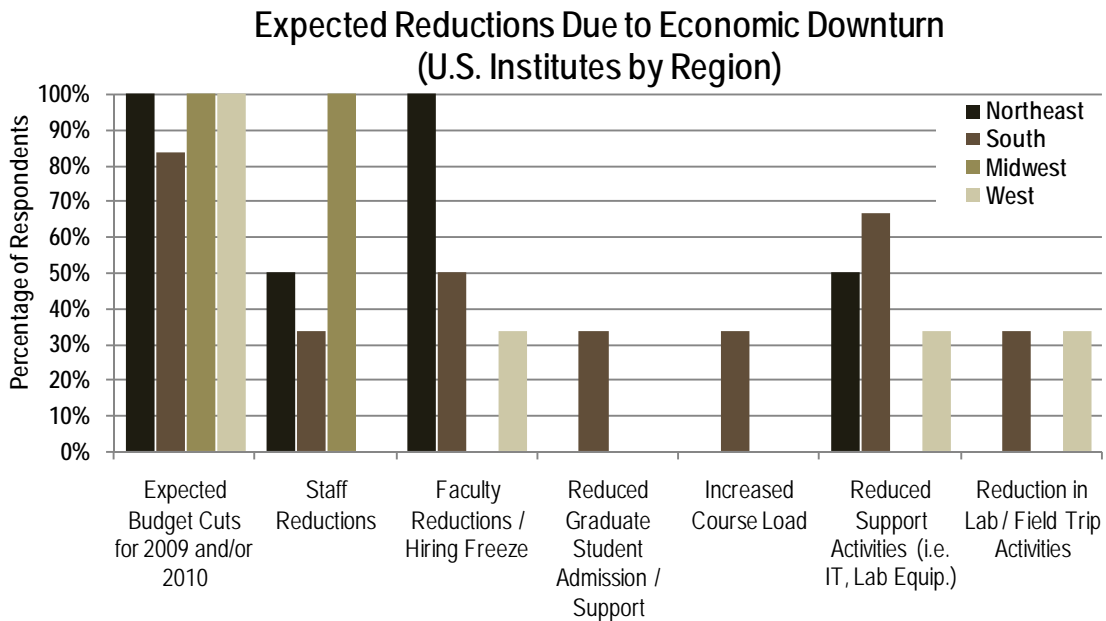


Source: AGI Geoscience Workforce Program

n=17

**Figure 28: Budget Cuts and Departmental Viability (U.S. Two-Year Colleges by Region)**

As with the two-year colleges, research institutes also had varied responses by region due to the low number of responses (14). All Northeastern and Midwestern research institutes expected budget cuts for 2009 and/or 2010, all Northeastern research institutes expected faculty reductions, and all Midwestern research institutes expected staff reductions. Furthermore, budget cuts within the next 12 months were expected to be greatest for those institutes in the Northeast. However, despite the budget cuts, with the exception of institutes in the Northeast, most research institutes did not feel that their departments were threatened by the impacts of the current economic downturn beyond the next three years.



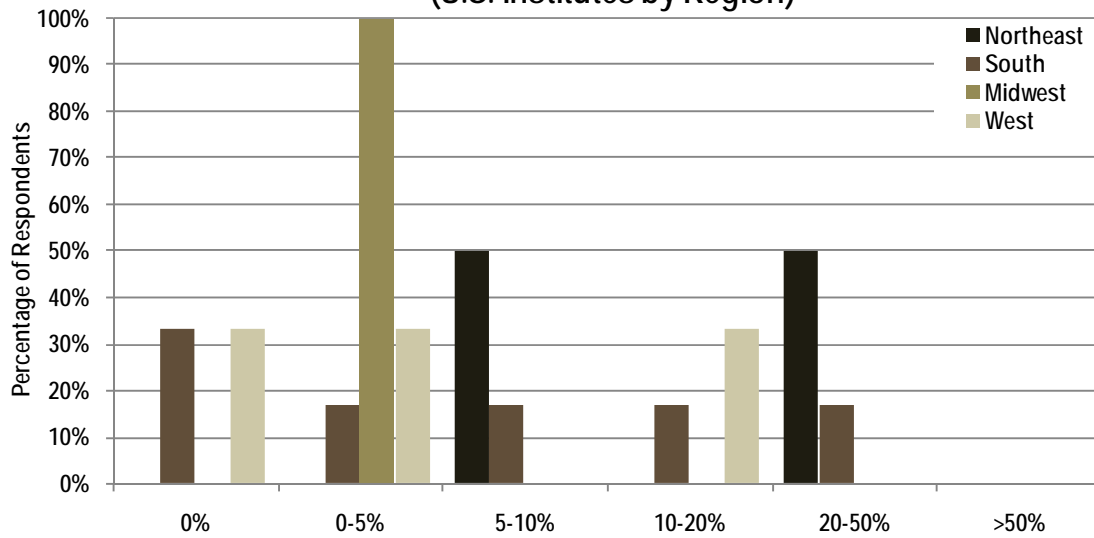
Source: AGI Geoscience Workforce Program

n=12

**Figure 29: Expected Reductions Due to Economic Downturn (U.S. Institutes by Region)**



### Expected Budget Reductions in the Next 12 Months (U.S. Institutes by Region)

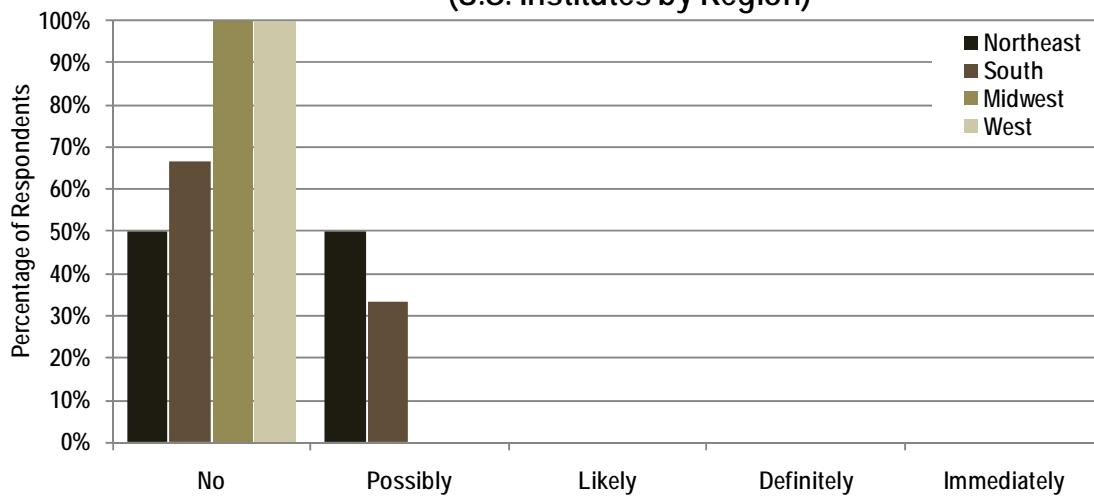


Source: AGI Geoscience Workforce Program

n=12

**Figure 30: Expected Budget Cuts (U.S. Institutes by Region)**

### Will budget cuts threaten the viability or future of your department beyond the next three years? (U.S. Institutes by Region)



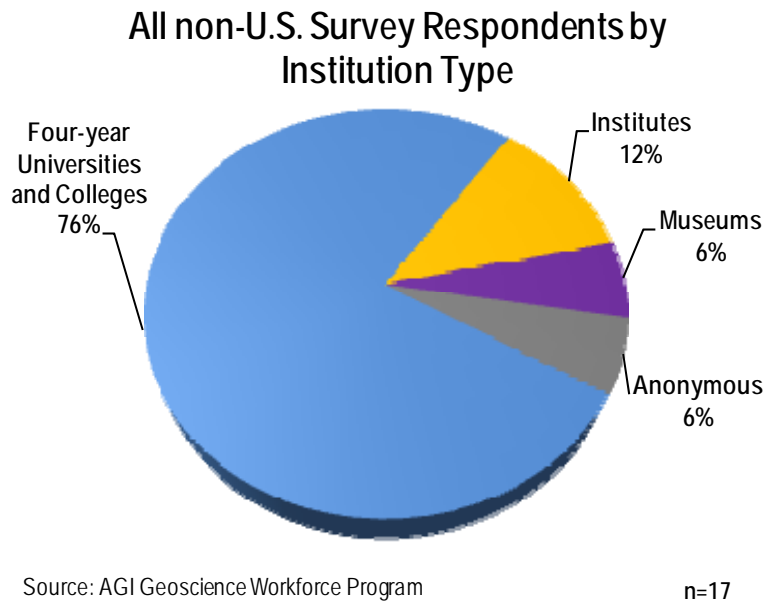
Source: AGI Geoscience Workforce Program

n=12

**Figure 31: Budget Cuts and Departmental Viability (U.S. Institutes by Region)**

## Non-U.S. Survey Responses

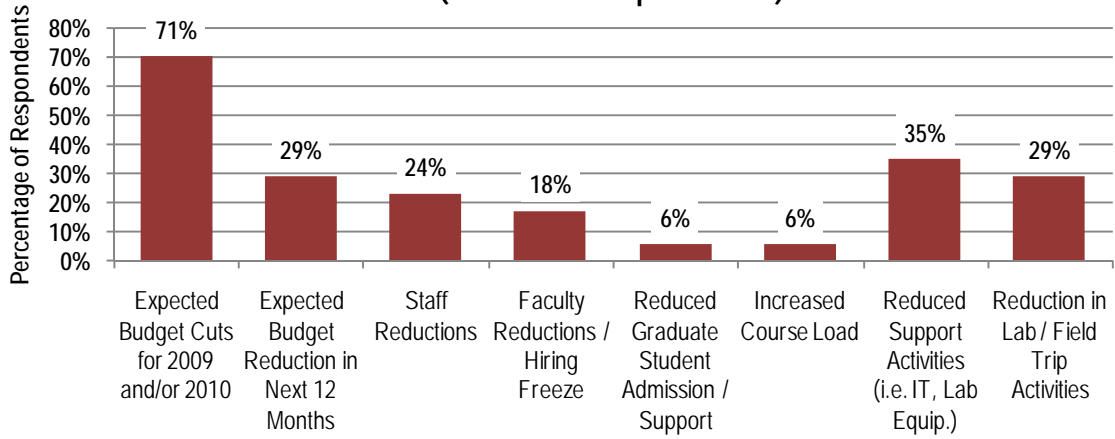
Geoscience departments from non-U.S. institutions were primarily from four-year universities and colleges (76%), and to a lesser extent from research institutes (12%) and museums (6%).



**Figure 32: Survey Responses by Institution Type (non-U.S. Respondents)**

Overall, non-U.S. geoscience departments reported less of an impact from the economic crisis than did U.S. geoscience departments. This was likely due to the 6 to 8 month lag between U.S. and non-U.S. impacts from the economic downturn. The greatest expected impact for non-U.S. departments was on reduced support activities, followed by reduction in lab / field trip activities. The majority of these departments (71%) reported that they expected budget cuts in 2009 and/or 2010. Furthermore, 12 percent of institutions reported expected budget cuts of 5 to 10 percent and 18 percent expected cuts of up to 10 percent over the next 12 months. Additionally, 24 percent of non-U.S. departments reported that they would “possibly” be threatened by the current budget cuts beyond the next three years.

### Expected Reductions Due to Economic Recession (Non-U.S. Respondents)

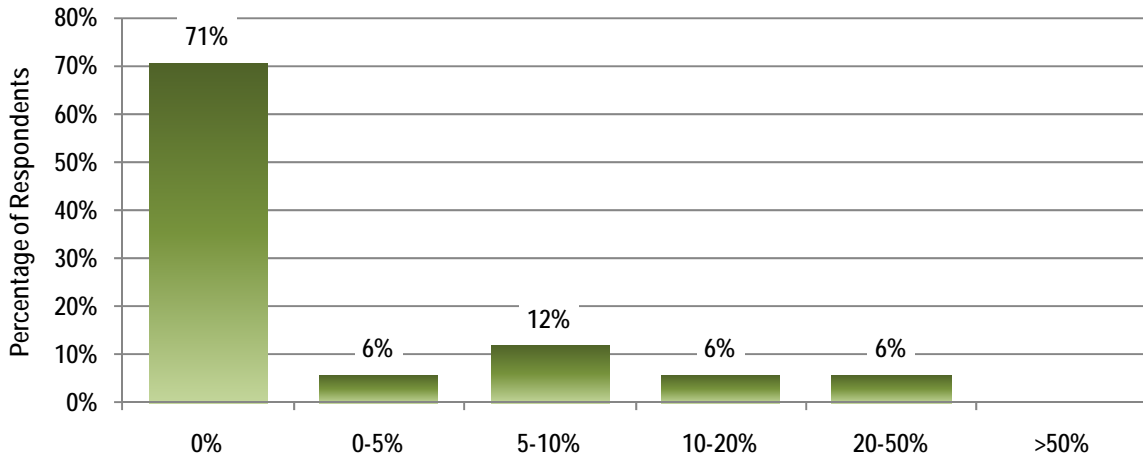


Source: AGI Geoscience Workforce Program

n=17

**Figure 33: Expected Reductions Due to Economic Downturn (non-U.S. Respondents)**

### Expected Budget Reduction in the Next 12 Months (Non-U.S. Respondents)

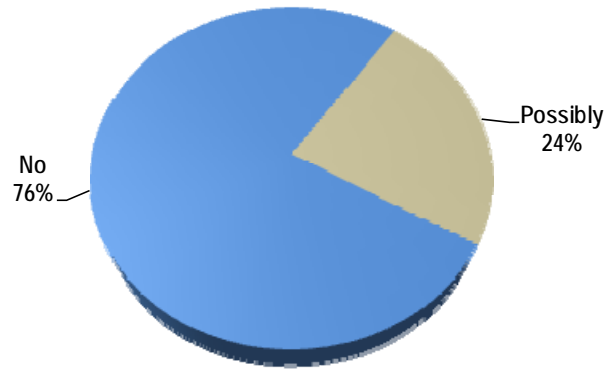


Source: AGI Geoscience Workforce Program

n=17

**Figure 34: Expected Budget Cuts (non-U.S. Respondents)**

Will budget cuts threaten the viability or future of your department beyond the next three years?  
(Non-U.S. Respondents)



Source: AGI Geoscience Workforce Program

n=17

**Figure 35: Budget Cuts and Departmental Viability (non-U.S. Respondents)**

## Survey Methodology

In order to obtain a broader perspective on the impact of the global economic downturn on geoscience departments, the American Geological Institute included an optional online survey as part of the 2009 Directory of Geoscience Departments update process. The survey consisted of five questions that pertained to impacts of the economic recession on geoscience departments, including budget cuts and reductions in personnel and support (i.e. IT, lab equipment, etc.). Participation in the survey was optional.

### Economic Survey Questions

1. Is your department/program facing budget reductions for 2009 and/or 2010? (Y/N)
2. By what PERCENT budget reduction do you expect to face within the next 12 months compared to your 2008 budget? (numeric entry)
3. What areas do you expect to be impacted by these budget issues?
  - Staff reductions
  - Faculty reductions/hiring freeze
  - Reduced Graduate Student Admission/Support
  - Increased course loads
  - Reduced support activities (e.g. IT, Lab Equipment)
  - Reduction of lab/field trip activitiesOther: (Text box entry)
4. Do you feel these cuts threaten the viability or the future of your department beyond the next 3 years? (Y/N)
5. Do you wish to share any other comments or concerns about the impact of the current economy on your program? (Text box entry)