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The National Geoscience Exit Survey: Mapping the Academic and Career Pathways of Geoscience Undergraduates

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Abstract

In 2011, the American Geological Institute (AGI) launched the first pilot of a standardized National Geoscience Exit Survey in collaboration with 32 geoscience university departments. The survey will be available to all U.S. geoscience programs at two- and four-year colleges and universities by the end of the 2011-2012 academic year, and will provide information about geoscience student academic pathways and career trajectories. The survey will also establish a cohort of geosciences degree recipients that will participate in a longitudinal survey to develop a long-term robust mapping of geosciences student career trajectories.

The National Geoscience Exit Survey collects demographic information, high school Earth science course enrollments, community college attendance (including geosciences courses, and degree conferral) to undergraduate and graduate degree types and disciplines. The survey also collects data on how degree recipients financed their education, when and why they chose to pursue a geoscience degree, and how they rate their field, research, and internship experiences. Additionally, degree recipients are asked to provide information about their future academic and/or career plans. Career trajectory information (e.g. industry, company, geographic location, salary and additional compensation, job search methods) is collected for degree recipients who are pursuing geoscience careers as well as graduates pursuing non-geoscience careers.

We explore the results for geoscience undergraduates as they pertain to their preparation for graduate school, and student career trajectories in academia and the workforce. Preliminary results indicate that the majority participants have experience field work (e.g. field camp, field courses, or courses with a field component), research, and/or have participated in a faculty member's research program. Nearly 25% of participants have presented their research either in a departmental setting or at a scientific conference. Only 32% of participants had an internship. Future academic and career trajectories for participants included graduate school (53%) and pursuit of a geoscience career (45%) with some overlap between those open to either graduate school or a career. Furthermore, 12% of participants already accepted job offers in geoscience occupations.

What Information is Collected?

Demographics:	Gender, race/ethnicity, citizenship
High school:	Earth science course-taking
Community college:	Attendance, geoscience course-taking, earning of an associate's degree, name of community college
University degrees:	Undergraduate and graduate degree types, fields and reasearch topics, time to degree completion
Financial aid:	Grants, loans, scholarships, student work study, teaching/research assistantships, other sources
Decision to pursue geoscience degree:	When the decision was made, what was the most important factor in making the decision
Field experiences:	Field camps, field courses, field experiences and the importance of these expereinces
Research experiences:	Number completed, Research with a faculty member, importance of these experiences
Internships:	Number completed, company name, importance of internship
Future Plans - Graduate School:	Applying to or accepted offer, university name, degree pursuing (type and field)
Future Plans - Geoscience Career:	Industry, company, geographic location, salary and additional compensation, job search methods
Future Plans - Non-Geoscience Career:	Industry, company, geographic location, salary and additional compensation, job search methods, and why graduate is pursuing a non-geoscience career.

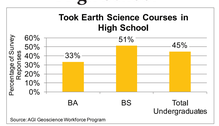
Who Participated?

BA	24
BS	43
Total Undergraduate	67
MA/MS	23
PhD	2
Total Graduate (MA/MS/PhD)	25

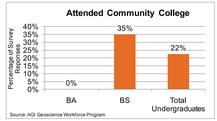
Undergraduate Major	BA	BS
Environmental Science	6	1
Geochemistry	0	1
Geological / Geophysical Engineering	7	0
Geology	20	20
Geophysics / Seismology	0	1
Math	0	1
Meteorology	7	0
None specified	3	0

Background

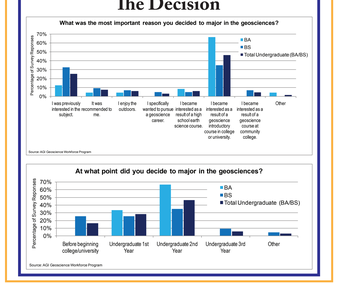
High School



Community College



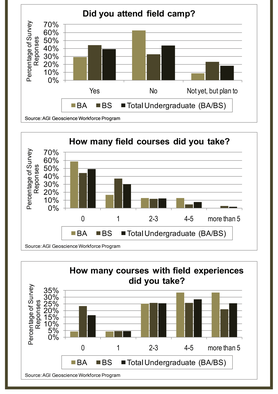
The Decision



Preparation

Going to University...

Field Experiences

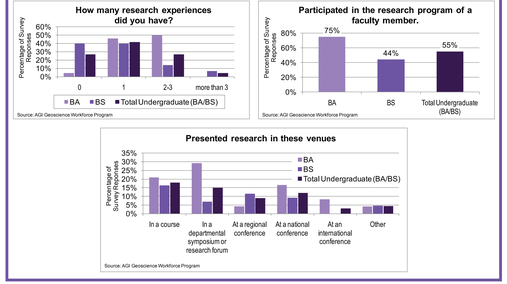


Internships

In what business sectors did undergraduates take internships?

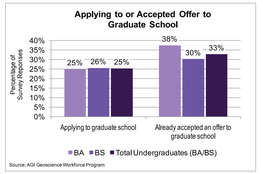
BA	BS
Education	Environmental
Federal Government	Federal Government
	Media
	Mining
	Oil & Gas

Research Experiences



Future Plans

Graduate School



Trajectories of Undergraduates who have accepted offers to attend graduate school.

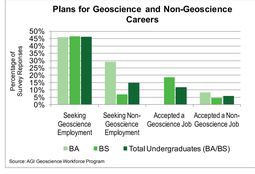
B.A.

	Degree type	Discipline
1	Professional	Law
4	PhD	Geoscience
4	MS	3 - Geoscience ; 1 - non-Sci. & Eng.

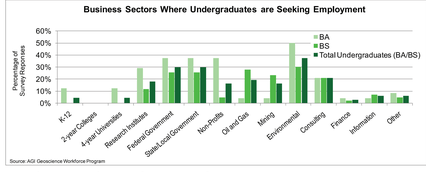
B.S

	Degree type	Discipline
12	MS	Geoscience
1	MA	Geoscience

Entering the Workforce...



For those undergraduates who accepted a job upon graduation, nearly half used their own networks to find the job, and nearly 20% found the job either through online resources or a faculty referral.



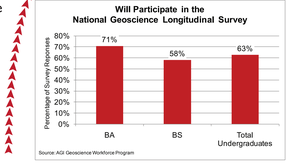
Why do geoscience undergraduates seek work outside of the geosciences upon graduation?

Perspectives from graduating geoscience majors:

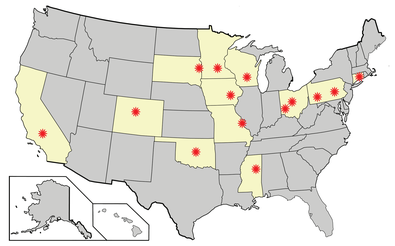
"Few jobs that look for just a BA."
"I don't want to go to graduate school yet."
"There is little work in the geoscience field right now and it is a competitive job market."

How do we know if graduates leave or re-enter the geoscience academic/career pathway?

Mapping Career Trajectories



Participating Departments



Department of Geology	California State University - Bakersfield	CA
Department of Geology & Geological Engineering	Colorado School of Mines	CO
Center for Integrative Geosciences	University of Connecticut	CT
Department of Geoscience	University of Iowa	IA
Department of Geology	Carleton College	MN
Department of Earth & Planetary Sciences	Washington University in St. Louis	MO
Department of Geosciences	Mississippi State University	MS
Department of Geosciences	North Dakota State University	ND
Department of Geology	Miami University	OH
Department of Geology	University of Dayton	OH
School of Geology & Geophysics	University of Oklahoma	OK
Department of Geology	Brywn Mawr College	PA
Department of Geoscience	Indiana University of Pennsylvania	PA
Department of Geology & Geophysics	University of Wisconsin - Madison	WI

Want to get involved?

The second pilot of the National Geoscience Exit Survey will be in Spring 2012.

If you would like to be involved in this survey effort, please either leave your card, or email Leila Gonzales at lmg@agiweb.org.