How are We Preparing Geoscience Graduates for Entering the Workforce?

Carolyn Wilson
American Geosciences Institute
Race/Ethnicity and Citizenship

Highest education level of a parent/guardian of graduates

- Graduates with a BA/BS
  - Graduate or Professional degree: 30%
  - Bachelor's degree: 34%
  - Some college experience: 18%
  - No college experience: 12%
  - Not applicable/Unknown: 6%

- Graduates with a MA/MS
  - Graduate or Professional degree: 50%
  - Bachelor's degree: 30%
  - Some college experience: 10%
  - Not applicable/Unknown: 5%

- Graduates with a Ph.D.
  - Graduate or Professional degree: 54%
  - Bachelor's degree: 18%
  - Some college experience: 10%
  - No college experience: 13%
  - Not applicable/Unknown: 5%

Resident: 71%
How Does this Compare Nationally?

Figure 2.7: Underrepresented Minority Enrollments at Two-Year Colleges

AGI Geoscience Workforce Program; Data derived from NCES Digest of Education Statistics, 2014

Figure 3.10: Underrepresented Minority Enrollments at Four-Year Institutions

AGI Geoscience Workforce Program; Data derived from NCES Digest of Education Statistics, 2014
Chosen Degree Fields

Bachelor's Degree Graduates
- Geology: 65%
- Earth Sciences: 7.5%
- Environmental Sciences: 5.5%
- Geological/Geophysical Engineering: 4.4%
- Geophysics and Seismology: 4%
- Geography/GIS: 2.4%

Master's Degree Graduates
- Geology: 19.7%
- Petroleum Geology: 10.2%
- Geological/Geophysical Engineering: 5.5%
- Geochemistry: 13.4%
- Geophysics & Seismology: 13.4%
- Environmental Geosciences: 3.9%
- Hydrology and Water Resources: 10.2%
- Petrology: 4.7%
- Marine Sciences/Oceanography: 3.1%
- Other: 3.1%
- Geo-related Engineering: 2.4%
- Atmospheric Sciences: 2.4%
- Paleontology: 2.4%
- Earth Science: 1.6%
- Geography/GIS: 0.8%

Doctoral Degree Graduates
- Geology: 14.3%
- Marine Sciences/Oceanography: 11.4%
- Planetary Sciences: 8.6%
- Hydrology & Water Resources: 14.3%
- Paleontology: 5.7%
- Earth Sciences: 7.1%
- Geophysics & Seismology: 20%
- Environmental Sciences: 4.3%
- Atmospheric Sciences/Meteorology: 2.9%
- Environmental Geosciences: 2.9%
- Petrology: 2.9%
- Geo-related Engineering: 1.4%

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Connecting Earth, Science, and People
Education Background

Graduates who took an earth science course in high school

- BA/BS: 51% Took, 49% Did Not
- MA/MS: 55% Took, 45% Did Not
- PhD: 41% Took, 59% Did Not

Graduates who attended a two-year college for at least 1 semester and took a geoscience course

- BA/BS: 67% Did Not Attend, 33% Attended, 14% Took a Course, 19% Did Not Take
- MA/MS: 77% Did Not Attend, 23% Attended, 12% Took a Course, 11% Did Not Take
- PhD: 84% Did Not Attend, 16% Attended, 13% Took a Course, 3% Did Not Take

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Experiences in Geoscience Departments

Number of internships held by graduating students

- BA/BS
- MA/MS
- Ph.D.

Percentage of Graduates

Number of Internships

0 1 2 3 4+

0% 10% 20% 30% 40% 50% 60% 70%
Future Plans, Graduate Degree

**Students graduating with an undergraduate degree**

- **Geology**: 41%
- **Geophysics & Seismology**: 8%
- **Marine Sciences/Oceanography**: 5%
- **Earth Sciences**: 5%
- **Hydrology and Water Resources**: 7%
- **Geological/Geophysical Engineering**: 3%
- **Atmospheric Sciences/Meteorology**: 3%
- **Biological Sciences**: 2%
- **Planetary Sciences**: 2%
- **Environmental Sciences**: 2%
- **Petroleum Geology**: 2%
- **Other**: 2%
- **Civil Engineering**: 1%
- **Geo-Related Engineering**: 1%
- **Geography/GIS**: 1%
- **Petrology**: 1%
- **Law**: 1%
- **Soil Sciences**: 1%
- **Business**: 1%
- **Medical Sciences**: 1%

**Possible Future Graduate Degree**

- **MA/MS**: 70%
- **Ph.D.**: 25%
- **Undecided**: 3%
- **JD**: 2%
- **DNP**: 0.54%

**Students graduating with a graduate degree**

- **Geology**: 36%
- **Geophysics & Seismology**: 12%
- **Geological/Geophysical Engineering**: 12%
- **Other**: 8%
- **Paleontology**: 8%
- **Earth Sciences**: 4%
- **Environmental Sciences**: 4%
- **Geochemistry**: 4%
- **Geography**: 4%
- **Marine Sciences/Oceanography**: 4%
- **Petrology**: 4%

**Possible Future Graduate Degree**

- **Ph.D.**: 81%
- **MA/MS**: 19%
2015 graduates that found employment in the geosciences:
- 10% bachelor’s graduates
- 40% master’s graduates
- 59% doctoral graduates

2015 graduates still seeking work in the geosciences:
- 51% bachelor’s graduates
- 40% master’s graduates
- 39% doctoral graduates

Future Plans, Employment in the Geosciences

Graduates with a BA/BS
- Environmental Services: 40%
- Oil and Gas: 16%
- Federal Government: 11%
- Information Services: 7%
- K-12 Education: 3%
- Nonprofit/NGO: 4%
- State or Local Government: 4%
- Agriculture/Forestry/Fishery: 2%
- Finance: 2%
- Research Institute: 2%

Graduates with a MA/MS
- Environmental Services: 13%
- Oil and Gas: 67%
- 4-Year University: 4%
- Mining: 4%
- Research Institute: 4%
- State or Local Government: 4%
- Construction: 2%
- Nonprofit/NGO: 2%

Graduates with a Ph.D.
- Research Institute: 20%
- Oil and Gas: 15%
- Federal Government: 12%
- 4-Year University: 51%
- Nonprofit/NGO: 2%

- Undergrads: 31
- Graduate: 27
Marine Science Graduates

Quantitative Courses Taken by Marine Science Graduates

Undergraduates
Graduate Students

- College Algebra
- Statistics
- Calculus I
- Calculus II
- Calculus III
- Linear Algebra
- Differential Equations
- Quantitative/Computational Methods
Marine Science Graduates

Marine Science Graduates that Had Other Field Experiences

- Undergraduates
- Graduate Students

Number of Field Experiences

<table>
<thead>
<tr>
<th>Number</th>
<th>Undergraduates</th>
<th>Graduate Students</th>
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<td>6+</td>
<td>40%</td>
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</tbody>
</table>
Marine Science Graduates that Participated in Research

- Undergraduates
- Graduate Students

Number of Research Experiences

0% 10% 20% 30% 40%
0 1 2 3 4 5 6+

Marine Science Graduates
Marine Science Graduates that Participated in an Internship

- Undergraduates: 40% Yes, 60% No
- Graduate Students: 10% Yes, 90% No
Marine Science Graduates

Plans After Graduation

- 22% of Undergraduates and 11% of Graduate Students plan to pursue another degree.
- Accepted a Job in the Geosciences?
  - 25% of Undergraduates
  - 44% of Graduate Students
- Still Seeking Employment in the Geosciences?
  - 44% of Undergraduates
  - 52% of Graduate Students

Industries Hiring Marine Science Graduates

- Environmental Services
- Federal Government
- K-12 Education
- Other Education Services
- Research Institute
- 4-Year Universities
- Oil and Gas Industry
So For the Past Three Years...
Thanks!

- Please contact me, cwilson@americangeosciences.org, if you would like to participate in the Exit Survey.

- Check out our website for more information:
  - www.americangeosciences.org/workforce
    - Recent reports
    - Geoscience Currents
    - Career development resources