Native Americans Among Degree Recipients in Physics and Geoscience

Roman Czujko

The number of bachelor’s degrees awarded in the US continues to increase. About 1.58 million people earned bachelor’s degrees in academic year 2007-08 (See Table 1). Of them, fewer than 10,800 were Native Americans. However, this small number did represent a significant increase (40%) from the 7,700 Native Americans who earned bachelor’s degrees a decade earlier.

Women continued to increase their participation in postsecondary education and earned 57% of all bachelor’s degrees in 2008. Women comprised nearly 61% of all bachelor’s degree recipients who were Native Americans.

Table 1

<table>
<thead>
<tr>
<th>Native Americans among bachelor’s degree recipient in 2008 and 1998.</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
</tr>
<tr>
<td>Number of Bachelor’s All Fields</td>
</tr>
<tr>
<td>Change ’98 to ’08</td>
</tr>
<tr>
<td>2008</td>
</tr>
<tr>
<td>------</td>
</tr>
<tr>
<td>All Degree Recipients</td>
</tr>
<tr>
<td></td>
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<tr>
<td></td>
</tr>
<tr>
<td>Native Americans</td>
</tr>
<tr>
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<td></td>
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</tbody>
</table>

While the number of Native Americans who earn a bachelor’s degree is small, it has increased by about 40% over the last decade.
Focus on Native Americans in Physics & Geoscience

Table 2

Native Americans among bachelor’s degree recipients in selected fields in 2008.

<table>
<thead>
<tr>
<th>Degree Field</th>
<th>Native Americans</th>
<th>All Students</th>
<th>Native Americans per 1,000 bachelor’s</th>
</tr>
</thead>
<tbody>
<tr>
<td>Business &amp; Mgmt</td>
<td>2,102</td>
<td>344,892</td>
<td>6.1</td>
</tr>
<tr>
<td>Education</td>
<td>996</td>
<td>124,846</td>
<td>8.0</td>
</tr>
<tr>
<td>Psychology</td>
<td>637</td>
<td>92,966</td>
<td>6.9</td>
</tr>
<tr>
<td>Biological Sciences</td>
<td>508</td>
<td>82,387</td>
<td>6.2</td>
</tr>
<tr>
<td>Engineering</td>
<td>456</td>
<td>86,048</td>
<td>5.3</td>
</tr>
<tr>
<td>Computer Science</td>
<td>221</td>
<td>38,916</td>
<td>5.7</td>
</tr>
<tr>
<td>Chemistry</td>
<td>80</td>
<td>11,829</td>
<td>6.8</td>
</tr>
<tr>
<td>Mathematics</td>
<td>73</td>
<td>15,840</td>
<td>4.6</td>
</tr>
<tr>
<td>Geosciences</td>
<td>28</td>
<td>4,313</td>
<td>2.6</td>
</tr>
<tr>
<td>Physics</td>
<td>22</td>
<td>4,875</td>
<td>2.0</td>
</tr>
<tr>
<td>Bachelor’s across all fields</td>
<td>10,768</td>
<td>1,579,955</td>
<td>6.8</td>
</tr>
</tbody>
</table>

For every 1,000 Native American who earned a bachelor’s degree in 2008, only two did so in physics.

AIP Statistical Research Center compiled data collected by the NCES.

http://www.aip.org/statistics

Table 2 provides the number of Native Americans who earned bachelor’s degrees in selected fields in academic year 2007-08 and compares those to the total number of degrees awarded in those fields. Of the selected fields included in Table 2, Native Americans are more likely than other students to major in education and less likely to major in physics and mathematics than any of the other fields listed in the table.
Over the last dozen years, about 49,000 bachelor’s degrees were awarded in physics and in geosciences. Native Americans earned 246 physics and 342 geoscience bachelor’s during that time period.

Compared to geoscience, we find that far fewer Native Americans earned bachelor’s degrees in physics a dozen years ago. However, the number has increased slowly and during the last three years approximately the same number of Native Americans earned bachelor’s degrees in both physics and geosciences.

Table 3

<table>
<thead>
<tr>
<th>Three-Year Totals</th>
<th>Physics</th>
<th>Geoscience</th>
</tr>
</thead>
<tbody>
<tr>
<td>2006 through 2008</td>
<td>78</td>
<td>80</td>
</tr>
<tr>
<td>2003 through 2005</td>
<td>70</td>
<td>80</td>
</tr>
<tr>
<td>2000 through 2002</td>
<td>52</td>
<td>104</td>
</tr>
<tr>
<td>1996 through 1998</td>
<td>46</td>
<td>78</td>
</tr>
<tr>
<td>Total 1996 through 2008</td>
<td>246</td>
<td>342</td>
</tr>
</tbody>
</table>

This table does not include academic year 1999 for which minority data are unavailable.

AIP Statistical Research Center compiled data collected by the NCES.

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Native Americans have earned 40% more bachelor’s degrees in geoscience during the last dozen years combined than they did in physics.
In academic year 2005-06, 45,596 PhDs were awarded across all fields. Of them, only 118 were earned by Native Americans. About 30% of Native Americans who earned PhDs did so in education, which accounts for fewer than 15% of all PhDs awarded.

Native Americans earned about 2.6 out of every 1,000 PhDs awarded in the US in 2006. As low as this rate is, it is even lower in physics. Over the last 30 academic years combined only 44 Native Americans earned physics PhDs. During those three decades, a total of more than 35,400 physics PhDs were awarded. In short, Native Americans earned about 1.25 out of every 1,000 physics PhDs that were awarded.
Geoscience is a smaller PhD field than physics. Over the last three decades, slightly more than 22,000 geoscience PhDs were awarded. Of them, 55 were earned by Native Americans or about 2.5 out of every 1,000 geoscience PhDs. In other words, Native Americans earned PhDs in geoscience at about the same rate that they earned PhDs across all fields. Despite the small numbers, Native Americans were actually twice as likely to earn PhDs in geoscience as they were in physics.

**Figure 2**

Native Americans earning geoscience PhDs by sex for each 6-year period from 1977 through 2006.

<table>
<thead>
<tr>
<th></th>
<th>Males</th>
<th>Females</th>
</tr>
</thead>
<tbody>
<tr>
<td>2001-2006</td>
<td>7</td>
<td>4</td>
</tr>
<tr>
<td>1995-2000</td>
<td>12</td>
<td>6</td>
</tr>
<tr>
<td>1989-1994</td>
<td>12</td>
<td>3</td>
</tr>
<tr>
<td>1983-1988</td>
<td>5</td>
<td>2</td>
</tr>
<tr>
<td>1977-1982</td>
<td>4</td>
<td>0</td>
</tr>
</tbody>
</table>

During the last 30 years combined, only 55 geoscience PhDs were earned by Native Americans of whom 40 were men and 15 were women.

http://www.aip.org/statistics
Additional Reading

For additional information on the education trends within the American Indian community, we recommend that readers go to the National Indian Education Study which is available from the National Center for Education Statistics at: http://nces.ed.gov/nationsreportcard/nies/

Methodology

The bachelor’s data in this focus on were all compiled from the Integrated Postsecondary Education Data System (IPEDS). IPEDS is the core postsecondary education data system for the National Center for Education Statistics (NCES) of the U.S. Department of Education. IPEDS is a comprehensive system built around a series of interrelated surveys that collect data on students, faculty members, finances, libraries, etc. These surveys are conducted at the institutional level, that is, one person or office reports data for the entire institution. In the case of the bachelor’s data used for this report, someone at the institution provided all of the data by sex, ethnicity and subject of degree. IPEDS is available as an on-line resource. To learn more, see http://nces.ed.gov/ipeds

The PhD data in this focus on were all compiled from WebCASPAR, the integrated science and engineering resources data system maintained by the National Science Foundation. WebCASPAR emphasizes PhDs in science and engineering. However, it does include data on non-science and on other degree levels. The data on PhD recipients in WebCASPAR are collected from individuals who report on their own gender and race as well as categorizing the field of their degree. WebCASPAR is an on-line resource. To learn more about this important data resource, see https://webcaspar.nsf.gov/

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