African Americans have made great strides in doctoral degree completion over the past decade, according to the 2006 Survey of Earned Doctorates (National Science Foundation [NSF], 2007). The number of African American doctoral recipients increased 27% from 1996 to 2006; in this same period, the total number of Ph.D.s conferred by all U.S. universities grew only 8%. Even more encouraging is that the number of African Americans who received doctorates in science and engineering (S&E) fields more than doubled over the past two decades, according to the National Science Board's *Science and Engineering Indicators* report (National Science Board, 2008). While all types of graduate schools made great efforts to increase graduate enrollment and degree success for African American students, particular attention should be paid to the role that Historically Black Colleges and Universities (HBCUs) have made to raise the number of African American doctoral degree holders.

HBCUs were founded in the late 19th and early 20th centuries with the expressed purpose of providing postsecondary education opportunities to African Americans who had been denied the chance to attend many predominately White colleges and universities (AAUP, 2007). Collectively, the 99 Historically Black institutions (87 four-year public and private colleges and universities, 10 community colleges, and 2 two-year private colleges) currently enroll more than 312,000 students (including 31,000 students in post-baccalaureate programs) and employ over 20,000 faculty members (NCES, 2007a & 2007d). These institutions represent only 4% of all colleges and universities in the U.S., but they account for nearly one-quarter of the African American bachelor's degree recipients (Redd, 2000).

In their early years, most HBCUs provided education at the undergraduate and master's degree levels, and the success of African American graduates from these institutions has been very well chronicled. A report from the USA Group Foundation (Redd, 2000) found that African American bachelor's degree recipients generally have been just as successful in employment and are just as likely to attend graduate/professional schools as those from other colleges and universities.

However, since 1996 more HBCUs have begun to offer doctoral programs as well. In 1996, fewer than one-quarter of the 87 four-year public and private HBCUs awarded doctorates (see Table 1). By 2006, the percentage of HBCUs with doctoral programs grew to 32%, with just under half the four-year public Historically Black institutions offering such programs.

The increasing number of institutions offering doctorates has contributed to the recent growth in graduate students attending HBCUs, particularly at the public institutions. Table 2 shows that between 2001 and 2006, the number of graduate students at public HBCUs increased 12%, and during the entire 1996-to-2006 time span, the number of graduate students at these institutions grew 17%. Private HBCUs saw a 9% gain in graduate students during the past decade.

The combined increase in numbers of HBCUs offering doctorates and the number of graduate students attending these institutions has led to a rapid growth in the number of African Americans receiving Ph.D.s and other doctoral degrees. During the past decade, the number of doctorates conferred to African Americans by HBCUs surged 82% (see Table 3). More importantly, in the past five years, the percentage increases in African American doctorates from HBCUs appears to have accelerated, while growth in the number of these awards overall has slowed. Between 2001 and 2006, the number of doctorates to African Americans from HBCUs gained 36%, while the overall increase in doctorates to all African Americans rose 3%.

HBCUs thus have become even more important in providing graduate education opportunities and success for African Americans. In spite of these gains, African Americans still account for just 6% of all doctorates granted to U.S. citizens (NSF, 2007). All institutions will have to make even greater efforts to increase African American enrollment and persistence in graduate education. HBCUs will undoubtedly play an important role in expanding educational opportunities for these under-represented students.

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**Table 1. Percentage of HBCUs That Offered Doctoral Programs, by Institutional Control, 1996 & 2006**

<table>
<thead>
<tr>
<th></th>
<th>1996</th>
<th>2006</th>
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<tbody>
<tr>
<td>Public</td>
<td>32%</td>
<td>47%</td>
</tr>
<tr>
<td>Private</td>
<td>15%</td>
<td>19%</td>
</tr>
<tr>
<td>Total</td>
<td>23%</td>
<td>32%</td>
</tr>
</tbody>
</table>

*Sources: NCES, 1997a & 2007a.*

**Table 2. Percentage Change in Total Number of Graduate Students Attending HBCUs, by Institutional Control, 1996 to 2006**

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<tr>
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<tbody>
<tr>
<td>Public</td>
<td>3%</td>
<td>12%</td>
<td>17%</td>
</tr>
<tr>
<td>Private</td>
<td>-9%</td>
<td>8%</td>
<td>9%</td>
</tr>
<tr>
<td>Total</td>
<td>1%</td>
<td>11%</td>
<td>15%</td>
</tr>
</tbody>
</table>

*Sources: NCES, 1997b, 2002a, and 2007b.*

**Table 3. Percentage Change in Doctoral Degrees Awarded to African Americans at HBCUs Compared With All U.S. Universities, 1996 to 2006**

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<thead>
<tr>
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<tbody>
<tr>
<td>HBCUs*</td>
<td>35%</td>
<td>36%</td>
<td>82%</td>
</tr>
<tr>
<td>All Universities*</td>
<td>25%</td>
<td>3%</td>
<td>27%</td>
</tr>
</tbody>
</table>

*Includes awards to U.S. citizens and permanent residents only*

*Sources: NCES, 1997c, 2002b, & 2007c; NSF, 2007.*

continued on page 4
Data Sources: Trends in Graduate Enrollment and Doctoral Degrees at Historically Black Colleges and Universities, 1996 to 2006

References


By Kenneth E. Redd, Director of Research and Policy Analysis

but the deans have to involve faculty or a culture will not be impacted.

A second crucial lesson was that the programs cannot be directed at graduate students only. Faculty, post-doctoral fellows, research scientists, and research administrators need to be involved in all aspects of the program. Since RCR and ethics education has not been a focal point of many graduate programs, it is often necessary to raise awareness among those who work with graduate students. Principal Investigators also raised several questions regarding the best time and best way to provide instruction. The general conclusion was that it needs to begin early and be part of the entire education process. Different interventions are appropriate at different stages since students will not have a research framework in their first semester but can consider ethical issues related to professional practice. While on-line modules were commonly used, there was agreement that they need to be accompanied by discussions and that they cannot meet the educational needs alone. Embedding ethics and RCR content throughout the curriculum, in discussions about laboratory or research practices, and in Preparing Future Faculty and Preparing Future Professional programs is essential.

A third key lesson was that there is a considerable body of resources available and that there is tremendous potential for reinventing wheels. It was suggested that the CGS website should develop a clearinghouse of resources that can be used directly or adapted.

Future Plans
NSF Grant
CGS will publish a monograph in summer 2008 that includes more details on the best practice models developed through the NSF grant. The website will be updated and expanded based on the suggestions from the PI group to create a clearinghouse. The website will also include tables summarizing the content of this article so that others who want to benefit from the grantees’ experiences know who has developed programs in specific areas.

ORI Contract
The new ORI contract is for three-and-a-half years. Universities funded through the sub awards will assist CGS in developing a demonstration and institutionalization project that will address the issues of sustainability, assessment, and dissemination within a national framework. The project has at its core a blue ribbon advisory board of national experts in ethics and RCR education and graduate deans. The group will assist in framing an RFP to be released in April by outlining the core issues to be addressed for successful institutionalization. This project will assist CGS in moving closer to its goal of complete integration of RCR education in graduate education.

By Diana Carlin, CGS Dean in Residence and Director of International Outreach