

# UNDERGRADUATE ACADEMIC FIELDS OF INTEREST BY POPULATION

Prepared for Clarion University of Pennsylvania

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In the following report, Hanover Research discusses undergraduate programs that are popular among undergraduate students in different demographic groups. A spreadsheet accompanying this report details degree completions at the national, regional, and state levels ranked by the overall numbers of completions by members of the examined groups. These data are segmented to show which program areas are most popular and growing most quickly among segmented groups of students.

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# EXECUTIVE SUMMARY AND KEY FINDINGS

## INTRODUCTION

This report examines demand for undergraduate education within various demographic subgroups to assist Clarion University of Pennsylvania in increasing and diversifying its undergraduate enrollment. Broadly, Hanover identified several key factors related to gender, race/ethnicity, and age that influence undergraduate enrollment trends. Nationally, women account for a greater percentage of undergraduates (57 percent) than do men. Overall, the share of white undergraduate students has decreased over the last 40 years, (with the share of ethnic minority students consequently increasing). Finally, students of traditional college age (ages 18-24) accounted for the majority of undergraduate enrollments in 2013.<sup>1</sup> Of all these demographic factors, gender is consistently shown to be the strongest indicator of choice of major.<sup>2</sup>

Hanover draws on a variety of sources for this report. For example, the National Center for Education Statistics (NCES) Integrated Postsecondary Education Data System (IPEDS) provides student completions data by gender and racial/ethnic group,<sup>3</sup> which can be analyzed across several years to gain insight into student demand, and the ACT College Choice Report, which followed the high school class of 2013, provides further insight into major choices among students of traditional college age.<sup>4</sup>

This report includes the following sections:

- **Section I: Top Academic Areas of Interest by Gender** analyzes the most popular majors for men and women. This section also includes an analysis of the occupations with the largest “gender gap.”
- **Section II: Top Academic Areas of Interest for Minority Groups** examines the most popular majors for Hispanics and African-Americans, the two largest minority groups. It also discusses occupations with a higher representation of minorities.
- **Section III: Top Academic Areas of Interest by Age Group** uses data from ACT test-takers to discuss majors of greatest interest to traditional college-age students.
- **Appendix I: Project Methodology** explains how Hanover identified the most popular majors in Sections I and II and the contents of the accompanying **Data Supplement**.
- **Appendix II: Ecotourism** briefly discusses this new degree field and its potential appeal to students based on preliminary data indicators.

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<sup>1</sup> [1] “IPEDS Data Center.” National Center for Education Statistics. <http://nces.ed.gov/ipeds/datacenter/>

[2] “Status and Trends in the Education of Racial and Ethnic Minorities.” National Center for Education Statistics, July 2010. [https://nces.ed.gov/pubs2010/2010015/indicator6\\_24.asp](https://nces.ed.gov/pubs2010/2010015/indicator6_24.asp)

<sup>2</sup> [1] “IPEDS Data Center.” Op. cit.

[2] Dickson, L. “Race and Gender Differences in College Major Choice.” University of Maryland Baltimore County, May 31, 2009. p. 5. [http://theop.princeton.edu/reports/wp/ANNALS\\_Dickson\\_Manuscript\\_FINAL\\_\(31May09\).pdf](http://theop.princeton.edu/reports/wp/ANNALS_Dickson_Manuscript_FINAL_(31May09).pdf)

<sup>3</sup> “IPEDS Data Center.” Op. cit.

<sup>4</sup> “College Choice Report: High School Class of 2013: About the Report.” ACT College Choice Report. <http://www.act.org/collegechoice/13/about.html>

## KEY FINDINGS

- **Women are consistently more likely to pursue higher education than men.** In 2013, women in the United States earned a clear majority of bachelor's degrees (57 percent). Compared to race/ethnicity and age, gender is the strongest indicator of the majors students will choose to pursue. Therefore, targeting degree programs popular among male students nationally may be an effective way to balance gender enrollments at Clarion University.
- **The most popular majors for men include computer science, engineering, and business (finance in particular).** The idea that men are more likely to major in STEM (Science, Technology, Engineering, and Mathematics) subjects is not true for science and mathematics in general, but technology and engineering fields remain far more popular among male students. Other popular majors among male students include general business, criminal justice, and kinesiology. On the other hand, health sciences, education, and social work are all majors that attract more women, making such programs unlikely to contribute to more balanced student enrollment figures.
- **The share of ethnic and racial minorities enrolled in higher education is increasing.** From 1976 to 2008, the share of white students decreased by almost 20 percent. Attracting ethnic minorities (particularly Hispanics and African-Americans, the two largest minority groups) is now more important for institutions seeking to increase overall enrollment.
- **Degree completion and employment trends suggest that African-Americans and Hispanics are more likely to pursue social sciences, public policy, and health sciences pathways.** IPEDS completions data and the race/ethnicity distributions of common occupational groups suggest that an above-average number of African-Americans and Hispanics pursue degrees and jobs in these fields. The health sciences are particularly popular among women in both groups.
- **Traditional college students (ages 18 to 24) still represent the largest group to target when attempting to increase enrollment.** Attending an institution with a desired major is often important to these students when choosing an institution, and according to ACT data, students who initially plan to major in business, engineering, and the health sciences are most likely to actually declare majors in these fields within their first two years of enrollment at four-year institutions.

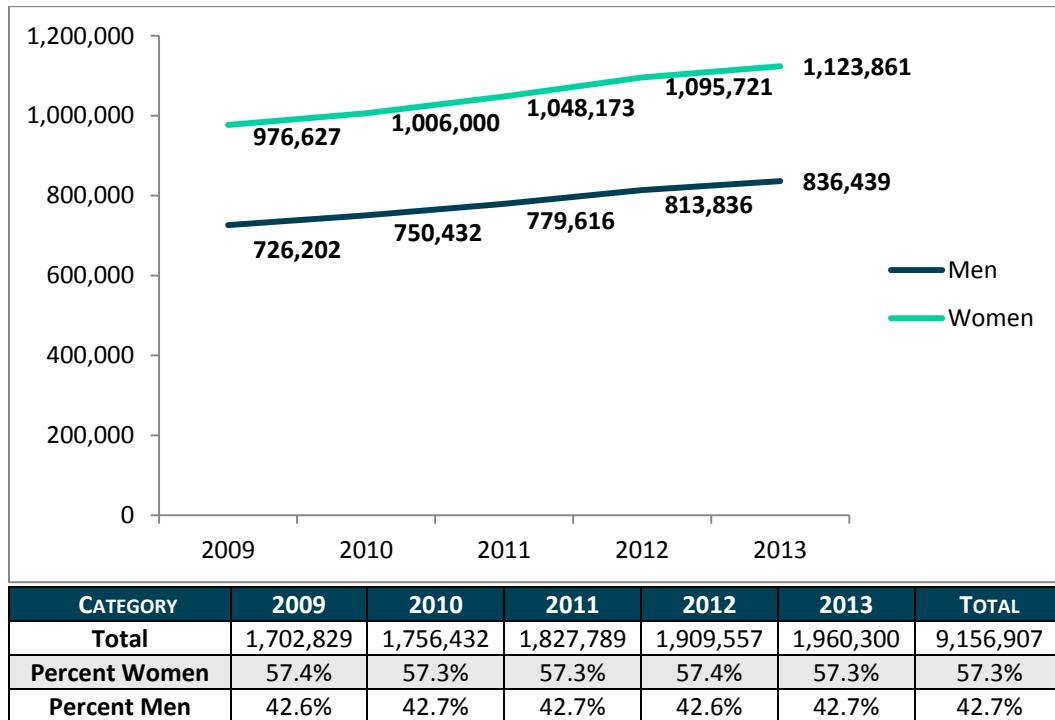
## SECTION I: TOP ACADEMIC AREAS OF INTEREST BY GENDER

In this section, Hanover discusses trends in undergraduate degree completions and majors by gender at the national, regional, and state levels. Occupations that show the largest gaps nationwide between male and female workers are detailed here as well to further identify educational paths that have strong gender-linked divisions.

### PROGRAM AREAS BY GENDER

Figure 1.1 displays the difference in male and female bachelor's degree completions from 2009 to 2013. Over this period, a total of 3,906,525 male students completed bachelor's degrees (about 43 percent of total bachelor's degrees), while female students completed 5,250,382 such degrees (about 57 percent).<sup>5</sup> While women earned more degrees overall, the number of completions for both genders grew at a similar rate.

**Figure 1.1: Undergraduate Degree Completions by Gender, 2009-2013**



Source: Integrated Postsecondary Data Center<sup>6</sup>

Traditionally, male undergraduate students have been more likely to pursue Science, Technology, Engineering and Mathematics degrees ("STEM" majors). However, at present, only technology (considered as computer science) and engineering are noticeably more

<sup>5</sup> "IPEDS Data Center." Op. cit.

<sup>6</sup> Ibid.

popular with men.<sup>7</sup> Women accounted for just 15 percent of computer science majors in 2011,<sup>8</sup> and this gender disparity continued into the labor market, where a 2011 report indicated that women held only 27 percent of all computer science-related jobs. (Similarly, only one in seven engineers was female).<sup>9</sup> Figure 1.2 lists these and other predominately male majors alongside predominately female majors according to a 2009 PayScale report.<sup>10</sup>

**Figure 1.2: Majors with the Largest Gender Gaps**

| FEMALE MAJORS              | PERCENT FEMALE | MALE MAJORS             | PERCENT MALE |
|----------------------------|----------------|-------------------------|--------------|
| Fashion Design             | 95%            | Construction Management | 93%          |
| Interior Design            | 90%            | Mechanical Engineering  | 92%          |
| Elementary Education       | 88%            | Electrical Engineering  | 91%          |
| Social Work                | 88%            | Physics                 | 89%          |
| Nursing                    | 88%            | Aerospace Engineering   | 87%          |
| Occupational Therapy       | 86%            | Civil Engineering       | 85%          |
| French                     | 84%            | Computer Science        | 85%          |
| Art History                | 83%            | Landscape Architecture  | 79%          |
| Medical Technology         | 79%            | Agriculture             | 77%          |
| Food and Nutrition         | 78%            | Chemical Engineering    | 76%          |
| Spanish                    | 78%            | Geology                 | 76%          |
| Health Care Administration | 76%            | Economics               | 72%          |
| Public Relations           | 74%            | Geography               | 72%          |
| Human Resources            | 72%            | Sports Management       | 70%          |
| Psychology                 | 72%            | Finance                 | 70%          |

Source: PayScale<sup>11</sup>

Despite the perception that women do not pursue STEM degrees, women have a strong presence in mathematics and the sciences overall, with female students being somewhat more common than male students in biology.<sup>12</sup> In 2012, women earned 58 percent of biology degrees and 40 to 45 percent of math, statistics, and physical sciences degrees.<sup>13</sup>

*The gender disparity in “STEM” majors is most severe in the Technology and Engineering areas; women are fairly well-represented in Mathematics and Science.*

<sup>7</sup> “Who Studies What? Men, Women, and College Majors.” NPR Planet Money, October 28, 2014.

<http://www.npr.org/sections/money/2014/10/28/359419934/who-studies-what-men-women-and-college-majors>

<sup>8</sup> Mulhere, K. “Shifts in Computer Science Interest.” *Inside Higher Ed*, April 21, 2015.

<https://www.insidehighered.com/news/2015/04/21/study-measures-causes-gender-gap-computer-science>

<sup>9</sup> Huhman, H. “STEM Fields and the Gender Gap: Where Are the Women?” *Forbes*, June 20, 2012.

<http://www.forbes.com/sites/work-in-progress/2012/06/20/stem-fields-and-the-gender-gap-where-are-the-women/>

<sup>10</sup> Bardaro, K. “Majors by Gender: Is it Bias or the Major that Determines Future Pay?” PayScale, December 3, 2009.

<http://www.payscale.com/career-news/2009/12/do-men-or-women-choose-majors-to-maximize-income>

<sup>11</sup> Ibid.

<sup>12</sup> “Who Studies What? Men, Women, and College Majors.” Op. cit.

<sup>13</sup> Olson, R. “Percentage of Bachelor’s degrees conferred to women, by major (1970-2012).” Randal S. Olson Blog, June 14, 2014. <http://www.randalolson.com/2014/06/14/percentage-of-bachelors-degrees-conferred-to-women-by-major-1970-2012/>

## COMMON OCCUPATIONS FOR MEN

Figure 1.3 shows the 20 most common occupations for men and the most common educational attainment level held by workers in each role, per the Institute for Women's Policy Research and the Bureau of Labor Statistics. Together, these occupations employ 28 percent of men and 16 percent of women in the labor force. As suggested earlier in the report, computer science and financial positions are popular among male graduates with bachelor's degrees.

**Figure 1.3: 20 Most Common Occupations among Men (Full-time Workers)**

| OCCUPATION  | SHARE OF MALE WORKERS IN OCCUPATION | TYPICAL EDUCATION FOR ENTRY TO THE WORKFORCE |
|---|-------------------------------------|--|
| Carpenters  | 98.6%                               | High school                                  |
| Electricians  | 98.3%                               | High school                                  |
| Automotive service technicians and mechanics                  | 98.1%                               | High school                                  |
| Construction laborers   | 97.3%                               | High school                                  |
| Grounds maintenance workers                                   | 96.1%                               | High school                                  |
| Police and sheriff's patrol officers                          | 87.0%                               | Some college                                 |
| First-line supervisors of production and operating workers    | 81.5%                               | High school                                  |
| <i>Software developers, applications and systems software</i> | 80.2%                               | <i>Bachelor's degree</i>                     |
| <i>Sales representatives, wholesale and manufacturing</i>     | 77.3%                               | <i>Bachelor's degree</i>                     |
| <i>General and operations managers</i>                        | 73.6%                               | <i>Bachelor's degree</i>                     |
| <i>Chief executives</i>                                       | 72.8%                               | <i>Bachelor's degree</i>                     |
| Janitors and building cleaners                                | 72.6%                               | High school                                  |
| Cooks   | 65.3%                               | High school                                  |
| Stock clerks and order fillers                                | 65.0%                               | High school                                  |
| <i>Managers, all other</i>                                    | 62.8%                               | <i>Bachelor's degree</i>                     |
| Miscellaneous assemblers and fabricators                      | 62.8%                               | High school                                  |
| Retail salespersons   | 59.7%                               | High school                                  |
| First-line supervisors of retail sales workers                | 57.7%                               | High school                                  |
| <i>Accountants and auditors</i>                               | 37.7%                               | <i>Bachelor's degree</i>                     |
| Customer service representatives                              | 33.9%                               | Some college                                 |

Source: Institute for Women's Policy Research,<sup>14</sup> BLS<sup>15</sup>

## DEGREE COMPLETIONS FOR MEN

Figures 1.4 through 1.6 detail the 20 majors at the national, regional, and state levels that attract the largest numbers of men. The listed majors include only those where male students accounted for at least 50 percent of the bachelor's degrees conferred in 2013. For additional information on the methodology used to make these selections, see Appendix I.

<sup>14</sup> "The Gender Wage Gap by Occupation 2013." Institute for Women's Policy Research, April 2014. p. 4. [http://www.iwpr.org/publications/pubs/the-gender-wage-gap-by-occupation-and-by-race-and-ethnicity-2013/at\\_download/file](http://www.iwpr.org/publications/pubs/the-gender-wage-gap-by-occupation-and-by-race-and-ethnicity-2013/at_download/file)

<sup>15</sup> "Educational attainment for workers 25 years and older by detailed occupation." Op. cit.

### NATIONAL DEGREE COMPLETIONS

Figure 1.4 presents the top 20 majors for men in 2013 according to the criteria above. Some major trends among male degree conferrals are as follows:

- **Finance** is particularly popular. While there is just a slight majority of male student completions among **general business degrees**, finance has a particularly high percentage of degree conferrals to men (at nearly 70 percent).
- Among liberal arts and social sciences majors, **political science, history, and economics** are the most popular among male students.
- Multiple types of **engineering** appear in the list, and they are all particularly popular among men. Most notably, nearly 88 percent of **mechanical engineering** graduates are male. **Computer science** has a similar imbalance of male and female students.
- **Criminal justice and sports and fitness administration/teaching and coaching** are also more popular among men, though only slightly in the former case.

**Figure 1.4: Top 20 Most Popular Undergraduate Majors for Men (by Completions Volume) Nationally, 2013**

| MAJOR   | 2013 COMPLETIONS (MEN) | OVERALL PERCENT MEN |
|---|------------------------|---------------------|
| 52.0201 Business Administration and Management, General           | 73,798                 | 51.8%               |
| 52.0801 Finance, General  | 24,158                 | 69.4%               |
| 45.1001 Political Science and Government, General                 | 23,309                 | 55.4%               |
| 54.0101 History, General  | 21,863                 | 59.3%               |
| 45.0601 Economics, General  | 21,422                 | 69.3%               |
| 14.1901 Mechanical Engineering                                    | 19,685                 | 87.9%               |
| 43.0104 Criminal Justice/Safety Studies                           | 16,542                 | 51.3%               |
| 52.0101 Business/Commerce, General                                | 13,705                 | 53.0%               |
| 14.1001 Electrical and Electronics Engineering                    | 11,611                 | 88.1%               |
| 27.0101 Mathematics, General                                      | 11,249                 | 57.4%               |
| 14.0801 Civil Engineering, General                                | 10,478                 | 78.7%               |
| 11.0701 Computer Science  | 10,081                 | 86.7%               |
| 11.0101 Computer and Information Sciences, General                | 10,046                 | 83.9%               |
| 43.0103 Criminal Justice/Law Enforcement Administration           | 9,762                  | 50.3%               |
| 40.0501 Chemistry, General  | 7,450                  | 52.5%               |
| 38.0101 Philosophy  | 6,324                  | 69.3%               |
| 52.1201 Management Information Systems, General                   | 6,083                  | 73.2%               |
| 52.0299 Business Administration, Management and Operations, Other | 5,710                  | 50.1%               |
| 31.0504 Sport and Fitness Administration/Management               | 5,619                  | 73.7%               |
| 13.1314 Physical Education Teaching and Coaching                  | 5,462                  | 59.4%               |

Source: IPEDS<sup>16</sup>

<sup>16</sup> "IPEDS Data Center." Op. cit.

### REGIONAL DEGREE COMPLETIONS

Figure 1.5 displays the top 20 majors for men in the Mideast region in 2013.<sup>17</sup> Some major trends among male degree conferrals are as follows:

- **Accounting** is relatively more popular among male students in the region, with 52.7 percent of degrees conferred to men (compared to 48.1 percent nationwide). Other business-related degree completions, including finance with a strong male majority, are comparable to the national trends.
- **Information science/studies** programs, a subset of computer science, are particularly popular among men in the region.<sup>18</sup> Male students received 77.3 percent of undergraduate degrees in these fields.

**Figure 1.5: Top 20\* Most Popular Undergraduate Majors for Men  
(by Completions Volume) in the Mideast Region, 2013**

| MAJORS  | 2013 COMPLETIONS<br>(MEN) | OVERALL<br>PERCENT MEN |
|---|---------------------------|------------------------|
| 52.0201 Business Administration and Management, General | 10,592                    | 54.2%                  |
| 52.0301 Accounting                                      | 5,483                     | 52.7%                  |
| 52.0801 Finance, General                                | 4,978                     | 70.1%                  |
| 45.0601 Economics, General                              | 4,977                     | 67.9%                  |
| 54.0101 History, General                                | 4,609                     | 60.1%                  |
| 45.1001 Political Science and Government, General       | 4,602                     | 54.7%                  |
| 14.1901 Mechanical Engineering                          | 3,429                     | 87.3%                  |
| 11.0401 Information Science/Studies                     | 2,396                     | 77.3%                  |
| 27.0101 Mathematics, General                            | 2,305                     | 54.3%                  |
| 11.0101 Computer and Information Sciences, General      | 2,235                     | 84.5%                  |
| 43.0104 Criminal Justice/Safety Studies                 | 2,178                     | 55.6%                  |
| 43.0103 Criminal Justice/Law Enforcement Administration | 2,045                     | 52.7%                  |
| 14.1001 Electrical and Electronics Engineering          | 1,984                     | 88.6%                  |
| 14.0801 Civil Engineering, General                      | 1,475                     | 76.7%                  |
| 11.0701 Computer Science                                | 1,384                     | 85.1%                  |
| 31.0505 Kinesiology and Exercise Science                | 1,258                     | 51.5%                  |
| 38.0101 Philosophy                                      | 1,231                     | 67.5%                  |
| 30.9999 Multi-/Interdisciplinary Studies, Other         | 1,213                     | 51.6%                  |
| 40.0501 Chemistry, General                              | 1,200                     | 50.3%                  |
| 40.0801 Physics, General                                | 1,026                     | 78.9%                  |

Source: IPEDS<sup>19</sup>

\*Note that the major “Talmudic Studies,” which ranked 14<sup>th</sup> with 1,540 completions was removed from this figure, as the programs awarding such degrees are almost exclusively open only to male students.

<sup>17</sup> The states in the Mideast region are Delaware, the District of Columbia, Maryland, New Jersey, New York, and Pennsylvania.

<sup>18</sup> “Detail for CIP Code 11.0401.” IPEDS Classification of Instructional Programs (CIP), National Center for Education Statistics. <https://nces.ed.gov/ipeds/cipcode/cipdetail.aspx?y=55&cipid=88081>

<sup>19</sup> Ibid.

### PENNSYLVANIA DEGREE COMPLETIONS

Figure 1.6 shows the top 20 majors for men in Pennsylvania in 2013. Generally, the percentage of degrees awarded to men in these fields is broadly similar to the region as a whole, though business administration and accounting skew even further toward male predominance than in the Mideast as a whole.

**Figure 1.6: Top 20 Most Popular Undergraduate Majors for Men  
(by Completions Volume) in Pennsylvania, 2013**

| MAJORS  | 2013 COMPLETIONS (MEN) | OVERALL PERCENT MEN |
|---|------------------------|---------------------|
| 52.0201 Business Administration and Management, General | 2,824                  | 55.6%               |
| 52.0801 Finance, General                                | 1,874                  | 71.6%               |
| 52.0301 Accounting                                      | 1,643                  | 58.2%               |
| 54.0101 History, General                                | 1,326                  | 62.0%               |
| 45.1001 Political Science and Government, General       | 1,254                  | 57.4%               |
| 45.0601 Economics, General                              | 1,181                  | 70.5%               |
| 14.1901 Mechanical Engineering                          | 1,174                  | 87.6%               |
| 43.0104 Criminal Justice/Safety Studies                 | 920                    | 55.4%               |
| 11.0401 Information Science/Studies                     | 752                    | 76.7%               |
| 14.1001 Electrical and Electronics Engineering          | 675                    | 89.8%               |
| 27.0101 Mathematics, General                            | 672                    | 54.4%               |
| 11.0101 Computer and Information Sciences, General      | 570                    | 85.2%               |
| 52.0101 Business/Commerce, General                      | 562                    | 56.5%               |
| 14.0801 Civil Engineering, General                      | 499                    | 76.2%               |
| 43.0103 Criminal Justice/Law Enforcement Administration | 491                    | 56.3%               |
| 31.0504 Sport and Fitness Administration/Management     | 460                    | 72.1%               |
| 11.0701 Computer Science                                | 398                    | 82.9%               |
| 38.0101 Philosophy                                      | 376                    | 64.7%               |
| 14.0701 Chemical Engineering                            | 333                    | 64.7%               |
| 40.0801 Physics, General                                | 315                    | 78.9%               |

Source: IPEDS<sup>20</sup>

<sup>20</sup> Ibid.

## COMMON OCCUPATIONS FOR WOMEN

Figure 1.7 shows the 20 most common occupations for women and the most common educational attainment level held by workers in each role based on data from the Institute for Women's Policy Research and the Bureau of Labor Statistics. Together, these occupations employ 42.1 percent of all women and 15.4 percent of all men in the labor force. As suggested earlier in the report, education and health services professions are especially popular among women with a bachelor's degree. Also, financial manager is a common occupation for women, despite the far larger number of current male finance students. This may indicate a shift from the historical trends that shaped the majority of the current labor force or that a specialized finance degree may not be needed to enter this occupation.

**Figure 1.7: 20 Most Common Occupations among Women (Full-time Workers)**

| OCCUPATION  | SHARE OF FEMALE WORKERS IN OCCUPATION | TYPICAL EDUCATION IN THE WORKFORCE |
|---|---------------------------------------|------------------------------------|
| Secretaries and Administrative Assistants                         | 94.7%                                 | High school                        |
| Receptionists and Information Clerks                              | 91.9%                                 | Some college                       |
| <i>Registered Nurses</i>  | 88.8%                                 | <i>Bachelor's degree</i>           |
| Bookkeeping, Accounting, and Auditing Clerks                      | 87.3%                                 | Some college                       |
| Nursing, Psychiatric, and Home Health Aides                       | 86.7%                                 | High school                        |
| Office Clerks, General  | 86.2%                                 | Some college                       |
| Maids and Housekeeping Cleaners                                   | 82.5%                                 | High school                        |
| Personal Care Aides   | 82.0%                                 | High school                        |
| <i>Elementary and Middle School Teachers</i>                      | 80.1%                                 | <i>Bachelor's degree</i>           |
| <i>Social Workers</i>   | 79.7%                                 | <i>Bachelor's degree</i>           |
| Cashiers  | 69.0%                                 | High school                        |
| First-line Supervisors of Office & Administrative Support Workers | 67.7%                                 | Some college                       |
| Customer Service Representatives                                  | 66.1%                                 | Some college                       |
| Waiters and Waitresses  | 63.2%                                 | High school                        |
| <i>Accountants and Auditors</i>                                   | 62.3%                                 | <i>Bachelor's degree</i>           |
| <i>Secondary School Teachers</i>                                  | 55.3%                                 | <i>Bachelor's degree</i>           |
| <i>Financial Managers</i>   | 54.4%                                 | <i>Bachelor's degree</i>           |
| First-line Supervisors of Retail Sales Workers                    | 42.3%                                 | High school                        |
| Retail Salespersons   | 40.3%                                 | High school                        |
| <i>Managers, All Other</i>  | 37.2%                                 | <i>Bachelor's degree</i>           |

Source: Institute for Women's Policy Research<sup>21</sup>

## DEGREE COMPLETIONS FOR WOMEN

Figures 1.8 through 1.10 detail the 20 majors at the national, regional, and state levels that attract the largest numbers of women. Similar to the section for men, the listed majors include only those where female students accounted for at least 50 percent of the bachelor's degrees conferred in 2013. For additional information on the methodology used to make these selections, see Appendix I.

<sup>21</sup> "The Gender Wage Gap by Occupation 2013." Op. cit. p. 2.

### NATIONAL DEGREE COMPLETIONS

Figure 1.8 shows the top 20 majors for women based on 2013 degree completions data, selected using the criteria described earlier. Some major trends among degree conferrals to women are include:

- **Registered nursing** and **psychology**, as suggested earlier, are the two degrees most frequently pursued by women.
- The highest percentage of women, however, is found in **early childhood and elementary education and teaching**. More than 90 percent of 2013 graduates in both of these degree categories are women. Women also accounted for 88.6 percent of graduates in **special education**, the 21<sup>st</sup> most popular major for women.
- **Biology** attracts the third-largest number of female students, making it the STEM field most popular among women. In the business world, **marketing/marketing management** is the largest majority-female major.

**Figure 1.8: Top 20 Most Popular Undergraduate Majors for Women (by Completions Volume) Nationally, 2013**

| MAJORS  | 2013 COMPLETIONS (WOMEN) | OVERALL PERCENT WOMEN |
|---|--------------------------|-----------------------|
| 51.3801 Registered Nursing/Registered Nurse       | 91,628                   | 87.6%                 |
| 42.0101 Psychology, General                       | 87,050                   | 76.4%                 |
| 26.0101 Biology/Biological Sciences, General      | 41,776                   | 60.4%                 |
| 13.1202 Elementary Education and Teaching         | 34,186                   | 90.6%                 |
| 23.0101 English Language and Literature, General  | 31,575                   | 69.7%                 |
| 52.0301 Accounting                                | 27,376                   | 51.9%                 |
| 45.1101 Sociology                                 | 23,938                   | 69.8%                 |
| 09.0101 Speech Communication and Rhetoric         | 21,096                   | 64.8%                 |
| 24.0101 Liberal Arts and Sciences/Liberal Studies | 18,056                   | 67.1%                 |
| 30.9999 Multi-/Interdisciplinary Studies, Other   | 17,609                   | 68.0%                 |
| 52.1401 Marketing/Marketing Management, General   | 17,296                   | 52.3%                 |
| 44.0701 Social Work                               | 16,850                   | 88.2%                 |
| 13.1210 Early Childhood Education and Teaching    | 13,202                   | 96.3%                 |
| 31.0505 Kinesiology and Exercise Science          | 9,916                    | 51.3%                 |
| 50.0701 Art/Art Studies, General                  | 9,673                    | 70.6%                 |
| 16.0905 Spanish Language and Literature           | 9,353                    | 74.3%                 |
| 24.0102 General Studies                           | 8,857                    | 59.1%                 |
| 45.0201 Anthropology                              | 8,711                    | 71.3%                 |
| 09.0401 Journalism                                | 8,506                    | 67.6%                 |
| 50.0702 Fine/Studio Arts, General                 | 7,615                    | 69.5%                 |

Source: IPEDS<sup>22</sup>

<sup>22</sup> "IPEDS Data Center." Op. cit.

### REGIONAL DEGREE COMPLETIONS

Figure 1.9 displays the top 20 majors for women in the Mideast region in 2013.<sup>23</sup> Some major trends among female degree conferrals in the region are as follows:

- Unlike at the national level, there are more female **psychology** graduates than **registered nursing** graduates. However, the percentage female for each major are roughly the same at the regional and national levels.
- Top majors with a notably larger portion of female completions in the Mideast region than the United States as a whole include **Spanish language and literature**, **art/art studios**; and **anthropology**.

**Figure 1.9: Top 20 Most Popular Undergraduate Majors for Women  
(by Completions Volume) in the Mideast Region, 2013**

| CIP CODE  | 2013 COMPLETIONS (WOMEN) | OVERALL PERCENT WOMEN |
|---|--------------------------|-----------------------|
| 42.0101 Psychology, General                       | 17,305                   | 77.7%                 |
| 51.3801 Registered Nursing/Registered Nurse       | 12,189                   | 87.9%                 |
| 26.0101 Biology/Biological Sciences, General      | 7,440                    | 61.3%                 |
| 23.0101 English Language and Literature, General  | 6,602                    | 71.4%                 |
| 13.1202 Elementary Education and Teaching         | 5,412                    | 90.0%                 |
| 45.1101 Sociology                                 | 4,285                    | 71.7%                 |
| 09.0101 Speech Communication and Rhetoric         | 3,865                    | 63.4%                 |
| 24.0101 Liberal Arts and Sciences/Liberal Studies | 3,628                    | 60.5%                 |
| 52.1401 Marketing/Marketing Management, General   | 2,501                    | 52.1%                 |
| 44.0701 Social Work                               | 2,369                    | 87.5%                 |
| 52.0101 Business/Commerce, General                | 2,173                    | 52.3%                 |
| 45.0901 International Relations and Affairs       | 1,737                    | 60.9%                 |
| 13.1210 Early Childhood Education and Teaching    | 1,723                    | 95.8%                 |
| 13.1001 Special Education and Teaching, General   | 1,700                    | 90.7%                 |
| 50.0701 Art/Art Studies, General                  | 1,522                    | 74.0%                 |
| 45.0101 Social Sciences, General                  | 1,496                    | 65.8%                 |
| 50.0501 Drama and Dramatics/Theatre Arts, General | 1,466                    | 65.5%                 |
| 45.0201 Anthropology                              | 1,457                    | 74.6%                 |
| 16.0905 Spanish Language and Literature           | 1,450                    | 78.8%                 |
| 09.0401 Journalism                                | 1,428                    | 67.0%                 |

Source: IPEDS<sup>24</sup>

<sup>23</sup> The states in the Mideast region are Delaware, the District of Columbia, Maryland, New Jersey, New York, and Pennsylvania.

<sup>24</sup> Ibid.

### PENNSYLVANIA DEGREE COMPLETIONS

Figure 1.10 shows the top 20 majors for women in Pennsylvania in 2013. Generally, the percentages of degrees awarded to women are broadly similar to the region as a whole, though **speech communication and rhetoric** and **journalism** are proportionally more popular degrees. Also notable, women account for just over half of **chemistry** graduates, which is a relatively less common occurrence in the physical sciences.

**Figure 1.10: Top 20 Most Popular Undergraduate Majors for Women  
(by Completions Volume) in Pennsylvania, 2013**

| MAJORS  | 2013 COMPLETIONS<br>(WOMEN) | OVERALL PERCENT<br>WOMEN |
|---|-----------------------------|--------------------------|
| 42.0101 Psychology, General                       | 4283                        | 76.7%                    |
| 51.3801 Registered Nursing/Registered Nurse       | 4201                        | 88.6%                    |
| 26.0101 Biology/Biological Sciences, General      | 2254                        | 62.1%                    |
| 13.1202 Elementary Education and Teaching         | 1970                        | 88.3%                    |
| 23.0101 English Language and Literature, General  | 1657                        | 71.1%                    |
| 52.1401 Marketing/Marketing Management, General   | 1119                        | 50.4%                    |
| 13.1210 Early Childhood Education and Teaching    | 1030                        | 94.7%                    |
| 09.0101 Speech Communication and Rhetoric         | 887                         | 57.6%                    |
| 45.1101 Sociology                                 | 862                         | 69.4%                    |
| 44.0701 Social Work                               | 746                         | 88.1%                    |
| 24.0101 Liberal Arts and Sciences/Liberal Studies | 698                         | 60.4%                    |
| 16.0905 Spanish Language and Literature           | 563                         | 77.9%                    |
| 13.1001 Special Education and Teaching, General   | 513                         | 91.0%                    |
| 50.0701 Art/Art Studies, General                  | 433                         | 75.7%                    |
| 45.0201 Anthropology                              | 421                         | 76.5%                    |
| 40.0501 Chemistry, General                        | 418                         | 50.3%                    |
| 09.0401 Journalism                                | 416                         | 63.6%                    |
| 31.0505 Kinesiology and Exercise Science          | 415                         | 50.2%                    |
| 09.0903 Advertising                               | 409                         | 77.6%                    |
| 50.0501 Drama and Dramatics/Theatre Arts, General | 382                         | 67.6%                    |

Source: IPEDS<sup>25</sup>

<sup>25</sup> Ibid.

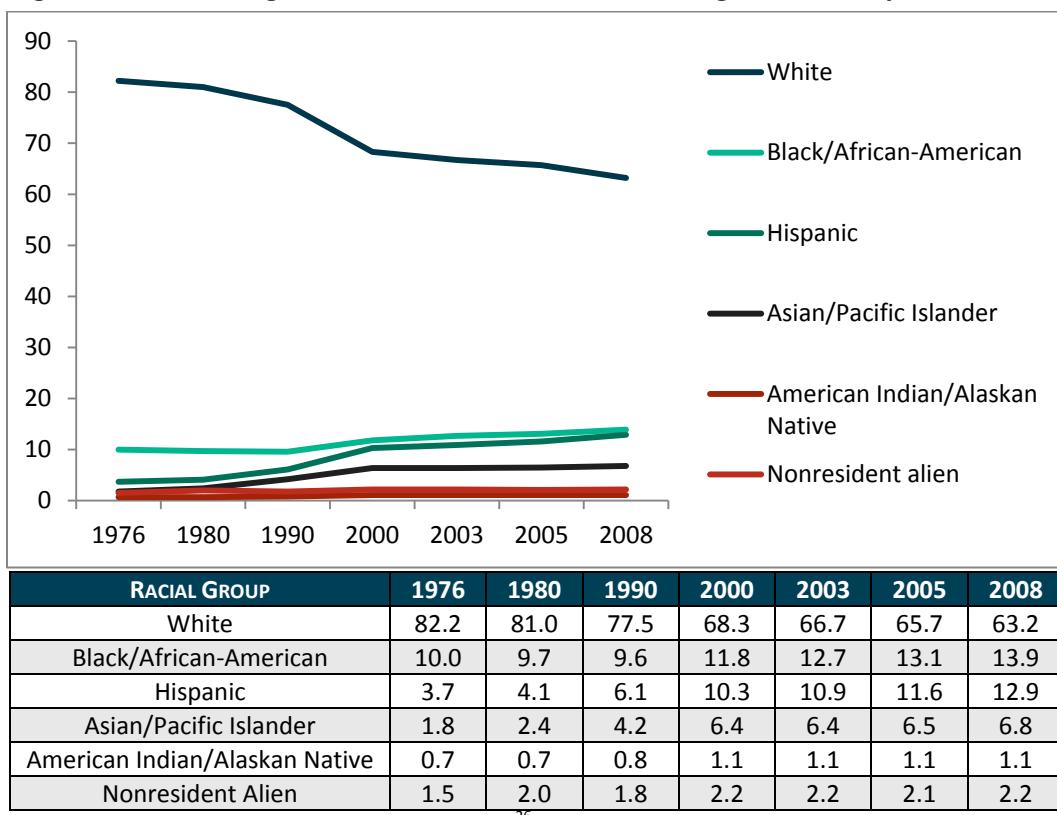
## SECTION II: TOP ACADEMIC AREAS OF INTEREST FOR MINORITY GROUPS

In this section, Hanover examines undergraduate degree completions trends for the largest two minority groups—African-Americans and Hispanics—at the national, regional, and state levels. This section also includes an analysis of broad trends in specific educational demand among these minority groups.

### PROGRAM AREAS BY RACE/ETHNICITY

NCES data indicate that minority enrollment in higher education is increasing at a faster rate than white enrollment, meaning that minority enrollment as a percentage of total enrollments is increasing. As shown in Figure 2.1, the share of enrolled Hispanic students increased from 4 to 13 percent, while the share of enrolled African-American students increased from 10 to 14 percent. Consequently, enrollments among white students have declined from 82 percent to 63 percent. This suggests that minority students, particularly African-Americans and Hispanics, are an important target market for institutions seeking to increase enrollment.

**Figure 2.1: Percentage Distribution of Enrollment among Ethnic Groups, 1976-2008**



Source: National Center for Education Statistics<sup>26</sup>

<sup>26</sup> "Status and Trends in the Education of Racial and Ethnic Minorities." Op. cit.

According to a report from Georgetown University that evaluated data from the U.S. Census Bureau, college majors are “highly segregated by race and gender.” While college graduates as a whole earn more over their lifetimes than those without a college education, earnings vary depending on majors. Minority groups are underrepresented among the majors that lead to the most profitable careers, while “white men are concentrated in the highest-earning majors, including engineering and pharmaceutical sciences.” The study noted that “law and public policy” has the highest concentrations of African-Americans and Hispanics (14 and 10 percent, respectively) when compared to other fields of study.<sup>27</sup>

A 2009 study from the University of Maryland analyzed initial major choices at three Texas institutions of higher education and discovered distinct trends among different racial and ethnic groups. The study found that African-American and Hispanic males are less likely to study engineering and computer science than white and Asian men. African-American men are also more likely to be undecided and pursuing general studies. African-American and Hispanic women “are more likely to choose a major in the social sciences.”<sup>28</sup> Figure 2.2 shows the full set of findings. Note that, overall, “[these] effects are much larger for gender than they are for race and ethnicity.” That is, the study found that gender is a stronger predictor of enrollment in certain subjects than race or ethnicity.<sup>29</sup>

**Figure 2.2: Major Choices by Race and Ethnicity**

| GROUP  | NATURAL/<br>PHYSICAL<br>SCIENCES | BUSINESS | SOCIAL<br>SCIENCES | ENGINEERING/<br>COMPUTER<br>SCIENCE | HUMANITIES/<br>OTHER | UNDECIDED |
|--|----------------------------------|----------|--------------------|-------------------------------------|----------------------|-----------|
| <b>Major Choices for Males by Race and Ethnicity</b>   |                                  |          |                    |                                     |                      |           |
| White male   | 11.6%                            | 14.0%    | 10.1%              | 26.0%                               | 8.6%                 | 29.8%     |
| Black male   | 13.1%                            | 13.1%    | 8.9%               | 25.4%                               | 5.8%                 | 33.9%     |
| Hispanic male  | 19.2%                            | 12.3%    | 11.4%              | 23.2%                               | 11.2%                | 22.7%     |
| Asian male   | 18.4%                            | 10.5%    | 4.1%               | 37.1%                               | 4.8%                 | 25.0%     |
| Other male   | 19.2%                            | 12.4%    | 9.5%               | 28.4%                               | 10.2%                | 20.3%     |
| <b>Major Choices for Females by Race and Ethnicity</b> |                                  |          |                    |                                     |                      |           |
| White female   | 16.2%                            | 12.6%    | 15.8%              | 5.5%                                | 15.7%                | 34.3%     |
| Black female   | 22.1%                            | 13.3%    | 17.4%              | 8.1%                                | 9.1%                 | 30.1%     |
| Hispanic female  | 26.9%                            | 12.2%    | 17.5%              | 5.4%                                | 15.1%                | 22.8%     |
| Asian female   | 23.7%                            | 14.8%    | 9.1%               | 11.0%                               | 9.9%                 | 31.7%     |
| Other female   | 28.5%                            | 12.1%    | 16.4%              | 7.5%                                | 14.9%                | 20.6%     |

Source: Dickson<sup>30</sup>

## DEGREE COMPLETIONS FOR AFRICAN-AMERICANS

Figures 2.3 through 2.5 present the 20 majors at the national, regional, and state levels that attract the greatest numbers of African-Americans. The selection of majors only includes those for which the percentage of African-American completions exceeded their average

<sup>27</sup> “Study: College Majors are Highly Segregated by Race, Gender.” News One for Black America, May 24, 2011. <http://newsone.com/1252915/college-majors-highly-segregated-by-race-and-gender/>

<sup>28</sup> Dickson, Op. cit.

<sup>29</sup> Ibid. Abstract.

<sup>30</sup> Ibid. p. 20.

across all majors (9.4 percent nationally, 10.4 percent in the Mideast, and 7 percent in Pennsylvania).<sup>31</sup> For additional information on the methodology used to make these selections, see Appendix I.

#### NATIONAL DEGREE COMPLETIONS

Figure 2.3 presents the top 20 majors for African-Americans in 2013 based on the mentioned criteria. Some areas of note include:

- **Health care-related subjects** are most disproportionately populated by African-American students, who account for over 25 percent of undergraduate health care administration and hospital administration degree conferrals.
- The proportion of African-Americans pursuing **general business degrees** is above-average, with three general business undergraduate degree programs in the top 20.
- **Criminal justice, law enforcement administration, social work, sociology, and human services** are another significant grouping of degree programs with high African-American student representation.

**Figure 2.3: Top 20 Most Popular Majors for African-Americans  
(by Completions Volume) Nationally, 2013**

| MAJORS  | AFRICAN-AMERICAN COMPLETIONS (2013) | OVERALL PERCENT AFRICAN-AMERICAN |
|---|-------------------------------------|----------------------------------|
| <b>All Majors</b>   | <b>183,976</b>                      | <b>9.4%</b>                      |
| Business Administration and Management, General               | 18,456                              | 13.0%                            |
| Psychology, General   | 12,841                              | 11.3%                            |
| Registered Nursing/Registered Nurse                           | 10,464                              | 10.0%                            |
| Criminal Justice/Safety Studies                               | 6,209                               | 19.3%                            |
| Sociology   | 5,788                               | 16.9%                            |
| Social Work   | 4,090                               | 21.4%                            |
| Criminal Justice/Law Enforcement Administration               | 3,656                               | 18.8%                            |
| Multi-/Interdisciplinary Studies, Other                       | 3,198                               | 12.4%                            |
| Business/Commerce, General                                    | 3,113                               | 12.0%                            |
| Liberal Arts and Sciences/Liberal Studies                     | 3,104                               | 11.5%                            |
| General Studies   | 2,565                               | 17.1%                            |
| Business Administration, Management and Operations, Other     | 2,237                               | 19.6%                            |
| Health/Health Care Administration/Management                  | 2,157                               | 25.0%                            |
| Early Childhood Education and Teaching                        | 1,777                               | 13.0%                            |
| Mass Communication/Media Studies                              | 1,524                               | 16.0%                            |
| Human Services, General                                       | 1,486                               | 21.3%                            |
| Social Sciences, General                                      | 1,311                               | 13.5%                            |
| Human Resources Management/Personnel Administration, General  | 1,274                               | 17.0%                            |
| Physical Education Teaching and Coaching                      | 1,121                               | 12.2%                            |
| Hospital and Health Care Facilities Administration/Management | 1,108                               | 27.5%                            |

Source: IPEDS<sup>32</sup>

<sup>31</sup> "IPEDS Data Center." Op. cit.

### REGIONAL DEGREE COMPLETIONS

Figure 2.4 displays the top 20 majors for African-Americans in the Mideast region in 2013, selected on the same criteria. Main takeaways from this section include:

- Over 25 percent of degrees in **community organization and advocacy** degree programs were awarded to African-American students. This degree is related to the **sociology** and **social work** programs that are popular nationally and in the region as well.
- **Health professions and related clinical sciences** and **registered nursing** programs in the region report African-American degree completions considerably above the average figure, though the former field is quite small overall.

**Figure 2.4: Top 20 Most Popular Majors for African-Americans  
(by Completions Volume) in the Mideast Region, 2013**

| MAJORS  | 2013 COMPLETIONS<br>(AFRICAN-AMERICANS) | OVERALL PERCENT<br>AFRICAN-AMERICAN |
|---|---|-------------------------------------|
| <b>All Majors</b>                                       | <b>34,487</b>                           | <b>10.4%</b>                        |
| Business Administration and Management, General         | 2,807                                   | 14.4%                               |
| Psychology, General                                     | 2,729                                   | 12.3%                               |
| Registered Nursing/Registered Nurse                     | 2,045                                   | 14.7%                               |
| Sociology   | 1,208                                   | 20.2%                               |
| Liberal Arts and Sciences/Liberal Studies               | 942                                     | 15.7%                               |
| Political Science and Government, General               | 892                                     | 10.6%                               |
| Criminal Justice/Law Enforcement Administration         | 771                                     | 19.9%                               |
| Business/Commerce, General                              | 705                                     | 17.0%                               |
| Social Work   | 674                                     | 24.9%                               |
| Speech Communication and Rhetoric                       | 669                                     | 11.0%                               |
| Criminal Justice/Safety Studies                         | 606                                     | 15.5%                               |
| Information Science/Studies                             | 475                                     | 15.3%                               |
| Journalism  | 346                                     | 16.2%                               |
| Social Sciences, General                                | 323                                     | 14.2%                               |
| Community Organization and Advocacy                     | 269                                     | 27.7%                               |
| Multi-/Interdisciplinary Studies, Other                 | 256                                     | 10.9%                               |
| Health Professions and Related Clinical Sciences, Other | 239                                     | 16.6%                               |
| Human Services, General                                 | 228                                     | 33.4%                               |
| Mass Communication/Media Studies                        | 227                                     | 13.9%                               |
| Early Childhood Education and Teaching                  | 188                                     | 10.5%                               |

Source: IPEDS<sup>33</sup>

<sup>32</sup> "IPEDS Data Center." Op. cit.

<sup>33</sup> "IPEDS Data Center." Op. cit.

### PENNSYLVANIA DEGREE COMPLETIONS

Figure 2.5 shows the top 20 majors for African-Americans in Pennsylvania in 2013. Most notable are the large African-American student populations in **human services, public health education, and substance abuse counseling**.

**Figure 2.5: Top 20 Most Popular Majors for African-Americans  
(by Completions Volume) in Pennsylvania, 2013**

| MAJORS   | 2013 COMPLETIONS<br>(AFRICAN-AMERICANS) | OVERALL PERCENT<br>AFRICAN-AMERICAN |
|--|---|-------------------------------------|
| <b>All Majors</b>  | <b>6,800</b>                            | <b>7.0%</b>                         |
| Business Administration and Management, General              | 551                                     | 10.8%                               |
| Psychology, General  | 435                                     | 7.8%                                |
| Criminal Justice/Safety Studies                              | 226                                     | 13.6%                               |
| Sociology  | 183                                     | 14.7%                               |
| Political Science and Government, General                    | 167                                     | 7.6%                                |
| Liberal Arts and Sciences/Liberal Studies                    | 161                                     | 13.9%                               |
| Speech Communication and Rhetoric                            | 145                                     | 9.4%                                |
| Social Work  | 131                                     | 15.5%                               |
| Criminal Justice/Law Enforcement Administration              | 108                                     | 12.4%                               |
| Early Childhood Education and Teaching                       | 107                                     | 9.8%                                |
| Business/Commerce, General                                   | 102                                     | 10.3%                               |
| Human Services, General                                      | 102                                     | 41.8%                               |
| Journalism   | 78                                      | 11.9%                               |
| Public Health Education and Promotion                        | 62                                      | 47.7%                               |
| Substance Abuse/Addiction Counseling                         | 56                                      | 50.9%                               |
| Religion/Religious Studies                                   | 55                                      | 13.0%                               |
| Bible/Biblical Studies                                       | 52                                      | 14.5%                               |
| Human Resources Management/Personnel Administration, General | 49                                      | 13.8%                               |
| Criminology  | 47                                      | 9.6%                                |
| Social Sciences, General                                     | 47                                      | 20.4%                               |

Source: IPEDS<sup>34</sup>

### DEGREE COMPLETIONS FOR HISPANICS

Figures 2.6 through 2.8 include data for the top 20 majors at the national, regional, and state levels that attract the greatest numbers and concentrations of Hispanic students. The figures only include majors where the percentage of Hispanic completers is greater than the average for this group across all majors at the specified geographic level: 9.4 percent nationally, 8.1 percent in the Mideast region, and 3.9 percent in Pennsylvania.<sup>35</sup> Appendix I includes additional information on the methodology used to make these selections.

<sup>34</sup> "IPEDS Data Center." Op. cit.

<sup>35</sup> "IPEDS Data Center." Op. cit.

### NATIONAL DEGREE COMPLETIONS

Figure 2.6 presents the top 20 majors for Hispanics in 2013, selected based on the criteria outlined earlier. Some evident trends among Hispanic degree conferrals include:

- **Spanish language and literature** is by far the most disproportionately popular major among Hispanic students.
- A cluster of **internationally-focused majors** (international business, international affairs, and political science) are also disproportionately popular, which may be related to higher rates of second-language capability among Hispanic students.
- **Criminal justice, criminology, and sociology** are another significant grouping of degree programs for Hispanic students.

**Figure 2.6: Top 20 Most Popular Majors for Hispanics (by Completions Volume) Nationally, 2013**

| MAJORS  | HISPANIC COMPLETIONS (2013) | OVERALL PERCENT HISPANIC |
|---|-----------------------------|--------------------------|
| <b>All Majors</b>   | <b>184,452</b>              | <b>9.4%</b>              |
| Business Administration and Management, General           | 14,241                      | 10.0%                    |
| Psychology, General                                       | 14,103                      | 12.4%                    |
| Sociology   | 5,641                       | 16.4%                    |
| Political Science and Government, General                 | 5,004                       | 11.9%                    |
| Criminal Justice/Safety Studies                           | 4,886                       | 15.2%                    |
| Multi-/Interdisciplinary Studies, Other                   | 3,911                       | 15.1%                    |
| Spanish Language and Literature                           | 3,502                       | 27.8%                    |
| Liberal Arts and Sciences/Liberal Studies                 | 3,436                       | 12.8%                    |
| Criminal Justice/Law Enforcement Administration           | 2,881                       | 14.8%                    |
| Social Work   | 2,145                       | 11.2%                    |
| Kinesiology and Exercise Science                          | 1,857                       | 9.6%                     |
| Art/Art Studies, General                                  | 1,466                       | 10.7%                    |
| Anthropology  | 1,457                       | 11.9%                    |
| Early Childhood Education and Teaching                    | 1,431                       | 10.4%                    |
| International Business/Trade/Commerce                     | 1,407                       | 20.7%                    |
| Business Administration, Management and Operations, Other | 1,387                       | 12.2%                    |
| Civil Engineering, General                                | 1,343                       | 10.1%                    |
| International Relations and Affairs                       | 1,343                       | 12.3%                    |
| Criminology   | 1,111                       | 15.0%                    |
| Fine/Studio Arts, General                                 | 1,058                       | 9.7%                     |

Source: IPEDS<sup>36</sup>

<sup>36</sup> "IPEDS Data Center." Op. cit.

### REGIONAL DEGREE COMPLETIONS

Figure 2.7 displays the top 20 majors for Hispanics in the Mideast region in 2013. Notable highlights include:

- **Forensic psychology** has a high percentage of Hispanic students, adding a new approach to the criminal justice/criminology cluster.
- **Community organization and advocacy** also emerges on this list, further expanding the related sociology and social work degree cluster with a high population of Hispanic students.

**Figure 2.7: Top 20 Most Popular Majors for Hispanics  
(by Completions Volume) in the Mideast Region, 2013**

| MAJORS  | 2013 COMPLETIONS<br>(HISPANICS) | OVERALL PERCENT<br>HISPANIC |
|---|---------------------------------|-----------------------------|
| <b>All Majors</b>                               | <b>26,981</b>                   | <b>8.1%</b>                 |
| Psychology, General                             | 2,368                           | 10.6%                       |
| Business Administration and Management, General | 1,693                           | 8.7%                        |
| Criminal Justice/Law Enforcement Administration | 884                             | 22.8%                       |
| Sociology                                       | 848                             | 14.2%                       |
| English Language and Literature, General        | 814                             | 8.8%                        |
| Political Science and Government, General       | 749                             | 8.9%                        |
| Liberal Arts and Sciences/Liberal Studies       | 554                             | 9.2%                        |
| Spanish Language and Literature                 | 525                             | 28.5%                       |
| Speech Communication and Rhetoric               | 518                             | 8.5%                        |
| Criminal Justice/Safety Studies                 | 362                             | 9.2%                        |
| Social Work                                     | 325                             | 12.0%                       |
| Information Science/Studies                     | 256                             | 8.3%                        |
| International Relations and Affairs             | 243                             | 8.5%                        |
| Social Sciences, General                        | 235                             | 10.3%                       |
| International Business/Trade/Commerce           | 211                             | 14.3%                       |
| Fine/Studio Arts, General                       | 196                             | 9.9%                        |
| Criminology                                     | 189                             | 11.9%                       |
| Anthropology                                    | 186                             | 9.5%                        |
| Forensic Psychology                             | 171                             | 42.2%                       |
| Community Organization and Advocacy             | 156                             | 16.0%                       |

Source: IPEDS<sup>37</sup>

<sup>37</sup> "IPEDS Data Center." Op. cit.

### PENNSYLVANIA DEGREE COMPLETIONS

Figure 2.8 shows the top 20 majors for Hispanics in Pennsylvania in 2013. Here, **graphic design, advertising, and sports management** emerge on the top 20 list, though degree volumes are all relatively low.

**Figure 2.8: Top 20 Most Popular Majors for Hispanics  
(by Completions Volume) in Pennsylvania, 2013**

| MAJORS  | 2013 COMPLETIONS<br>(HISPANICS) | OVERALL PERCENT<br>HISPANIC |
|---|---------------------------------|-----------------------------|
| <b>Grand Total</b>                              | <b>3,822</b>                    | <b>3.9%</b>                 |
| Psychology, General                             | 267                             | 4.8%                        |
| Political Science and Government, General       | 106                             | 4.9%                        |
| Spanish Language and Literature                 | 96                              | 13.3%                       |
| Marketing/Marketing Management, General         | 92                              | 4.1%                        |
| Criminal Justice/Safety Studies                 | 82                              | 4.9%                        |
| Sociology                                       | 72                              | 5.8%                        |
| Criminal Justice/Law Enforcement Administration | 64                              | 7.3%                        |
| Information Science/Studies                     | 62                              | 6.3%                        |
| International Business/Trade/Commerce           | 51                              | 9.2%                        |
| Business/Commerce, General                      | 44                              | 4.4%                        |
| Social Work                                     | 40                              | 4.7%                        |
| Graphic Design                                  | 36                              | 6.3%                        |
| Journalism                                      | 34                              | 5.2%                        |
| International Relations and Affairs             | 33                              | 5.9%                        |
| Philosophy                                      | 30                              | 5.2%                        |
| Civil Engineering, General                      | 28                              | 4.3%                        |
| Drama and Dramatics/Theatre Arts, General       | 28                              | 5.0%                        |
| Fine/Studio Arts, General                       | 28                              | 6.2%                        |
| Advertising                                     | 27                              | 5.1%                        |
| Sport and Fitness Administration/Management     | 26                              | 4.1%                        |

Source: IPEDS<sup>38</sup>

<sup>38</sup> "IPEDS Data Center." Op. cit.

## SECTION III: TOP ACADEMIC AREAS OF INTEREST BY AGE

In this section, Hanover discusses undergraduate degree completions trends by age group, specifically focusing on degrees that are more popular among traditional college-aged students (those ages 18 to 24). This section also includes a brief discussion of occupational projections for the fastest growing jobs in the United States because students may be attracted to degree programs that relate to these careers.

### PROGRAM AREAS BY AGE

IPEDS data detailing 2013 undergraduate enrollments by age group appear in Figure 3.1. As the data show, traditionally aged students (i.e., those aged 18-24) still account for a considerable majority of students, with 63.3 percent of total undergraduate enrollment. Institutions seeking to maximize enrollments may first want to ensure that they are attracting as many of these students as they can, considering that they account for the largest segment of the market. The remainder of this section discusses majors and fields that are more popular among younger, traditional students.

**Figure 3.1: Percentage of Total Enrollment by Age Group, 2013**

| AGE GROUP          | 2013 ENROLLMENT   | PERCENT OF TOTAL |
|--------------------|-------------------|------------------|
| Age 18-19          | 4,340,295         | 24.2%            |
| Age 20-21          | 4,127,651         | 23.0%            |
| Age 22-24          | 2,894,771         | 16.1%            |
| Age 25-29          | 2,039,270         | 11.4%            |
| Age 30-34          | 1,221,071         | 6.8%             |
| Age 35-39          | 792,438           | 4.4%             |
| Age 40-49          | 1,031,849         | 5.7%             |
| Age 50-64          | 544,004           | 3.0%             |
| Age 65 and older   | 57,000            | 0.3%             |
| Age under 18       | 898,525           | 5.0%             |
| <b>Grand Total</b> | <b>17,946,874</b> | <b>100.0%</b>    |

Source: IPEDS<sup>39</sup>

### ACT COLLEGE CHOICE REPORT

Data from the ACT College Choice Report helps illuminate the majors that are popular among students of traditional college age. When high school students register for the ACT, they may select a planned major upon enrollment, and in 2013, 79 percent did so (another 15 percent indicated being undecided). Slightly more female students than male students (82 percent compared to 77 percent) selected a planned major.<sup>40</sup> Of note, 50 percent of all

<sup>39</sup> "IPEDS Data Center." Op. cit.

<sup>40</sup> "College Choice Report: High School Class of 2013: Planned Major Status." ACT College Choice Report. <http://www.act.org/collegechoice/13/plannedmajorstatus.html>

students, regardless of gender, said that “the availability of a particular college major or program of study [is the] most important factor in selecting a college.”<sup>41</sup>

Figure 3.2 displays the planned majors for the high school graduating class of 2013. Health sciences are the most popular among women, while the two most popular planned majors for men are engineering and business. This suggests that the degree completion trends identified in Section I remain true for incoming students.

**Figure 3.2: Planned Majors for ACT Takers in 2013**

| PLANNED MAJOR AREA                          | OVERALL PERCENTAGE OF TEST-TAKERS | FEMALE TEST-TAKERS | MALE TEST-TAKERS |
|---|-----------------------------------|--------------------|------------------|
| Health Sciences and Technologies            | 24.0%                             | 32.0%              | 14.0%            |
| Social Sciences and Law                     | 11.0%                             | 11.0%              | 8.0%             |
| Arts: Visual and Performing                 | 7.0%                              | 9.0%               | 8.0%             |
| Education                                   | 7.0%                              | 9.0%               | 4.0%             |
| Business                                    | 11.0%                             | 9.0%               | 15.0%            |
| Sciences: Biological and Physical           | 6.0%                              | 9.0%               | 7.0%             |
| Health Administration and Assisting         | 5.0%                              | 6.0%               | 2.0%             |
| Community, Family, and Personal Services    | 4.0%                              | 4.0%               | 3.0%             |
| Communications                              | 2.0%                              | 3.0%               | 2.0%             |
| Engineering                                 | 9.0%                              | 3.0%               | 17.0%            |
| English and Foreign Languages               | 1.0%                              | 2.0%               | 0.8%             |
| Ag. and Natural Resources Conservation      | 2.0%                              | 2.0%               | 3.0%             |
| Computer Science and Mathematics            | 3.0%                              | 0.9%               | 6.0%             |
| Architecture                                | 2.0%                              | 0.9%               | 2.0%             |
| Philosophy, Religion, and Theology          | 0.7%                              | 0.4%               | 0.8%             |
| Engineering Technology and Drafting         | 2.0%                              | 0.3%               | 4.0%             |
| Area, Ethnic, and Multidisciplinary Studies | 0.1%                              | 0.2%               | 0.1%             |
| Repair, Production, and Construction        | 1.0%                              | 0.1%               | 3.0%             |

Source: ACT College Choice Report<sup>42</sup>

<sup>41</sup> “College Choice Report: High School Class of 2013: Key Findings.” ACT College Choice Report. <http://www.act.org/collegechoice/13/p1-findings.html>

<sup>42</sup> [1] “College Choice Report: High School Class of 2013: Best-Fitting Major.” ACT College Choice Report. <http://www.act.org/collegechoice/13/bestfit.html> [2] “College Choice Report: High School Class of 2013: Choice of Planned Major.” ACT College Choice Report. <http://www.act.org/collegechoice/13/plannedmajorchoice.html>

The ACT report also followed the high school class of 2013 through their first year of college. In total, 39 percent declared a major in their first year.<sup>43</sup> The selection of students at four-year institutions and their declared majors is presented in Figure 3.3. As the data show, the planned major area did not always translate to the declared major area, with more majors than initially planned occurring in biological and physical sciences, business, and community, family, and personal services. The number of declared health sciences and technologies majors is just half of those who planned to major in the subject—it is unclear if these students are simply later to declare majors in general or if they have switched to an undergraduate focus in the life sciences (which would help to explain the large increase seen in biological and physical sciences).

**Figure 3.3: Planned and Declared Majors for ACT Test Takers in 2013**

| AREA OF STUDY                                  | PLANNED MAJOR AREA | DECLARED MAJOR |
|--|--------------------|----------------|
| Health Sciences and Technologies               | 25%                | 13%            |
| Business                                       | 12%                | 15%            |
| Engineering                                    | 12%                | 12%            |
| Social Sciences and Law                        | 10%                | 10%            |
| Sciences: Biological and Physical              | 10%                | 16%            |
| Arts: Visual and Performing                    | 7%                 | 6%             |
| Education                                      | 6%                 | 6%             |
| Communications                                 | 3%                 | 4%             |
| Computer Science and Mathematics               | 3%                 | 4%             |
| Health Administration and Assisting            | 3%                 | 1%             |
| Community, Family, and Personal Services       | 2%                 | 7%             |
| Agriculture and Natural Resources Conservation | 2%                 | 2%             |
| English and Foreign Languages                  | 2%                 | 2%             |
| Architecture                                   | 1%                 | 1%             |
| Engineering Technology and Drafting            | 1%                 | 1%             |
| Philosophy, Religion, and Theology             | 0.5%               | 0.5%           |
| Repair, Production, & Construction             | 0.4%               | 0.5%           |
| Area, Ethnic, and Multidisciplinary Studies    | 0.1%               | 0.1%           |

Source: ACT College Choice Report<sup>44</sup>

<sup>43</sup> The analysis excludes students who selected Liberal and General Studies and other vague majors, as some colleges will automatically declare students to “General Studies” until they actually do select a major. For this and other notes, see: “College Choice Report: High School Class of 2013: Technical Notes.” ACT College Choice Report. <http://www.act.org/collegechoice/13/p2-technotes.html>

<sup>44</sup> “College Choice Report: High School Class of 2013: Consistency of College Major.” ACT College Choice Report. <http://www.act.org/collegechoice/13/p2-consistency.html>

Overall, 57 percent of students who indicated a planned major also declared the same major in their first year at a four-year institution. When students wait until their second year to declare a major, this “consistency rate” falls to 49 percent. The consistency rate is highest among business, engineering, construction, and health sciences students (Figure 3.4). The overall rate is the same for both male and female students, but women are more likely to be consistently interested in health administration and education, while men are more likely to both plan to major and declare a major in philosophy or engineering.<sup>45</sup>

**Figure 3.4: Percentage of ACT Test-Takers Ultimately Following a Planned Major, by Major Area**

| PLANNED MAJOR AREA                             | CONSISTENCY RATE |
|--|------------------|
| Business                                       | 63%              |
| Engineering                                    | 56%              |
| Repair, Production, and Construction           | 56%              |
| Health Sciences and Technologies               | 55%              |
| Arts: Visual and Performing                    | 50%              |
| Agriculture and Natural Resources Conservation | 49%              |
| Computer Science and Mathematics               | 48%              |
| Communications                                 | 47%              |
| Education                                      | 46%              |
| Sciences: Biological and Physical              | 44%              |
| Social Sciences and Law                        | 42%              |
| Community, Family, and Personal Services       | 41%              |
| English and Foreign Languages                  | 40%              |
| Philosophy, Religion, and Theology             | 31%              |
| Architecture                                   | 22%              |
| Engineering Technology and Drafting            | 14%              |
| Area, Ethnic, and Multidisciplinary Studies    | 8%               |
| Health Administration and Assisting            | 5%               |

Source: ACT College Choice Report<sup>46</sup>

## COMMON OCCUPATIONS FOR COLLEGE GRADUATES

Academic area demand among traditional students may be driven by the labor market. This final section uses Bureau of Labor Statistics data to indicate the occupations with the greatest projected job growth.

<sup>45</sup> [1] Ibid. [2] “College Choice Report: High School Class of 2013: Planned-Declared Major Consistency.” ACT College Choice Report. <http://www.act.org/collegechoice/13/p3-major-consistency.html>

<sup>46</sup> Ibid.

Figure 3.5 shows the occupations with the largest volume and highest rates of projected job growth from 2012 to 2022 nationally, including only those occupations that generally require some postsecondary undergraduate education for entry (an associate's degree, a non-degree award, or a bachelor's degree). The majority of positions shown are in the health care fields, and education, computer science, and business are also well represented. These occupational projections suggest that the most common majors correspond to opportunities in the labor market.

**Figure 3.5: Fastest-Growing Occupations, Volume and Percentage Growth, 2012-2022**  
**Numbers in Thousands**

| OCCUPATION   | EMPLOYMENT       |                  | CHANGE, 2012-22 |             | EDUCATION REQUIRED       |
|--|------------------|------------------|-----------------|-------------|--------------------------|
|  | 2012             | 2022             | NUMBER          | PERCENT     |                          |
| <b>Total, All Occupations</b>                        | <b>145,355.8</b> | <b>160,983.7</b> | <b>15,628.0</b> | <b>10.8</b> | <b>n/a</b>               |
| <b>Highest volume growth</b>                         |                  |                  |                 |             |                          |
| Registered nurses                                    | 2,711.5          | 3,238.4          | 526.8           | 19.4        | Associate's              |
| Nursing assistants                                   | 1,479.8          | 1,792.0          | 312.2           | 21.1        | Postsecondary non-degree |
| General and operations managers                      | 1,972.7          | 2,216.8          | 244.1           | 12.4        | Bachelor's               |
| Licensed practical and licensed vocational nurses    | 738.4            | 921.3            | 182.9           | 24.8        | Postsecondary non-degree |
| Elementary school teachers, except special education | 1,361.2          | 1,529.1          | 167.9           | 12.3        | Bachelor's               |
| Accountants and auditors                             | 1,275.4          | 1,442.2          | 166.7           | 13.1        | Bachelor's               |
| Medical assistants                                   | 560.8            | 723.7            | 162.9           | 29.0        | Postsecondary non-degree |
| Software developers, applications                    | 613.0            | 752.9            | 139.9           | 22.8        | Bachelor's               |
| Management analysts                                  | 718.7            | 852.5            | 133.8           | 18.6        | Bachelor's               |
| <b>Highest rate of growth</b>                        |                  |                  |                 |             |                          |
| Interpreters and translators                         | 63.6             | 92.9             | 29.3            | 46.1        | Bachelor's               |
| Diagnostic medical sonographers                      | 58.8             | 85.9             | 27.0            | 46.0        | Associate's              |
| Occupational therapy assistants                      | 30.3             | 43.2             | 12.9            | 42.6        | Associate's              |
| Genetic counselors                                   | 2.1              | 3.0              | 0.9             | 41.2        | Master's                 |
| Physical therapist assistants                        | 71.4             | 100.7            | 29.3            | 41.0        | Associate's              |
| Skincare specialists                                 | 44.4             | 62.0             | 17.7            | 39.8        | Postsecondary non-degree |
| Information security analysts                        | 75.1             | 102.5            | 27.4            | 36.5        | Bachelor's               |
| Meeting, convention, and event planners              | 94.2             | 125.4            | 31.3            | 33.2        | Bachelor's               |
| Therapists, all other                                | 28.8             | 37.9             | 9.1             | 31.7        | Bachelor's               |
| Market research analysts and marketing specialists   | 415.7            | 547.2            | 131.5           | 31.6        | Bachelor's               |

Source: BLS<sup>47</sup>

<sup>47</sup> "Occupational employment, job openings and worker characteristics." Bureau of Labor Statistics Employment Projections. [http://www.bls.gov/emp/ep\\_table\\_107.htm](http://www.bls.gov/emp/ep_table_107.htm)

## APPENDIX I: REPORT METHODOLOGY

All U.S. institutions that receive or apply for Title IV federal funding report degree conferrals annually, classified by Classification of Instructional Programs (CIP) code, to the NCES' Integrated Postsecondary Education Data System (IPEDS).<sup>48</sup> IPEDS degree completions data provide a way to assess the market for an academic program, but the data do have some limitations. In particular, there is no single standard for classifying degree programs. While descriptions exist for each CIP code, institutions classify their degree programs independently. Thus, two institutions may classify virtually identical programs under different CIP codes. Accordingly, the data for any specific CIP code may not capture all relevant completions.

For this report, Hanover analyzed the number of degree completions in 2013 by major, gender, and race or ethnicity, as each institution reports this information to IPEDS. Then, Hanover ranked the data according to the largest number of degree completions for each demographic subgroup analyzed. Rankings are presented for the United States as a whole; the Mideast region (which includes Delaware, the District of Columbia, Maryland, New Jersey, New York, and Pennsylvania); and the Commonwealth of Pennsylvania.

To determine the percentage of total completions for each major accounted for by each demographic subgroup, Hanover compared the total number of completions to the number of reported completions for that demographic. The spreadsheet accompanying this report, "Completions Data Supplement," contains the top 40 such majors for each demographic subgroup. The number of completions in 2013 for each subgroup is presented in descending order, accompanied by the percentage of total completions from within that particular subgroup.

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<sup>48</sup> "IPEDS Data Center." Op. cit.

Figure A1.1 shows an example of the process used to narrow the top 40 majors to the top 20. In the Mideast region in 2013, 2,807 African-Americans completed bachelor's degrees reported as CIP code 52.0201, "Business Administration and Management, General." A total of 19,540 completions under that CIP code in the region were recorded that year, meaning that African-Americans accounted for 14.4 percent of the total number of degree completions. Hanover used the same method to determine the percentage of African-American completions overall, including under all CIP codes (10.4 percent). Therefore, any program with a value above 10.4 percent has an above-average number of African-Americans, the criterion for inclusion in Sections I and II. In the example below, three of the majors show an above-average number, while two did not.

**Figure A1.1: Example of Report Methodology**

| MAJOR   | 2013 REGIONAL COMPLETIONS | 2013 COMPLETIONS (AFRICAN-AMERICANS) | PERCENT AFRICAN-AMERICAN | ABOVE AVERAGE/ INCLUDED? |
|---|---------------------------|--------------------------------------|--------------------------|--------------------------|
| <b>All Majors</b>                               | <b>332,267</b>            | <b>34,487</b>                        | <b>10.4%</b>             | <b>n/a</b>               |
| Business Administration and Management, General | 19,540                    | 2,807                                | 14.4%                    | Yes                      |
| Psychology, General                             | 22,276                    | 2,729                                | 12.3%                    | Yes                      |
| Registered Nursing/ Registered Nurse            | 13,874                    | 2,045                                | 14.7%                    | Yes                      |
| Biology/Biological Sciences, General            | 12,128                    | 1,164                                | 9.6%                     | No                       |
| Accounting                                      | 8,415                     | 949                                  | 9.1%                     | No                       |

Source: IPEDS<sup>49</sup>

<sup>49</sup> "IPEDS Data Center." Op. cit.

## APPENDIX II: ECOTOURISM

**Ecotourism appears to be a relatively new degree field; only five institutions in the United States recorded completions at the bachelor's degree level in 2013.** The overall number of national completions from 2010 to 2013 has increased, but drawing conclusions based on these preliminary data indicators is difficult due to the small number of conferrals. Additional research would be required to better understand demand for this type of program.

Figure A2.1 details the CIP code that best corresponds to ecotourism, "Natural Resource Recreation and Tourism," which was created in 2010. As seen in Figure A2.2, five institutions nationwide offer ecotourism undergraduate programs, and none are located in the Mideast region. The gender distribution within the degree program is majority male, as shown in Figure A2.3.

**Figure A2.1: Ecotourism NCES CIP Code**

| CIP CODE | CIP TITLE                               | DESCRIPTION   |
|----------|---|---|
| 03.0207  | Natural Resource Recreation and Tourism | A program that prepares individuals to plan, develop, and manage tourism in a natural resource setting, with an emphasis on applying environmentally sound, culturally sensitive, and economically sustainable principles. Includes instruction in environmental studies; natural resource management and interpretation; tourism planning, management, and policies; public land use management and policies; communications; marketing; and public relations. [Ecotourism is among the examples.] |

Source: IPEDS<sup>50</sup>

**Figure A2.2: Ecotourism Bachelor's Degree Completions, 2009-2013**

| AWARD LEVEL                           | 2009       | 2010      | 2011      | 2012      | 2013      |
|---------------------------------------|------------|-----------|-----------|-----------|-----------|
| <b>National Completions</b>           | <b>n/a</b> | <b>33</b> | <b>58</b> | <b>48</b> | <b>74</b> |
| Central Lakes College-Brainerd        | n/a        | 0         | 1         | 15        | 5         |
| Colorado State University-Ft. Collins | n/a        | 0         | 0         | 0         | 7         |
| University of Georgia                 | n/a        | 12        | 13        | 8         | 22        |
| University of Idaho                   | n/a        | 0         | 28        | 12        | 10        |
| University of Vermont                 | n/a        | 21        | 16        | 13        | 30        |

Source: IPEDS<sup>51</sup>

**Figure A2.3: Ecotourism Degree Completions by Gender, 2009-2013**

| CATEGORY                 | 2009       | 2010         | 2011         | 2012         | 2013         |
|--------------------------|------------|--------------|--------------|--------------|--------------|
| <b>Total Completions</b> | <b>n/a</b> | <b>33</b>    | <b>58</b>    | <b>48</b>    | <b>74</b>    |
| Male Completions         | n/a        | 24           | 40           | 35           | 49           |
| <b>Male Percent</b>      | <b>n/a</b> | <b>72.7%</b> | <b>69.0%</b> | <b>72.9%</b> | <b>66.2%</b> |
| Female Completions       | n/a        | 9            | 18           | 13           | 25           |
| <b>Female Percent</b>    | <b>n/a</b> | <b>27.3%</b> | <b>31.0%</b> | <b>27.1%</b> | <b>33.8%</b> |

Source: IPEDS<sup>52</sup>

<sup>50</sup> "IPEDS Data Center." Op. cit.

<sup>51</sup> Ibid.

<sup>52</sup> Ibid.

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