

# 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.

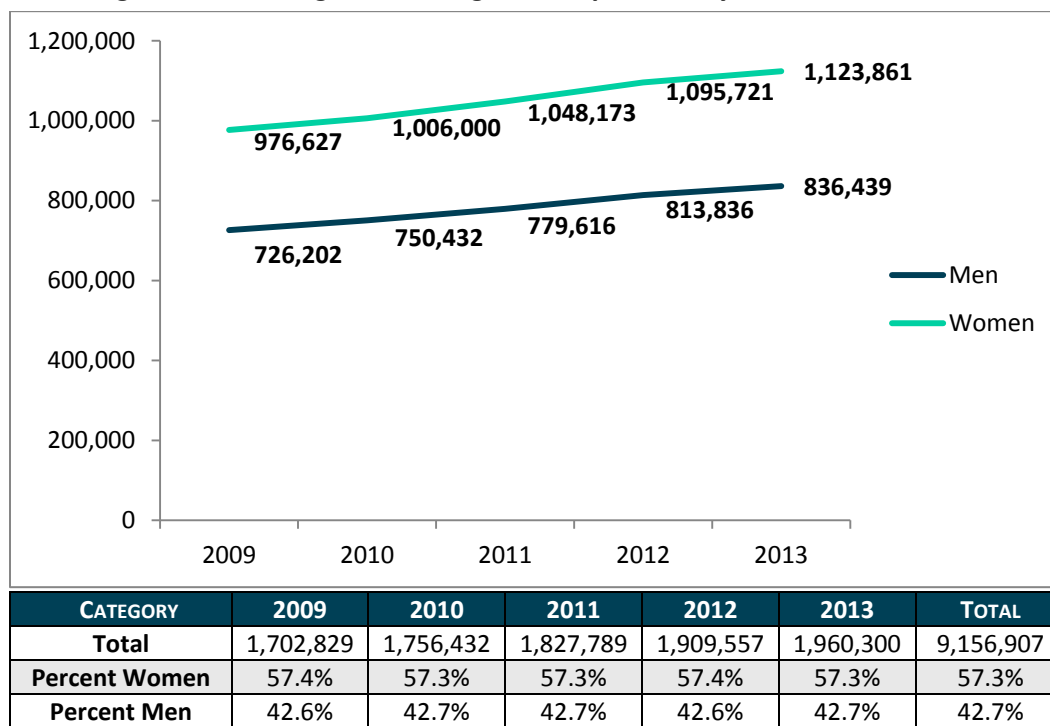
## SECTION I: TOP ACADEMIC AREAS OF INTEREST BY GENDER

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 (MEN)	OVERALL 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&cid=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 (WOMEN)	OVERALL PERCENT 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.

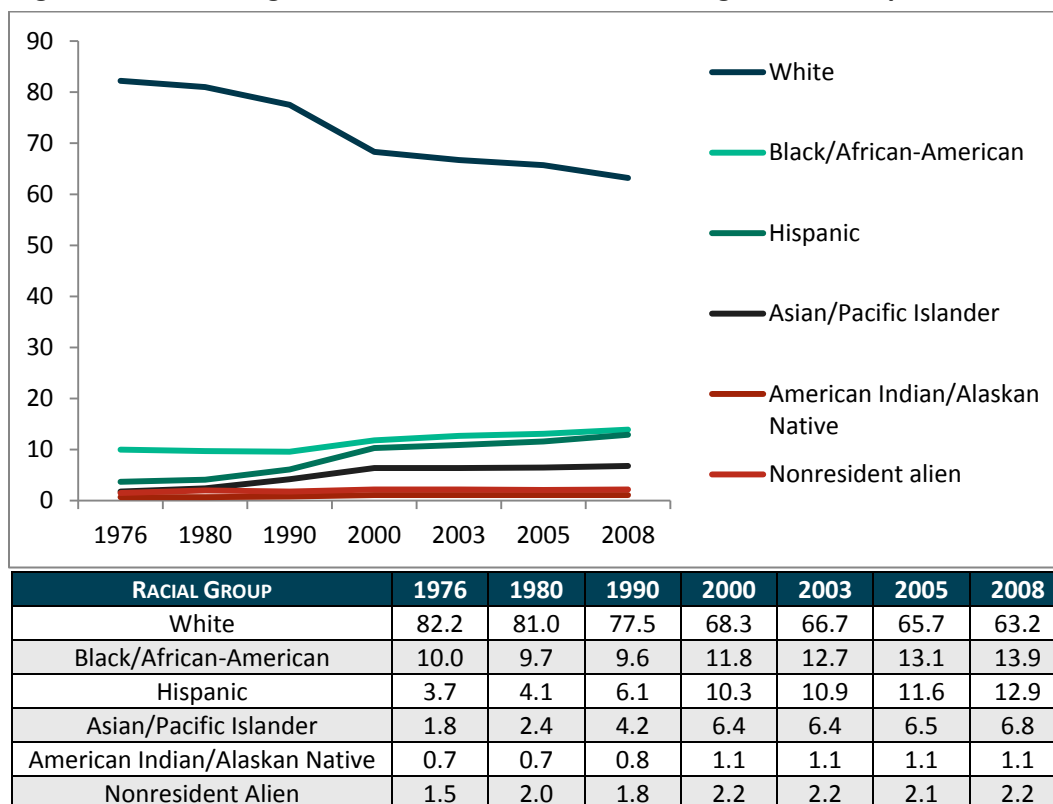
## SECTION II: TOP ACADEMIC AREAS OF INTEREST FOR MINORITY GROUPS

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/ PHYSICAL SCIENCES	BUSINESS	SOCIAL SCIENCES	ENGINEERING/ COMPUTER SCIENCE	HUMANITIES/ 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 (AFRICAN-AMERICANS)	OVERALL PERCENT 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>32</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 (AFRICAN-AMERICANS)	OVERALL PERCENT 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 (HISPANICS)	OVERALL PERCENT 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 (HISPANICS)	OVERALL PERCENT 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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