

Long-term Trends in Degrees Conferred in Geography

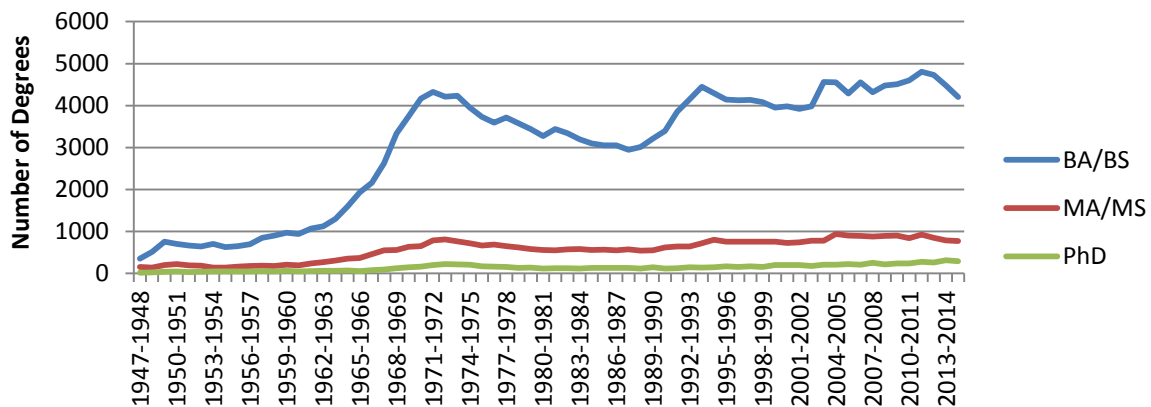
In this report you will find information and figures illustrating long-term trends in degrees conferred in Geography in the U.S. The report describes overall growth trends in Geography, long-term trends in the annual number of bachelor’s, master’s, and doctoral degrees awarded in Geography and related disciplines, and how the gender balance has changed by degree level over time.

Geography Growth Trends

The National Center for Education Statistics (NCES) began reporting annual data on the number of Geography bachelor’s, master’s and doctoral degrees granted in 1948. Since then, the number of Geography degrees awarded has experienced significant growth at all levels.¹

Figure 1 depicts the change over time, from 1948 to 2015.² Over that time period the number of bachelor’s degrees awarded has increased at an annual rate of 3.75 percent, the number of master’s degrees by 2.42 percent, and the number of doctoral degrees by 4.35 percent.

Figure 1. Degrees awarded annually in Geography, 1948-2015



¹ Source: National Center for Education Statistics.

² Source: Integrated Postsecondary Education Data System of the National Center for Education Statistics (IPEDS)

The rate of growth has fluctuated significantly between degree levels over time. In general, growth in the number of Geography degrees awarded can be divided into three loosely-defined eras:

- The first era lasted from the late 1940s through the early 1970s, and saw rapid discipline-wide growth across all degree levels.
- The second era, from the early 1970s through the mid-1980s saw moderate discipline-wide declines in growth across all degree levels.
- The third era can be subdivided into three separate periods: 1) from the mid-1980s through the mid-1990s, when growth in degrees awarded saw a significant discipline-wide rebound from the previous era of decline; 2) from the mid-1990s to 2012, when growth slowed to a moderate pace at the bachelor's and master's level but accelerated at the doctoral level, and 3) from 2012 to 2015, when the bachelor's and master's degrees saw moderate declines and the doctoral degree saw continued moderate growth.

Table 1 depicts the different periods described above and breaks them down in terms of total and annual percent growth.³

Table 1. Total and annual percent growth in Geography degrees awarded by degree level over selected time periods

	BA/BS		MA/MS		PhD	
	Total % Growth	Annual % Growth	Total % Growth	Annual % Growth	Total % Growth	Annual % Growth
1948-1971	1067.23%	11.28%	313.38%	6.36%	864.71%	10.36%
1971-1985	-25.61%	-2.09%	-13.41%	-1.02%	-18.29%	-1.43%
1985-1995	38.55%	3.31%	43.59%	3.68%	13.43%	1.27%
1995-2012	11.92%	0.66%	15.12%	0.83%	80.92%	3.55%
2012-2015	-12.57%	-4.38%	-16.36%	-5.78%	6.91%	2.25%
Total Change, 1948 - 2015	1077.31%	3.75%	394.90%	2.42%	1629.41%	4.35%

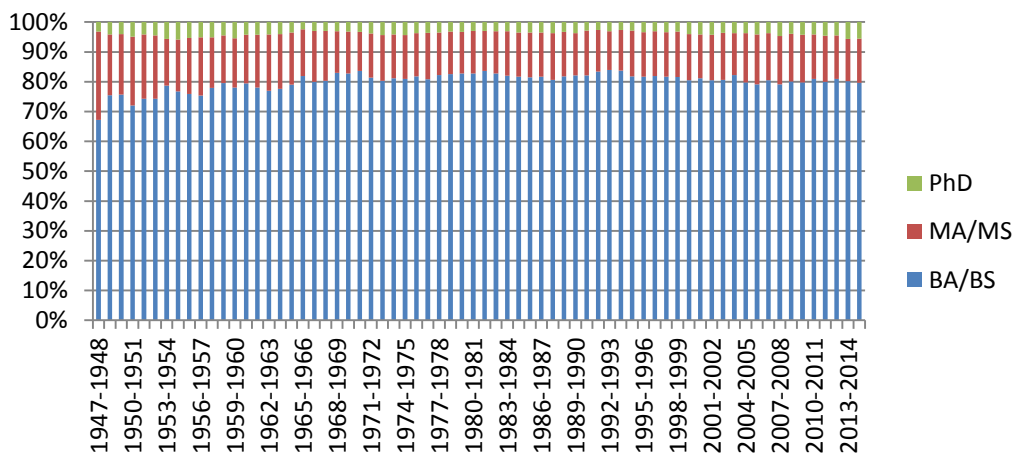
³ Source: Integrated Postsecondary Education Data System of the National Center for Education Statistics (IPEDS)

The late 1940s through the mid-1960s saw the most fluctuation in the overall proportion of degrees granted by degree level, largely due to a gradual decline in the proportion of master’s degrees and increase in the proportion of bachelor’s degrees awarded.

Since the mid-1960s, the overall proportion of Geography degrees awarded by degree level has remained relatively stable: Bachelor’s degrees have generally accounted for 80 to 83 percent of all degrees awarded, master’s degrees 14 to 17 percent, and doctoral degrees 3 to 6 percent.

Figure 2 illustrates how the proportions have changed over time.⁴

Figure 2. Change in proportion of Geography degrees awarded by degree level, 1948-2015



Geography, GIS & Cartography, and Geography, Other

In addition to Geography, the NCES also reports degrees conferred for two closely related but separate disciplinary categories – *Geographic Information Science and Cartography*⁵, and *Geography, Other* – all of which are included within the broader category of *Social Sciences*. In order to accurately interpret recent trends in degrees awarded in Geography, it is important to examine it within the broader context of changes that have occurred across these additional disciplinary categories over the past several years, as their areas of focus fall within the academic domains of most Geography programs.⁶

Figure 3 depicts degrees awarded in Geographic Information Science (GIS) and Cartography, from 2007 to 2015.⁷ Over that time period the number of bachelor’s degrees awarded has increased at an annual

⁴ Source: Integrated Postsecondary Education Data System of the National Center for Education Statistics (IPEDS)

⁵ Classification of Instructional Programs (CIP) code changed from *Cartography* to *Geographic Information Science and Cartography* in 2013

⁶ Source: Amy E. Frazier and Thomas A. Wikle (2017) *Renaming and Rebranding within U.S. and Canadian Geography Departments, 1990-2014*

⁷ Source: Integrated Postsecondary Education Data System of the National Center for Education Statistics (IPEDS)

rate of 16.91 percent, the number of master’s degrees by 41.90 percent, and the number of doctoral degrees by 16.95 percent.

Figure 3. Degrees awarded annually in GIS and Cartography, 2007-2015

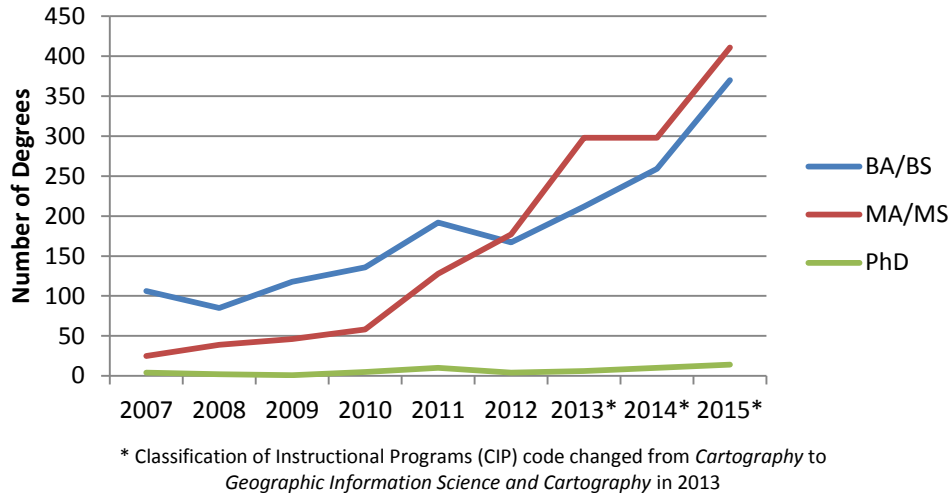
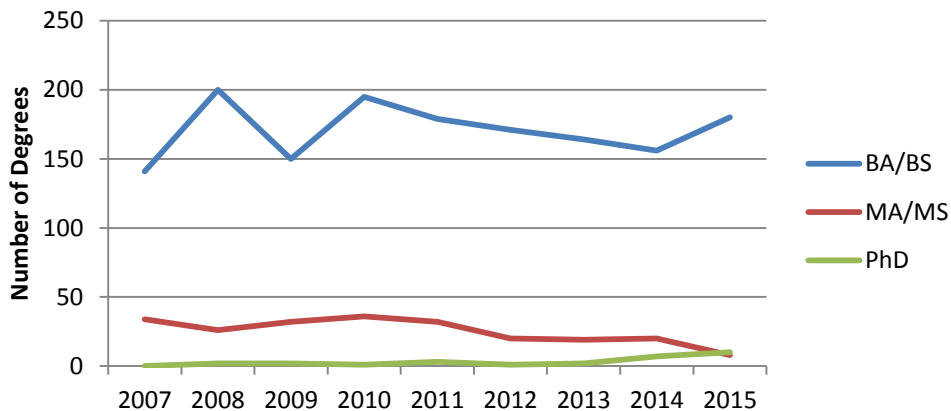


Figure 4 depicts degrees awarded in Geography, Other, from 2007 to 2015.⁸ Over that time period the number of bachelor’s degrees awarded has increased at an annual rate of 3.10 percent, the number of master’s degrees has decreased by 16.55 percent, and the number of doctoral degrees increased from zero to ten.⁹

Figure 4. Degrees awarded annually in Geography, Other, 2007-2015



⁸ Source: Integrated Postsecondary Education Data System of the National Center for Education Statistics (IPEDS)

⁹ Because there were zero Geography, Other PhDs awarded in 2007, annual growth rate was not calculated

While the Geography, Other discipline has shown growth at the bachelor's and doctoral degree levels and a decline at the master's level, there has been a significant amount of annual fluctuation for this discipline, especially at the bachelor's level. The numbers of degrees awarded are also very low in comparison to the other disciplines discussed here, so analysis of the short-trends for this discipline is of limited relevance to Geography as a whole.

On the other hand, short term trends for the Geographic Information Science and Cartography discipline can potentially tell us a lot about current trends in degrees awarded in Geography. While degrees awarded in Geography at the bachelor's and master's degree level decreased by a respective 0.99 percent and 1.72 percent annually between 2007 and 2015, bachelor's and master's degrees awarded in Geographic Information Science and Cartography increased by 16.91 percent and 41.90 percent, respectively. Could the rise in degrees awarded in Geographic Information Science and Cartography account for the decline in Geography degrees awarded at the bachelor's and master's level? Further research is needed in this area.

Figures 5, 6, and 7, below, compare the annual growth rates for bachelor's, master's, and doctoral degrees awarded in Geography, GIS and Cartography, and Geography, Other, from 2007 to 2015.

Figure 5. Bachelor's degrees awarded annually in Geography, GIS and Cartography, and Geography, Other, 2007-2015

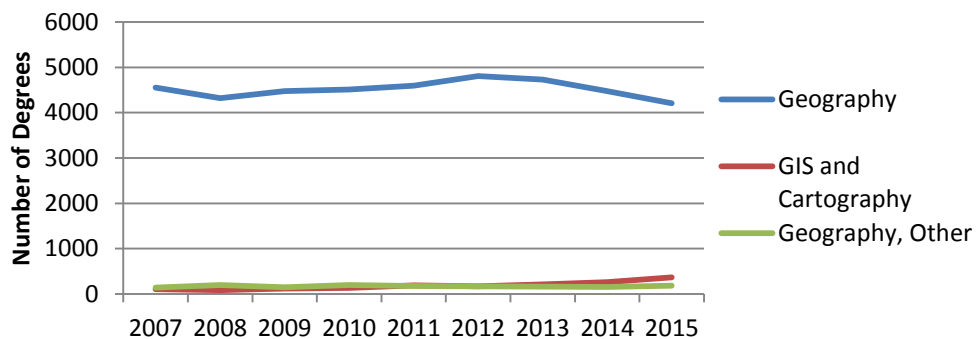


Figure 6. Master's degrees awarded annually in Geography, GIS and Cartography, and Geography, Other, 2007-2015

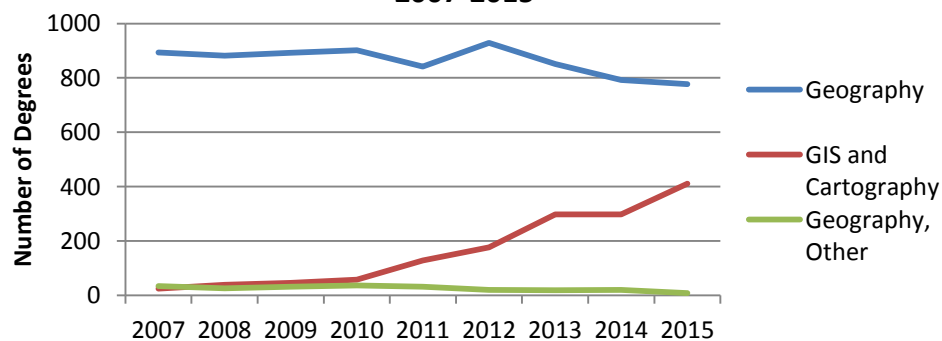


Figure 7. Doctoral degrees awarded annually in Geography, GIS and Cartography, and Geography, Other, 2007-2015

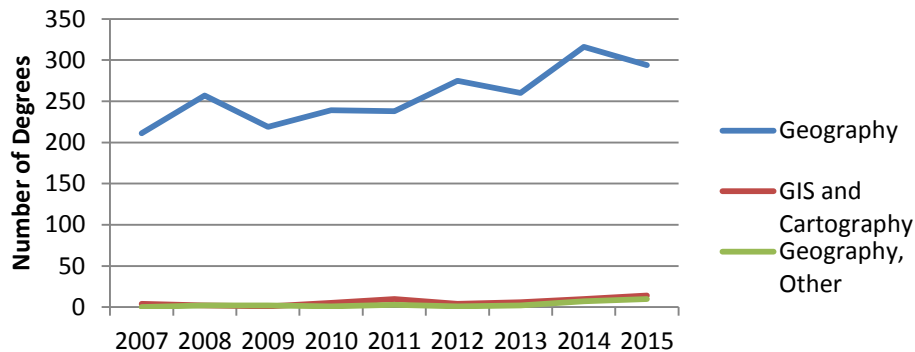


Table 2 compares trends in the number of degrees awarded in Geography, Geographic Information Systems and Cartography, Geography, Other, and all three of these disciplines combined from 2007 to 2015. Trends for all social sciences and all disciplines are also depicted in the bottom two rows.

Table 2. Total and annual percent growth in Geography and related disciplines by degree level, 2007-2015¹⁰

	BA/BS		MA/MS		PhD	
	Total % Change	Annual % Change	Total % Change	Annual % Change	Total % Change	Annual % Change
Geography	-7.67%	-.99%	-12.99%	-1.72%	39.34%	4.23%
GIS and Cartography	249.06%	16.91%	1544%	41.90%	250%	16.95%
Geography, Other	27.66%	3.10%	-76.47%	-16.55%	N/A*	N/A*
Geography, GIS/Cartography, Geography/Other combined	-.96%	-.12%	25.63%	2.89%	47.91%	5.01%
All Social Sciences	7.07%	0.86%	15.90%	1.86%	26.51%	2.98%
All Disciplines	24.33%	2.76%	25.49%	2.88%	N/A**	N/A**

*Because there were zero Geography, Other PhDs awarded in 2007, growth rate was not calculated

** Because the NCES criteria for PhDs was revised after 2010, trends were not calculated for all disciplines

¹⁰ Source: Digest of Education Statistics, 2016. Available from the National Center for Education Statistics at: <https://nces.ed.gov/programs/digest/>

The following key trends depicted in Table 2 are worth noting:

- The number of bachelor's and master's degrees awarded in Geography decreased at respective annual rates of .99 percent and 1.72 percent, while the number of bachelor's and master's degrees awarded in GIS and Cartography increased at rates of 16.91 percent and 41.90 percent, respectively.
- When combining Geography, GIS and Cartography, and Geography, Other into a single category, the number of bachelor's degrees awarded decreased at a much smaller annual rate of only 0.12 percent, while the number of master's degrees awarded actually increased at an annual rate of 2.89 percent.
- The number of bachelor's and master's degrees awarded in all social sciences grew at average annual rates of 0.86 percent and 1.86 percent, respectively, while degrees awarded in Geography declined at roughly the same rates.
- An even larger discrepancy exists when comparing bachelor's and master's degrees awarded in Geography with those of all disciplines, which have seen average annual growth rates of 2.76 percent and 2.88 percent, respectively.
- Despite the negative growth trends for Geography, bachelor's and master's degrees awarded in GIS and Cartography have far outpaced those of all social sciences and all disciplines.
- When combining Geography, GIS and Cartography, and Geography, Other into a single category, the number of bachelor's degrees awarded still compares negatively to all social sciences and all disciplines. However, the number of master's degrees awarded outpaces all social sciences (2.89 percent vs. 1.86 percent) and is about even with all disciplines (2.89 percent vs. 2.88 percent).
- While it is noteworthy that the number of doctoral degrees awarded in Geography increased at an average annual rate of 4.23 percent, the number of doctoral degrees awarded in GIS and Cartography and Geography, Other is so small that the trends are not worth comparing.

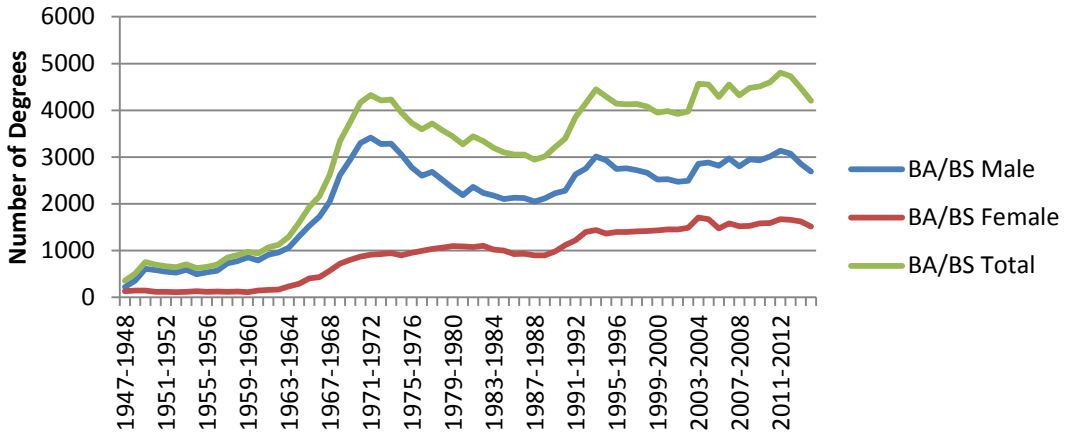
Geography Bachelor's Degree Gender Data

The total number of bachelor's degrees awarded in Geography has grown from 357 in 1948 to 4,203 in 2015, an overall increase of 1,077.31 percent and an annual growth rate of 3.75 percent. The total number of bachelor's degrees awarded in Geography peaked in 2012, at 4,807. The number of bachelor's degrees awarded to males peaked in 1972, at 3,416. The number of bachelor's degrees awarded to females peaked in 2004, at 1,706.

Figure 8 shows the change over time, from 1948 to 2015.¹¹

¹¹ Source: Integrated Postsecondary Education Data System of the National Center for Education Statistics (IPEDS)

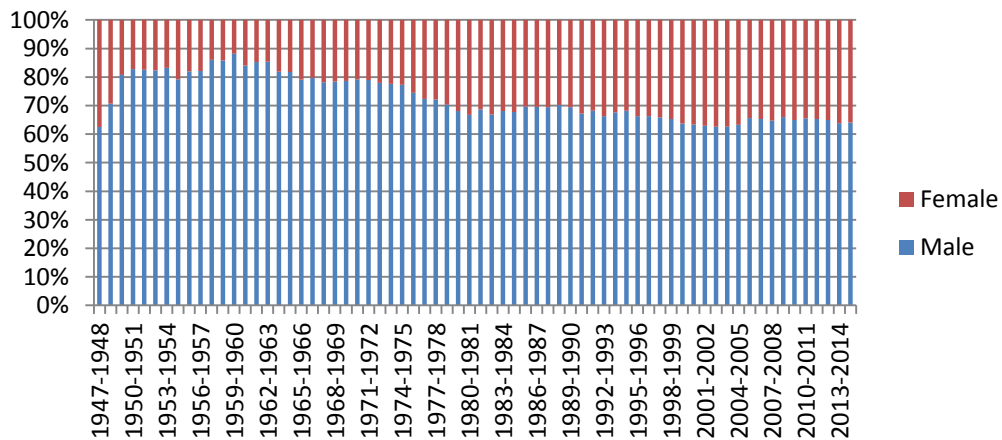
Figure 8. Bachelor's degrees awarded in Geography by gender, 1948-2015



In 1948, 63 percent of Geography bachelor’s degree awardees were male, and 37 percent were female. Over the next decade the proportion shifted steadily toward males; in 1960, the ratio was 88 percent male and only 12 percent female. From 1960 through the early 1980s, the proportion of females gradually rose to around 30 percent, and has generally remained steady in the low to mid 30s since.

Figure 9 shows how the proportions have changed over time.¹²

Figure 9. Change in gender balance in bachelor's degrees awarded in Geography, 1948-2015



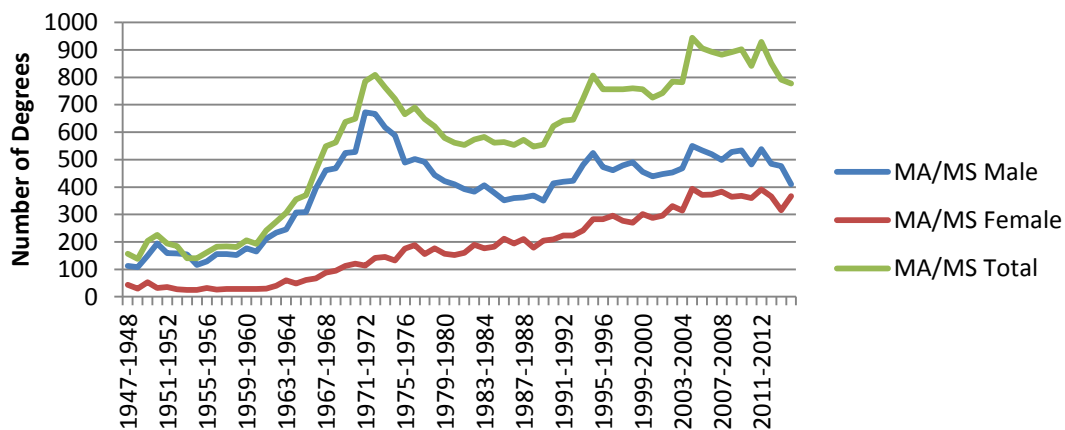
¹² Source: Integrated Postsecondary Education Data System of the National Center for Education Statistics (IPEDS)

Geography Master's Degree Gender Data

The total number of master's degrees awarded in Geography has grown from 157 in 1948 to 777 in 2015, an overall increase of 394.90 percent and an annual growth rate of 2.42 percent. The total number of master's degrees awarded in Geography peaked in 2005, at 944. The number of master's degrees awarded to males peaked in 1972, at 786. The number of master's degrees awarded to females peaked in 2005, at 394.

Figure 10 depicts the change over time, from 1948 to 2015.¹³

Figure 10. Master's degrees awarded in Geography by gender, 1948-2015



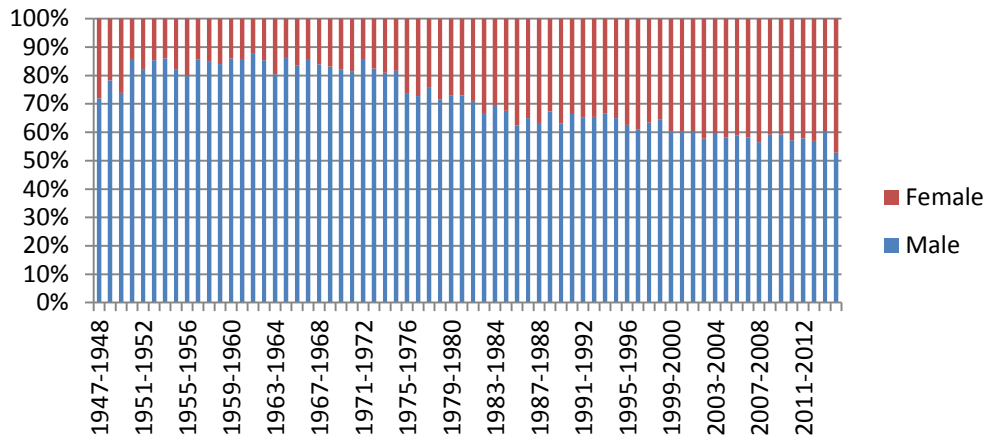
In 1948, 72 percent of Geography master's degree awardees were male, and 28 percent were female. By the early 1950s, the proportion had shifted even further toward males (over 80 percent), and held steady in the low to mid 80s until the mid-1970s. Since the mid-1970s, the proportion of females has steadily increased, from just under 20 percent to an all-time peak of over 47 percent in 2015.

Figure 11 depicts how the proportions have changed over time.¹⁴

¹³ Source: Integrated Postsecondary Education Data System of the National Center for Education Statistics (IPEDS)

¹⁴ Source: Integrated Postsecondary Education Data System of the National Center for Education Statistics (IPEDS)

Figure 11. Change in gender balance in master's degrees awarded in Geography, 1948-2015

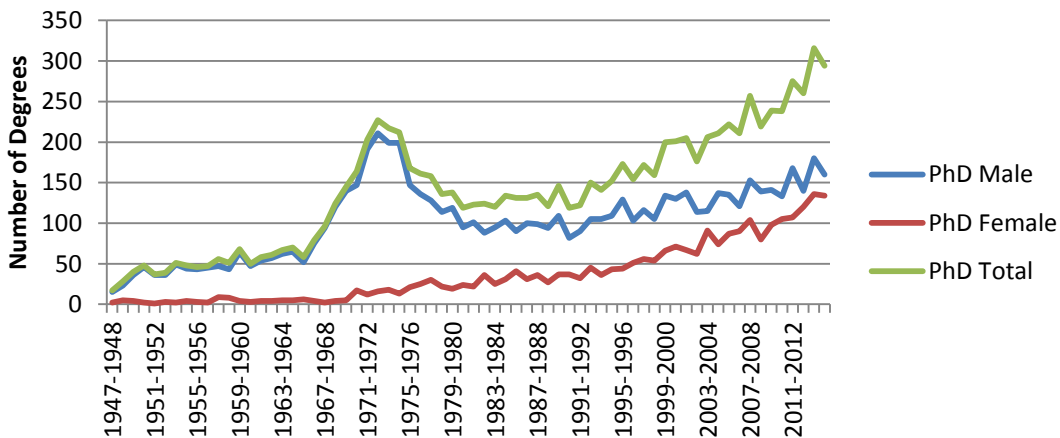


Geography Doctoral Degree Gender Data

The total number of doctoral degrees awarded in Geography has grown from 17 in 1948 to 294 in 2015, an overall increase of 1,629.41 percent and an annual growth rate of 4.35 percent. The total number of doctoral degrees awarded in Geography peaked in 2014, at 316. The number of doctoral degrees awarded to males peaked in 1973, at 211. The number of doctoral degrees awarded to females peaked in 2014, at 136.

Figure 12 shows the change over time, from 1948 to 2015.¹⁵

Figure 12. Doctoral degrees awarded in Geography by gender, 1948-2015

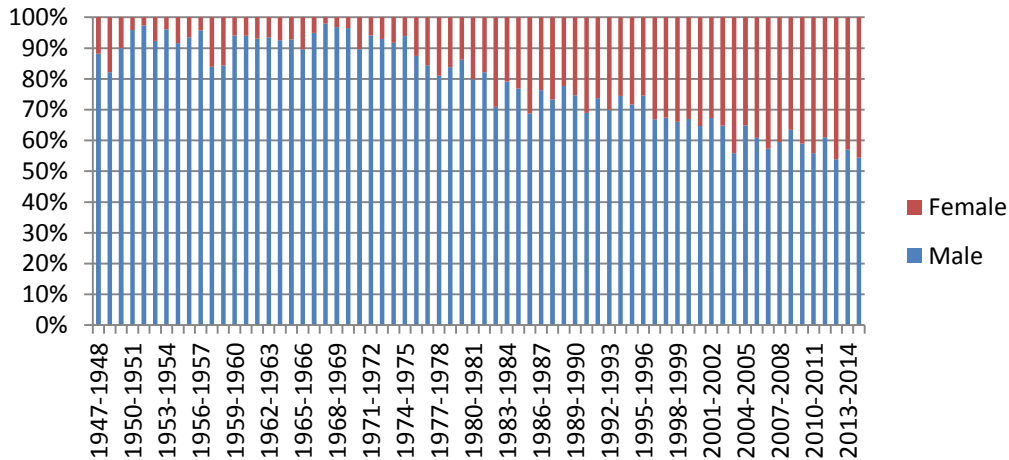


¹⁵ Source: Integrated Postsecondary Education Data System of the National Center for Education Statistics (IPEDS)

In 1948, 88 percent of Geography doctoral awardees were male, and 12 percent were female. From the early 1950s through the mid-1970s, males generally accounted for 90 to 95 percent of all doctoral awardees. Since the mid-1970s, the proportion of females has increased significantly, from under 10 percent to over 45 percent in 2015.

Figure 13 shows how the proportions have changed over time.¹⁶

Figure 13. Change in gender balance in doctoral degrees awarded in Geography, 1948-2015



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The full datasets used to compiled this report are available to download from the Disciplinary Data Dashboard:

<http://www.aag.org/disciplinarydata>

¹⁶ Source: Integrated Postsecondary Education Data System of the National Center for Education Statistics (IPEDS)