

2013

Iowa State University, Graduate Student Activity Report, Calendar Year 2012


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Recommended Citation

Ogilvie, Craig A. and Hernández, Ignacio Jr., "Iowa State University, Graduate Student Activity Report, Calendar Year 2012" (2013). *Graduate College Reports*. 6.

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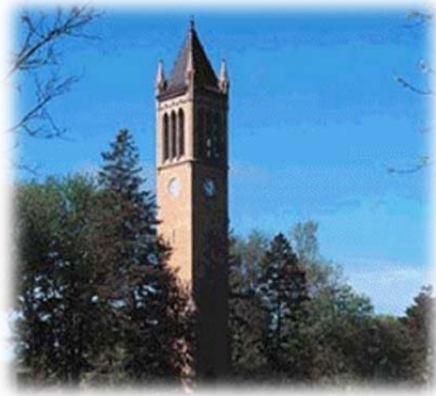
Abstract

The Graduate College at Iowa State University enrolls more than 5,000 graduate students every academic year. Graduate students at ISU pursue doctoral degrees in 82 subject areas, master degrees in 109 subject areas, and certificates in 36 fields. Graduate education at ISU is a vital component of the university and documenting our students' contribution to scholarship is a way of enhancing the visibility of graduate students' accomplishments.

This report presents findings from the 2012 Graduate Student Activity Survey, which describes the peer-reviewed and non-peer reviewed scholarly productivity, conference attendance and presentations, teaching, as well as outreach and extension service of Iowa State University's graduate students. The information provided in the tables and graphs in this report give insight to the self-reported data of ISU graduate students during the 2012 calendar year.

Disciplines

Educational Assessment, Evaluation, and Research | Higher Education



Iowa State University

Graduate Student

Activity Report

Calendar Year 2012

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Introduction

The Graduate College at Iowa State University enrolls more than 5,000 graduate students every academic year. Graduate students at ISU pursue doctoral degrees in 82 subject areas, master degrees in 109 subject areas, and certificates in 36 fields. Graduate education at ISU is a vital component of the university and documenting our students' contribution to scholarship is a way of enhancing the visibility of graduate students' accomplishments.

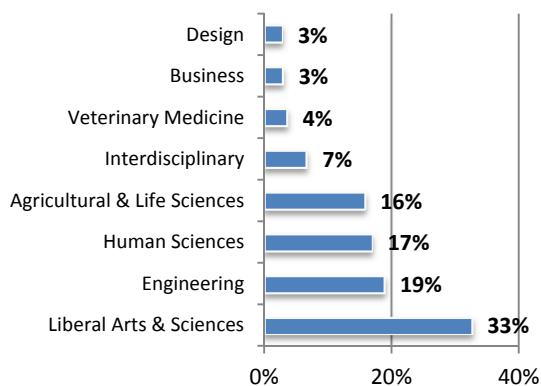
This report presents findings from the 2012 Graduate Student Activity Survey, which describes the peer-reviewed and non-peer reviewed scholarly productivity, conference attendance and presentations, teaching, as well as outreach and extension service of Iowa State University's graduate students. The information provided in the tables and graphs in this report give insight to the self-reported data of ISU graduate students during the 2012 calendar year.

We also report trends in how scholarship differs between colleges and divisions of the Graduate College, while examining whether there is any difference between the activity of men and women, as well as international and domestic graduate students.

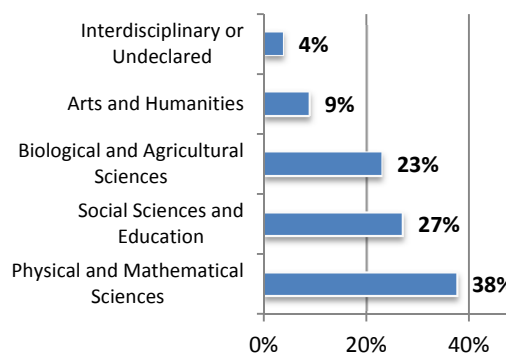
The Graduate Student Activity Survey was administered during the spring 2013 semester. The purpose of the survey was to gain a comprehensive view of the endeavors of ISU's graduate students during the 2012 calendar year.

The sampling frame for the survey was the population of all graduate students—those pursuing master's degrees, doctorates, and certificates—at ISU. The survey was completed by 19 percent of the total graduate student population during the spring 2012 semester, resulting in a final sample of 1,066 students.

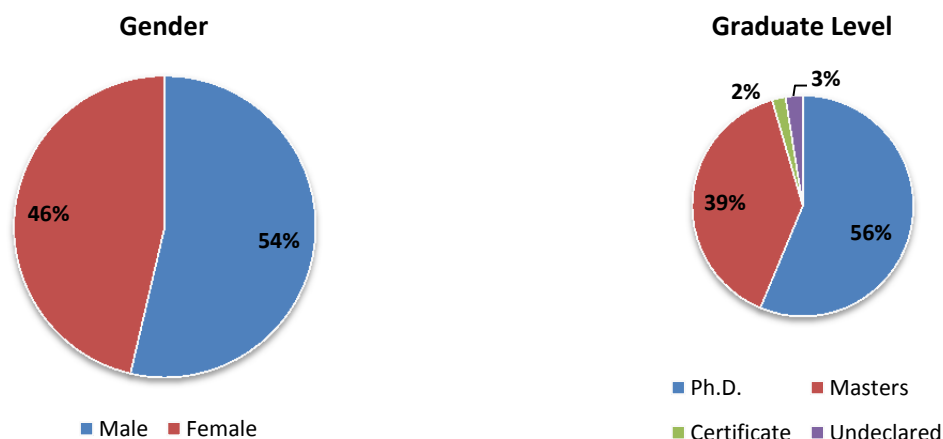
Percentage of Respondents, by College



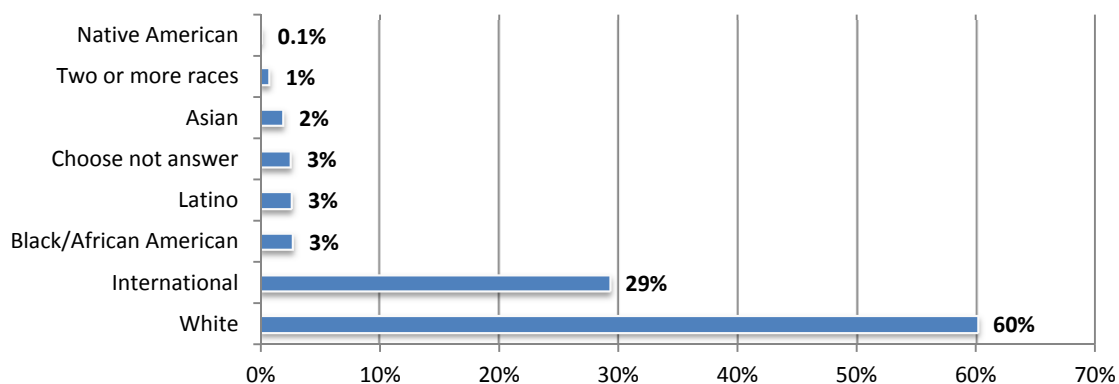
Percentage of Respondents, by Graduate Division



Characteristics of the final sample



Percentage of Respondents, by Domestic Ethnicity and Interantional Status



Selected Findings

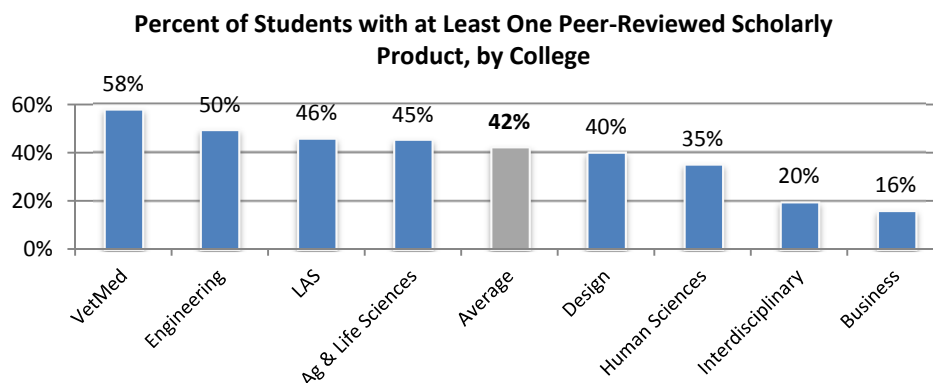
Peer-reviewed scholarship

Students ($n=1063$) were asked about the total number of peer reviewed scholarly products¹ they published, exhibited, or performed in 2012

- 450 students, 42%, produced at least one peer-reviewed scholarly product that was published, exhibited, or performed during 2012.
 - These students averaged 2.79 peer-reviewed scholarly products.
- Students in the Colleges of Agricultural and Life Sciences (45%), Engineering (50%), and Liberal Arts and Sciences (46%) reported the highest total numbers and percentage of peer-reviewed scholarly products

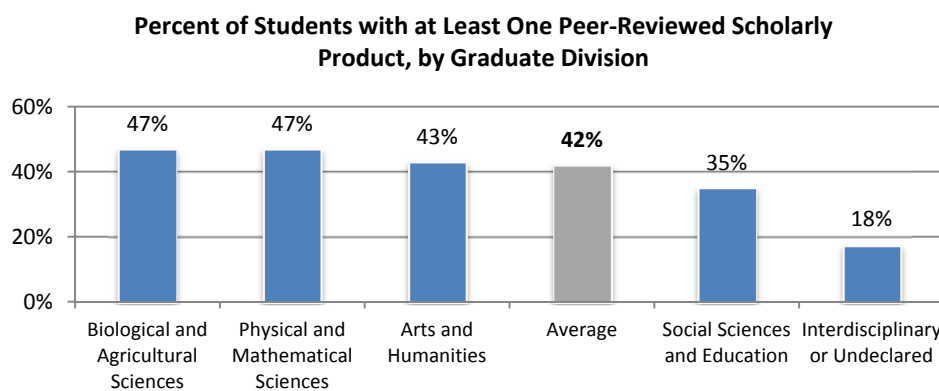
¹ Peer reviewed scholarship included books, chapters in books, refereed journal articles ,refereed extension or outreach materials, refereed conference proceedings , peer reviewed or curated exhibitions, juried music, drama or dance productions or performances, design competitions, art or literary publications, and peer reviewed teaching materials

- The following graph and chart shows how this varies by college



College	n
Liberal Arts & Sciences	159
Engineering	99
Agricultural & Life Sciences	76
Human Sciences	63
Veterinary Medicine	22
Interdisciplinary	14
Design	12
Business	5
<i>Total</i>	<i>450</i>

- The variation in peer-reviewed scholarly products can also be examined by Graduate College Division. Graduate students in the Division of Biological and Agricultural Sciences are more likely than students in other divisions to produce a peer-reviewed scholarly product



Graduate Division	n
Physical and Mathematical Sciences	189
Biological and Agricultural Sciences	115
Social Sciences and Education	99
Arts and Humanities	40
Interdepartmental	4
Undeclared	3
<i>Total</i>	<i>450</i>

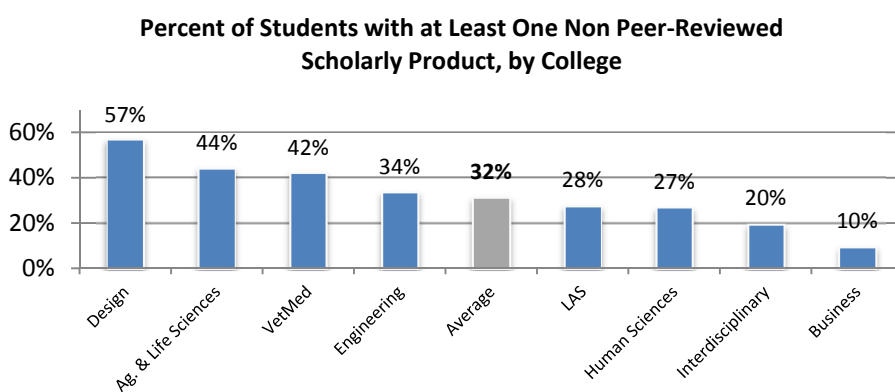
Gender and International Student Status

- Female graduate students (2.95 works per student) accounted for a larger portion of peer-reviewed scholarship than male graduate students (2.68 works per student): this difference is not strictly statistically significant.
- International graduate students (2.87 works per student) accounted for a larger portion of peer-reviewed scholarship than domestic graduate students (2.75 works per student): this difference is not strictly statistically significant.

Non peer-reviewed scholarship

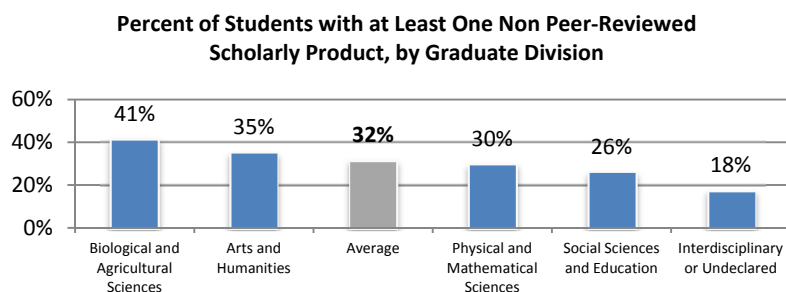
Students ($n=1063$) were asked about the total number of non peer-reviewed scholarly products² they published, exhibited, or performed in 2012

- 335 students, 32% of respondents, had at least one non peer-reviewed scholarly product that was published, exhibited, or performed. The graph below shows how this varies by college.
 - These students averaged 2.84 non peer-reviewed scholarly products.



College	n
Liberal Arts & Sciences	96
Agricultural & Life Sciences	74
Engineering	67
Human Sciences	48
Design	17
Veterinary Medicine	16
Interdisciplinary	14
Business	3
Total	335

- This variation can also be examined by Graduate Division. By percentage, students in the Divisions of Biological and Agricultural Sciences and Arts and Humanities reported producing at least one non peer-reviewed scholarly product higher than the overall average
- By total numbers, more than 100 students in the Divisions of Physical and Mathematical Sciences and Biological and Agricultural Sciences reported producing at least one non peer-reviewed scholarly product.



Division	n
Physical and Mathematical Sciences	119
Biological and Agricultural Sciences	101
Social Sciences and Education	75
Arts and Humanities	33
Interdisciplinary or Undeclared	7
Total	335

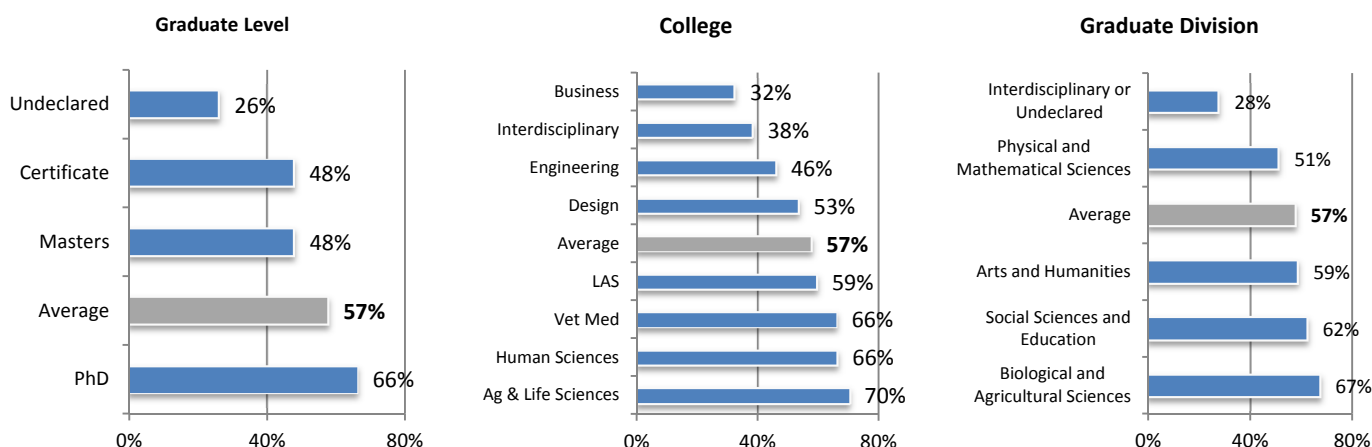
² Non peer-reviewed scholarly products include non-refereed journal articles, non-refereed extension or outreach publications, non-refereed conference proceedings, publicly-available software, electronic products/technical hardware, new plant varieties, non-juried creative activities such as art, design, installations, music, literature, drama or dance, professional reports, grant proposals, published letters or comments to the editor, published book reviews, teaching manuals, factsheets, or innovative teaching techniques/materials/websites

Gender and International Student Status

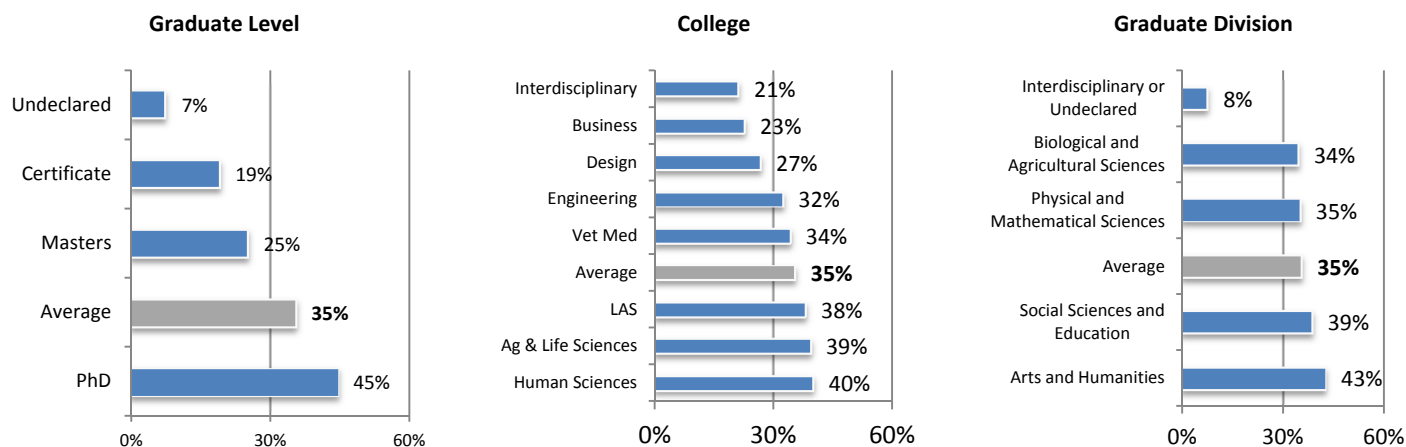
- Male graduate students (2.94 works per student) accounted for a larger portion of non peer-reviewed scholarship than female graduate students (2.72 works per student): this difference is not strictly statistically significant.
- Domestic graduate students (2.86 works per student) accounted for a larger portion of non peer-reviewed scholarship than international graduate students (2.78 works per student): this difference is not strictly statistically significant.

Conferences attended, presentations, and poster sessions

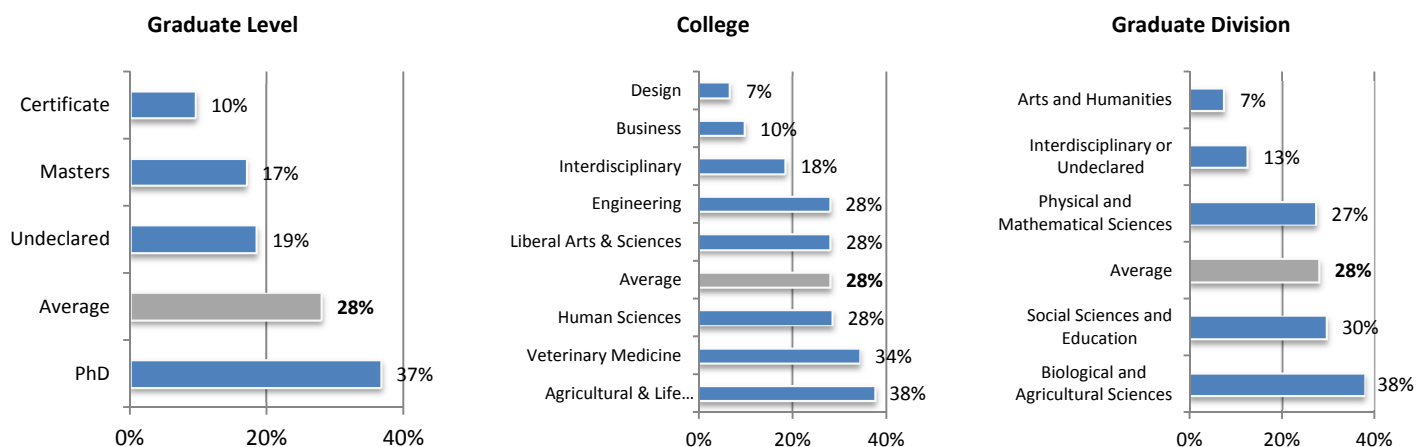
57% of respondents **attended** at least one national, regional, and/or local conference. These variations can be examined by the percentage of students attending conferences by graduate level, college, and graduate division. The graphs below show how these percentages vary.



35% of respondents **delivered at least one presentation** at national, regional, and/or local conferences



28% of respondents **presented at least one poster** at national, regional, and/or local conferences



The following table shows the mean data for these graduate students who attended at least one conference, delivered at least one presentation, and presented at least one poster.

	n	Mean
Attended at least one conference	612	2.3
Delivered at least one conference presentation	378	2.1
Presented at least one poster	298	1.6

Gender and International Student Status

- Male graduate students (2.35 conferences per student) accounted for a larger portion of conference attendance than female graduate students (2.20 conferences per student): this difference is not strictly statistically significant.
- Female graduate students (2.30 presentations per student) accounted for a larger portion of conference presentations than male graduate students (1.93 presentations per student): this difference is not strictly statistically significant.
- Male graduate students (1.68 posters per student) accounted for a larger portion of poster presentations than female graduate students (1.58 posters per student): this difference is not strictly statistically significant.
- Domestic graduate students (2.35 conferences per student) accounted for a larger portion of conference attendance than international graduate students (2.05 conferences per student): this difference is not strictly statistically significant.
- Domestic graduate students (2.12 presentations per student) accounted for a larger portion of conference presentations than international graduate students (2.06 presentations per student): this difference is not strictly statistically significant.

- Domestic graduate students (1.70 posters per student) accounted for a larger portion of poster presentations than international graduate students (1.51 posters per student): this difference is not strictly statistically significant.

Technology transfer

- 1.4 percent of graduate students (n=15) had at least one patent or license issued. No students reported receiving any royalties.
- Of the 13 graduate students who reported at least one patent, five are from the College of Engineering, four from the College of Agricultural and Life Sciences, and four from the College of Liberal Arts and Sciences.
- Of the three graduate students who reported one license, two are from the College of Human Sciences and one is from the College of Engineering.
- Of the 15 graduate students who reported one patent or license 10 are male and five are female.
- Eight international students had at least one patent or license issued.

Teaching in the classroom

We calculated *Teaching Hours per Week* by combining the number of reported teaching hours for the Spring, Summer, and Fall terms. Throughout the 2012 calendar year 387 graduate students (37%) reported teaching at least one hour per week.

- These students averaged teaching 9.9 hours per week in 2012

During the Spring semester, 247 graduate students (23%) reported teaching at least one hour per week.

- These students averaged teaching 6.2 hours per week in Spring 2012

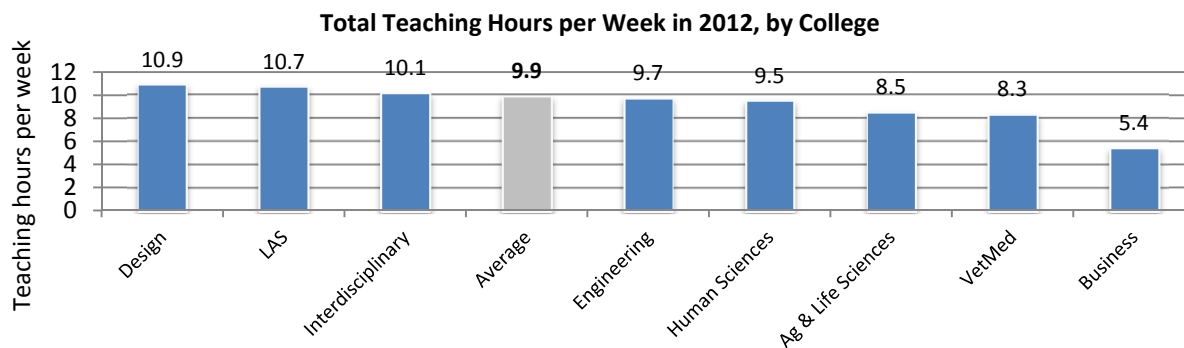
During the Summer term, 86 graduate students (8%) reported teaching at least one hour per week.

- These students averaged teaching 5.9 hours per week in Summer 2012

During the Fall semester, 308 graduate students (36%) reported teaching at least one hour per week.

- These students averaged teaching 6.2 hours per week in Fall 2012.

There was a wide range in the average number of reported teaching hours across the different colleges throughout 2012. Respondents in the Colleges of Design and Liberal Arts and Sciences as well as interdisciplinary students reported teaching hours above the mean. The following graph shows the distribution of total teaching hours per week, by college.



The following table shows the ranking of departments with the most students reporting teaching at least one hour in 2012.

Department	Respondents teaching at least one hour	1 to 5 hours	6 to 10 hours	11 or more hours
SOE	37	54%	27%	19%
CHEM	31	10%	29%	61%
ENGL	30	27%	23%	50%
MATH	27	30%	44%	26%
PSYCH	19	74%	5%	21%
STAT	18	67%	22%	11%
AN S	16	63%	19%	19%
M E	15	40%	53%	7%
AESHM	14	14%	36%	50%
E CPE	13	15%	31%	54%
PHYSA	13	8%	31%	62%

Teaching beyond the classroom

- 310 students, 29% of respondents, work with at least one undergraduate student on research or creative activities, or 5.3 undergraduates per graduate student.
- 249 students, 23% of respondents, advise or mentor at least one undergraduate student, or 14.1 undergraduates per graduate student.
- 160 students, 15% of respondents, advise or mentor at least one fellow graduate student, or 2.9 graduates mentored per graduate student.
- 387 students, 36% of respondents, advised or mentored at least one co-curricular student group, or 2.6 groups mentored per graduate student.

Outreach, extension, and professional practice

- 351 students, 33% of respondents, interacted with at least one organization, schools, or clients *within the state of Iowa*, or 7.8 organizations per graduate student.

- These students dedicated an average of 157 hours of annual service and interaction, about 3 hours a week.
- 154 students, 14% of respondents, interacted with at least one organization, schools, or clients *outside the state of Iowa*, or 6.3 organizations per graduate student.
 - These students dedicated an average of 134 hours of annual service and interaction, about 2.5 hours a week.
- 230 students, 22% of respondents, served as an officer for a university- or student-based organization, or 1.9 local organizations per graduate student.
 - These students dedicated an average of 57 hours of annual service and interaction, about 1.1 hours a week.
- 118 students, 11% of respondents, served as an officer for a regional or national professional service organization, or 2.3 organizations per graduate student.
 - These students dedicated an average of 50 hours of annual service and interaction, about 1 hour a week.

Tables and Figures

Research, Scholarship, & Creative Activity

Table 1: Percent distribution of graduate students with at least one publication, conference attended, and presentation, by College

College	Percentage of Respondents	Peer-Reviewed Scholarly Products	Non Peer-Reviewed Scholarly Products	Conferences Attended	Conference Presentations	Poster Presentations
Liberal Arts & Sciences	33%	35%	29%	34%	35%	33%
Engineering	19%	22%	20%	15%	17%	19%
Human Sciences	17%	14%	14%	19%	19%	17%
Agricultural & Life Sciences	16%	17%	22%	19%	17%	21%
Interdisciplinary	7%	3%	4%	4%	4%	4%
Veterinary Medicine	4%	5%	5%	4%	3%	4%
Business	3%	1%	1%	2%	2%	1%
Design	3%	3%	5%	3%	2%	1%
Total	100%	100%	100%	100%	100%	100%

Teaching in the classroom

Overall, 37% (n=387) of respondents reported teaching at least one hour in 2012. The data in the following tables shows the distribution of these students by college and graduate division. Of those who taught at least one hour, the average graduate student reported teaching 9.9 hours in 2012.

Table 2: Distribution of graduate students with at least one teaching hour, by College

College	Respondents teaching at least one hour	If Teaching, Total Teaching Hours in 2012
Liberal Arts & Sciences	175	10.7
Human Sciences	77	9.5
Agricultural & Life Sciences	63	8.5
Engineering	43	9.7
Design	9	10.9
Business	7	5.4
Interdisciplinary	7	10.1
Veterinary Medicine	6	8.3
<i>Total</i>	387	9.9

Table 3: Percent distribution of graduate students' total teaching hours, by College

College	Number of Respondents	0 hours	1 to 5 hours	6 to 10 hours	11 or more hours	Total
Liberal Arts & Sciences	337	48%	17%	16%	19%	100%
Engineering	200	79%	8%	8%	6%	100%
Human Sciences	176	56%	21%	10%	13%	100%
Agricultural & Life Sciences	167	62%	19%	9%	10%	100%
Interdisciplinary	71	90%	6%	1%	3%	100%
Veterinary Medicine	38	84%	8%	3%	5%	100%
Business	31	77%	10%	13%	0%	100%
Design	29	69%	3%	17%	10%	100%
<i>Total</i>	1049	63%	15%	11%	12%	100%

Table 4: Distribution of graduate students with at least one teaching hour, by Graduate Division

Graduate Division	Respondents teaching at least one hour	If Teaching, Total Teaching Hours in 2012
Physical and Mathematical Sciences	143	11.1
Social Sciences and Education	115	9.6
Biological and Agricultural Sciences	76	7.0
Arts and Humanities	48	11.4
Interdisciplinary or Undeclared	5	8.8
<i>Total</i>	387	9.9

Table 5: Percent distribution of graduate students' total teaching hours, by Graduate Division

Division	Number of Respondents	0 hours	1 to 5 hours	6 to 10 hours	11 or more hours	Total
Physical and Mathematical Sciences	395	64%	11%	13%	13%	100%
Social Sciences and Education	281	59%	20%	10%	12%	100%
Biological and Agricultural Sciences	243	69%	17%	7%	7%	100%
Arts and Humanities	90	47%	12%	19%	22%	100%
Interdisciplinary or Undeclared	40	88%	8%	3%	3%	100%
<i>Total</i>	<i>1049</i>	<i>63%</i>	<i>15%</i>	<i>11%</i>	<i>12%</i>	<i>100%</i>

Beyond the classroom

Table 6: Distribution of graduate students working with at least one undergraduate on research or creative activities, by College

College	Respondents working with at least one undergraduate	Average number of undergraduates per graduate student
Liberal Arts & Sciences	85	5.8
Agricultural & Life Sciences	83	3.5
Engineering	71	2.8
Human Sciences	39	10.6
Interdisciplinary	13	2.0
Veterinary Medicine	12	3.1
Design	6	5.7
Business	1	150.0
<i>Total</i>	<i>310</i>	<i>5.3</i>

Table 7: Distribution of graduate students advising or mentoring at least one undergraduate student, by College

College	Respondents advising/mentoring at least one undergraduate	Average number of undergraduates per graduate student
Liberal Arts & Sciences	66	11.9
Human Sciences	57	36.7
Agricultural & Life Sciences	52	4.0
Engineering	50	4.5
Design	7	17.1
Veterinary Medicine	7	2.6
Interdisciplinary	6	2.5
Business	4	9.0
<i>Total</i>	<i>249</i>	<i>14.1</i>

Table 8: Distribution of graduate students advising or mentoring at least one graduate student, by College

College	<i>Respondents advising/mentoring at least one graduate student</i>	Average number of graduate students per graduate student
Liberal Arts & Sciences	51	2.1
Human Sciences	37	5.3
Agricultural & Life Sciences	31	2.3
Engineering	26	2.0
Veterinary Medicine	7	1.7
Design	4	2.3
Interdisciplinary	3	3.3
Business	1	3.0
<i>Total</i>	<i>160</i>	<i>2.9</i>