IOWA STATE UNIVERSITY

After They Graduate: An Overview of the Iowa State University Alumni Survey

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Every spring, summer and fall universities across the United States award bachelor's degrees to eager young people and then send them forth to do good things. It is a familiar pattern – one that has been repeated at Iowa State University for nearly 150 years.

We know, in general terms, that the investment in higher education is a sound one, both for students and for society.[1] But before now we have had little specific information on how an Iowa State graduate develops professionally or contributes to their community following graduation. In particular we have not had information that would allow us to link the career accomplishments and the economic impact of our graduates with their experiences at Iowa State University. This information is important for Iowa State faculty, staff and our stakeholders because it may suggest ways to improve the quality of undergraduate education. In a broader context this information should be of value to researchers and public officials interested in higher education and strengthening its role in fostering professional and economic development.

This report presents an overview of career-related activities obtained from a random sample of 25,000 Iowa State University bachelor's degree recipients between 1982 and 2006. A description of our survey and sampling procedure is given in Appendix I. The survey requested information on graduates' employment history, income, further education, entrepreneurial activity and community involvement. Most respondents completed the survey on line. We received 5,416 usable surveys for a response rate of approximately 21.6 percent.

A QUICK LOOK AT IOWA STATE AND ITS GRADUATES

Iowa State University is a medium-sized public land-grant University. It offers undergraduate and graduate degrees through its eight colleges: Agriculture and Life Sciences, Business, Design, Engineering, Human Sciences, Liberal Arts and Sciences, Veterinary Medicine plus the Graduate College. In the Fall of 2007, Iowa State enrolled 26,160 students of whom 4,664 were graduate students. Nearly 76 percent of all undergraduates were Iowa residents. Only 3.6 percent of undergraduates were international students. Iowa State's admission policies are not highly selective. Over the period of this study, high school students entering Iowa State needed to rank in the upper half of their graduating class and have met certain minimum requirements in English, Mathematics, Science and Social Studies. Students in the lower half of their graduating class needed to achieve a minimum test score on the ACT or SAT. In 2007, entering ISU freshman had a mean ACT score of 24.4 and an average class rank of 76 percent. In comparison, the average ACT scores in the U.S. and Iowa were 21.0 and 22.3 respectively. Test scores and class rank of entering freshman have been fairly stable over the period of the study.

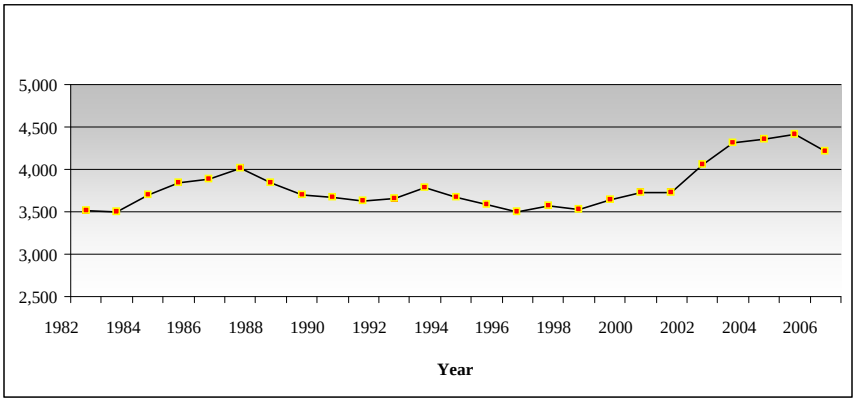
[1] Day, Jennifer Cheeseman and Eric C. Newburger. 2002. The Big Payoff: Educational Attainment and Synthetic Estimates of Work-Life Earnings. Special Studies P23-210, U.S. Department of Commerce, U.S. Census Bureau. http://www.census.gov/prod/2002pubs/p23-210.pdf

Although we can't make a claim that ISU is fully representative of college graduates in the U.S., ISU is reasonably representative of public universities that enroll approximately 60 percent of all undergraduates.[2]

Figure 1 shows bachelor's degrees awarded by Iowa State between 1982 and 2006. A total of 95,016 students received bachelor's degrees – an average of 3,800 per year. The overall trend in graduates has been flat, however graduation rates increased recently beginning in 2003.

Over most of this study, seven colleges awarded bachelor's degrees.[3] In 2005 the Colleges of Education and Family and Consumer Sciences merged into the College of Human Sciences. In this analysis we combine data from the two merged colleges and report results under the College of Human Sciences. Figure 2 provides information on total number of bachelor's degrees awarded by the college since 1982. The College of Liberal Arts and Sciences is by far the largest accounting for over 25 percent of graduates. Engineering, Business and Human Sciences are roughly equal in size followed by the College of Agriculture and Life Sciences and Design. The share of graduates by college over the same period is given in Figure 3. The College of Liberal Arts has grown fairly steady since 1970. The College of Business is relatively new – established in 1984 from the School of Business Administration. Following a period of rapid growth in the late 1980s, followed by falling enrollments in the 1990s, the College of Business is now tied with Engineering as the second largest producer of undergraduate alumni. Graduation trends in the College of Agriculture and Life Sciences have been cyclical over this period – to an extent following the fortunes of the agricultural economy. Human Sciences and Design exhibit little trend.

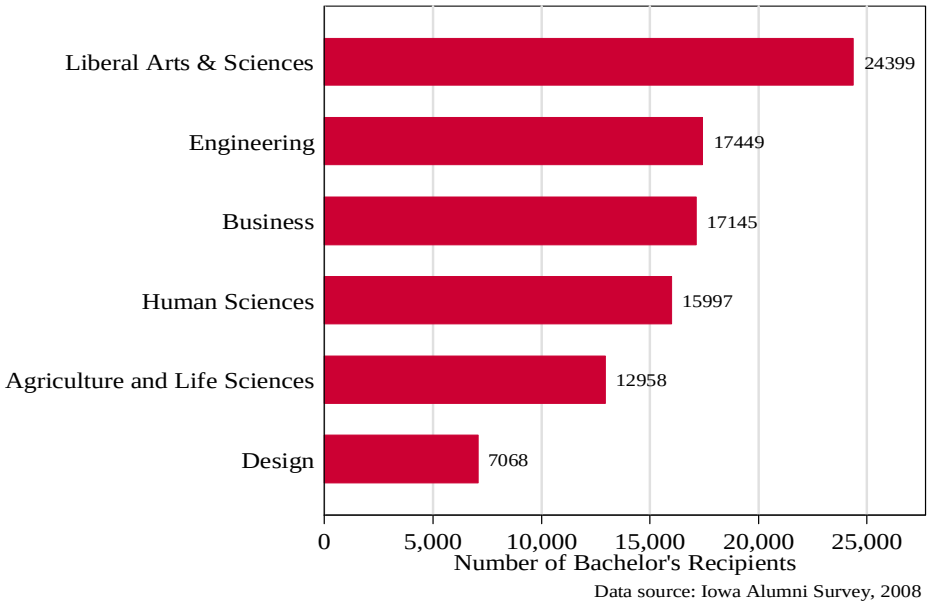
Figure 1. Annual number of Bachelor's degree recipients from Iowa State University, 1982-2006



[2] National Center for Education Statistics. 2008. The Condition of Education 2008. U.S. Department of Education. http://nces.ed.gov/pubsearch/pubsinfo.asp?pubid=2008031

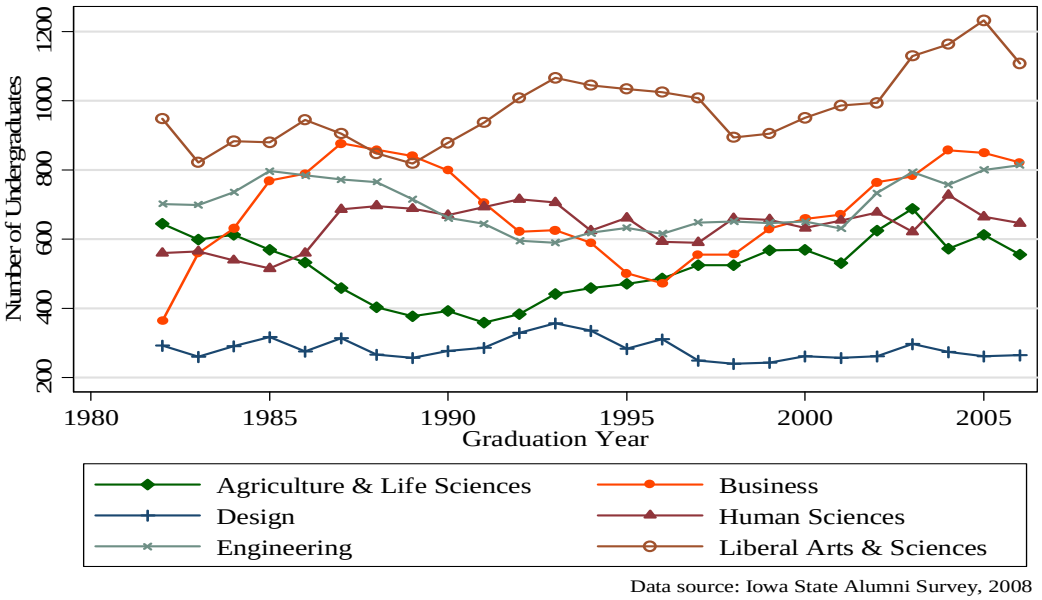
[3] Note the College of Veterinary Medicine and Graduate College are excluded from this study because they do not award bachelor's degrees.

Figure 2. Total number of Iowa State University undergraduate alumni by college, 1982-2006



Note: Colleges of Human Science, Education and Family and Consumer Sciences are combined into College of Human Science.

Figure 3. Annual number of Bachelor's degree recipients by college, 1982-2006.



WHERE DO THEY LIVE AND WHAT DO THEY DO?

Much has been written about the brain drain in Iowa – our graduates leaving Iowa for other states. Figure 4 gives the current residency of survey respondents. We see that the greatest number of ISU graduates remain in Iowa – 38 percent. And if they travel, they don't go far. Illinois, Minnesota and other Midwestern states account for an additional 37 percent.

Figures 5 and 6 show the geographic distribution of graduates by college and by graduation year cohort. Generally we find that Agriculture and Life Sciences and Human Sciences graduates are more likely to remain in Iowa or neighboring states. Graduates in Engineering are the least likely. Surprisingly, the most recent graduates have tended to settle in Iowa. We can't determine whether this pattern reflects career choices – seeking more education or if it is due to improving job opportunities in Iowa for new graduates.

The current employment status of graduates is reported in Table 1. Respondents were allowed to select multiple categories, so the total exceeds 100 percent. Nearly 84 percent of graduates are currently employed full-time either for others or in their own businesses. This level of employment exceeds the national average of 78 percent for college graduates for the same time period.[4] An additional 6.3 percent report working as homemakers. Approximately 17 percent of graduates are working part-time, are retired or are students. Only one percent of respondents said they were currently unemployed.

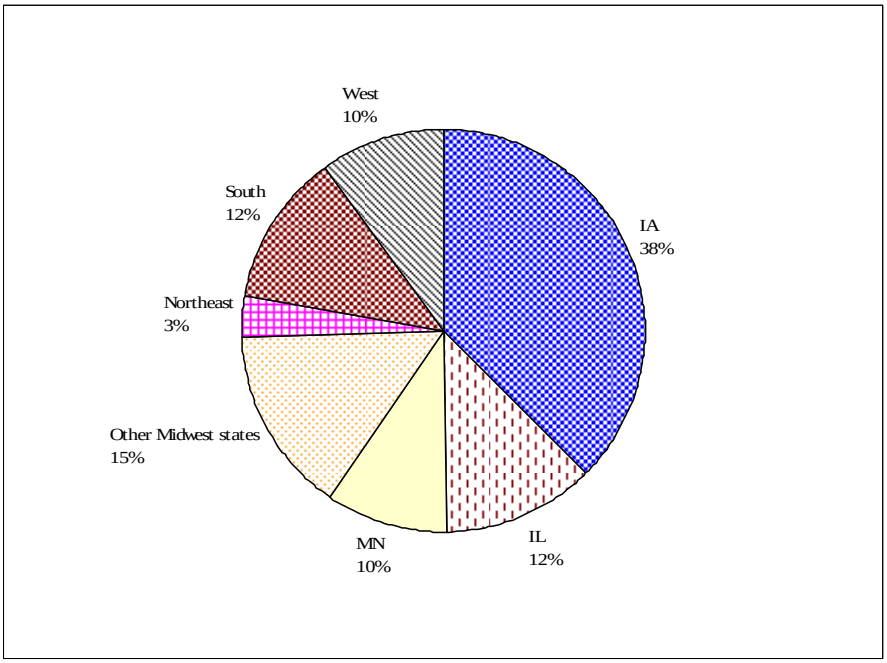
Table 2 provides details on employment status by graduation year and college. As the graduation cohorts age, we see an increase in self-employment and a sharp decrease in those reporting that they are continuing as students. Alumni working as homemakers first increases and then decreases as the time since graduation increases – presumably a consequence of lifestyle and family needs. Graduates of the College of Engineering report the highest rate of employment by others. Design and the Agriculture and Life Science graduates are more likely to be self-employed – in part a reflection of both industry structure and career choice.

ISU graduates were asked to select a job title that best describes their current occupation. Table 3 summarizes their responses in rank order. By far, the majority of ISU bachelor's recipients describe their current occupation as professional and technical. This category would include engineers, scientists, medical and health professionals and educators among others. The remaining occupations are distributed across a range of other service sector, sales or managerial functions.

Table 4 gives the current distribution of Iowa State graduates across various industries within the U.S. economy. Education is the dominant sector. However the most striking aspect of reported employment patterns is how broadly ISU graduates are working throughout the U.S. economy.

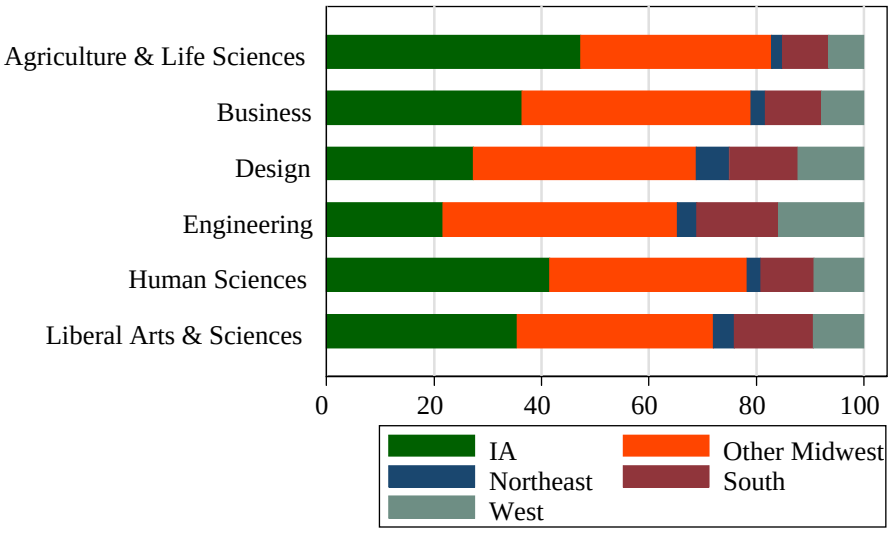
[4] Bureau of Labor Statistics, Household Data Annual Averages. http://www.bls.gov/cps/cpsaat7.pdf

Figure 4. Percentage distribution of current residency



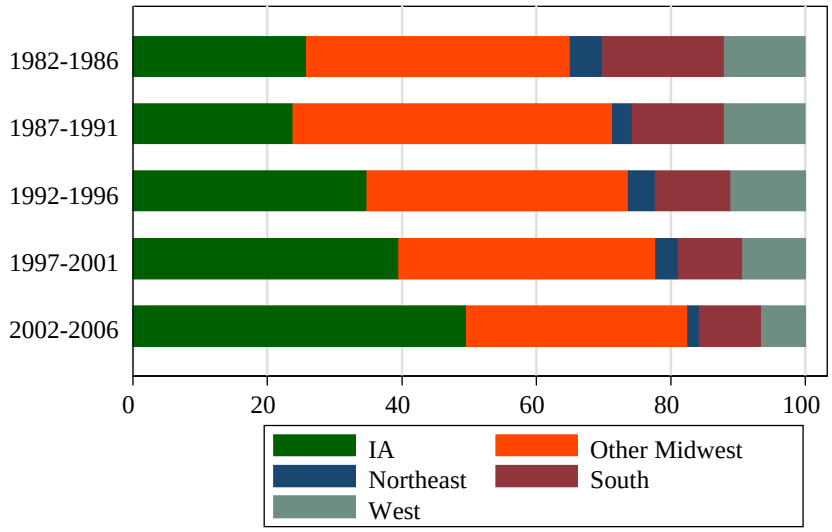
Note: States in the U.S. are divided into four regions: Northeast, Midwest, South, and West, according to the U.S. Census Bureau. States included in Midwest: IA, IL, IN, MN, MO, ND, NE, OH, SD, WI; in Northeast: CT, DC, DE, MA, MD, ME, MI, NH, NJ, NY, PA, RI, VT; in South: AL, FL, GA, KY, LA, MS, NC, SC, TN, VA, WV; and in West: AK, AR, AZ, CA, CO, HI, ID, KS, MT, NM, NV, OK, OR, TX, UT, WA, WY. Alumni who are located abroad are excluded.

Figure 5. Alumni residency distribution by college



Data source: Iowa State Alumni Survey, 2008

Figure 6. Alumni residency distribution by graduation year



Data source: Iowa State Alumni Survey, 2008

Table 1. Current employment status

Employment status	*Percent reporting*
Full-time	79.0
Part-time	7.1
Self employed full-time	4.9
Self employed part-time	3.5
Homemaker	6.3
Student	5.8
Retired	0.6
Unemployed	1.0

Note: The percentage reporting sums more than 100 percent because respondents were allowed to select more than one employment status category.

Table 2. Current employment status of alumni by graduation year and college (percent)

	Employed by others	*Self-employed*	*Homemaker*	*Student*	*Retired*	*Unemployed*
Graduation Year						
1982-1986	85.1	11.0	5.3	1.0	1.6	0.8
1987-1991	82.8	11.1	7.7	1.0	0.9	1.4
1992-1996	83.8	9.1	11.0	1.7	0.5	1.2
1997-2001	88.1	6.7	6.0	6.0	0.0	1.3
2002-2006	87.1	4.2	2.0	17.6	0.0	0.4
College						
Agriculture & Life Sciences	85.6	10.4	6.5	5.8	0.1	0.3
Business	86.7	8.6	4.7	4.0	0.5	1.0
Design	83.3	17.3	3.8	2.6	0.0	0.8
Engineering	91.3	5.2	2.5	4.2	0.4	0.7
Human Sciences	80.3	8.6	12.6	5.8	1.2	1.5
Liberal Arts & Science	84.2	6.4	6.5	9.3	0.8	1.3
Total Sample	85.4	8.3	6.3	5.8	0.6	1.0

Table 3. Distribution of current occupations, total sample

Current Occupation	*Percent*
Professional & technical occupations	52.1
Service sector	6.7
Sales & related occupations	6.6
Marketing & sales managers	6.5
Computer & information systems managers	5.1
Chief executives	5.0
Financial managers	4.4
Office, clerical & administrative support	3.7
Farming, fishing & forestry occupations	1.7
Human resources managers	1.7
Purchasing managers	1.4
Transportation, storage & distribution managers	1.4
Industrial production managers	1.3
Construction & extraction occupation	1.2
Transportation & material moving occupations	0.7
Production occupations: laborers & operatives	0.5

Table 4. Distribution of current industry sectors, total sample

Sector	*Proportion of alumni (percent)*
Education	20.8
Manufacturing	17.1
Finance/Insurance	15.4
Medicine/Health Care	13.1
Government/Military	12.9
Agriculture	12.4
Information Technology	12.4
Retail	12.0
Construction	8.4
Non-profit	7.2
Transportation & Utilities	7.0
Communications	6.2
Arts, Entertainment & Recreation	4.4
Accommodation & Food Services	4.1
Social Services	4.1
Hospitality	3.9
Real Estate	2.7
Legal	2.6
Mining	0.3
Other	15.4

WHAT HAVE THEY DONE SINCE GRADUATION?

1. Obtained More Education

Part of a bachelor's degree recipient's career path can include additional education. Approximately 37 percent of respondents report that they have obtained an advanced degree since graduating from Iowa State. Table 5 summarizes this information. More than 26 percent of graduates have obtained a master's degree. The MBA is the most common degree reported and is obtained, on average, more than seven years after graduation. A much smaller proportion, 4.5 percent, go on to obtain a doctorate – Ph.D., EdD or a similar degree. Agriculture was the dominant field for doctoral recipients, although 25 percent of respondents indicated their doctorate was in fields other than those listed. On average doctoral degrees were obtained nearly 8 years after graduation. Professional degrees were earned by 6.1 percent of graduates evenly balanced between human medicine and law. Veterinary medicine accounted for 12.5 percent of professional degrees.

Table 5. Further education of alumni beyond Bachelor's degree

Graduate Degree (Percent reporting)	*Field*	*Percent reporting*	*Average years after receiving a Bachelor's degree to complete*
Master's degree (26.3%)			
	Physical Sciences	5.5	3.9
	Social Sciences	12.9	5.0
	Agriculture and Life Sciences	9.7	4.9
	Business	31.5	7.6
	Engineering	14.2	4.5
	Other	26.2	5.9
	Total	*100*	*5.9*
Doctoral level degree (4.5%)			
	Physical Sciences	14.5	6.9
	Social Sciences	17.8	9.2
	Agriculture and Life Sciences	25.3	7.1
	Business	3.4	10.7
	Engineering	13.9	8.1
	Other	25.1	8.1
	Total	*100*	*7.9*
Professional degree (6.1%)			
	Medical (MD, DO, DDS, etc.)	45.6	4.8
	Law	41.9	6.3
	Veterinary Medicine (DVM)	12.5	4.2
	Total	*100*	*4.7*

Note: Education categories are not exclusive when people can have multiple graduate degrees

2. Changed Jobs, Occupations and Industries

From graduation to their current situation, bachelor's degree recipients will change jobs and work in a variety of occupations and industries. Figure 7 shows the distribution of job changes since graduation for the entire sample. The mean value of 3.7 jobs held is comparable to an estimate reported by the Bureau of Labor Statistics for college graduates between 23 and 42 years of age (3.7-1.9)[5]. Figures 8 and 9 give the distribution of job changes by graduation year and college. Not surprisingly, the longer the graduate is active in the labor market, the more jobs held. Engineering graduates tend to change jobs less frequently. Design and Human Science graduates change jobs the most. Mean values for number of job changes by college and graduation year are reported in Tables 6(a), 6(b).

Despite somewhat frequent job change, approximately 80 percent of all alumni have worked in two or fewer occupations or industries since graduation. Figures 10 and 11, and Tables 7(a) and 7(b) summarize this information. Agriculture and Life Sciences, Business and Design graduates appear to be the most mobile. The frequency of occupation and industry changes increase the longer students have been working.

Table 8 gives the proportion of graduates reporting managerial or executive experience by graduation year. More than 40 percent of alumni who have graduated since 1991 report managerial experience. Approximately 8 percent have served as chief executives.

Table 6(a). Average number of jobs held since graduation by college

College	*Mean*	*Standard Deviation*
Agriculture & Life Sciences	3.70	2.73
Business	3.63	2.56
Design	4.26	3.01
Engineering	3.17	2.36
Human Sciences	3.92	2.44
Liberal Arts & Sciences	3.71	2.70
Total	3.67	2.61

[5] The BLS reports an average of 11.1 job changes for Bachelor's degree holders between ages 18 and 42. However most of those changes occur between the ages of 18 and 22. (Bureau of Labor Statistics. 2008. Number of Jobs Held, Labor Market Activity, and Earnings Growth Among The Youngest of Baby Boomers: Results From A Longitudinal Survey. USDL 08-0860, U.S. Department of Labor.) http://www.bls.gov/news.release/pdf/nlsoy.pdf

Table 6(b). Average number of jobs held since graduation by graduation year

Graduation Period	*Mean*	*Standard Deviation*
1982-1986	4.79	3.11
1987-1991	4.69	2.77
1992-1996	3.92	2.40
1997-2001	3.14	2.11
2002-2006	2.04	1.29
Total	3.67	2.61

Table 7(a). Average number of different occupations and industries by college

College	*Average number of different occupations*	*Average number of different industries*
Agriculture & Life Sciences	1.89	1.90
Business	1.83	1.82
Design	1.76	2.07
Engineering	1.52	1.61
Human Sciences	1.53	1.81
Liberal Arts & Sciences	1.45	1.88
Total	1.63	1.82

Table 7(b). Average number of different occupations and industries by graduation year

Graduation Year	*Average of different occupations*	*Average of different industries*
1982-1986	1.87	2.00
1987-1991	1.87	1.94
1992-1996	1.66	1.89
1997-2001	1.52	1.79
2002-2006	1.27	1.55
Total	1.63	1.82

Table 8. Attainment of managerial or executive positions (percent reporting)

Graduation Year	*Managers/CEOs*	*CEOs*
1982-1986	42.5	8.8
1987-1991	43.3	7.7
1992-1996	36.4	5.5
1997-2001	31.9	2.4
2002-2006	22.5	0.9
Total	35.0	4.9

Figure 7. Percentage distribution of number of different jobs held since graduation

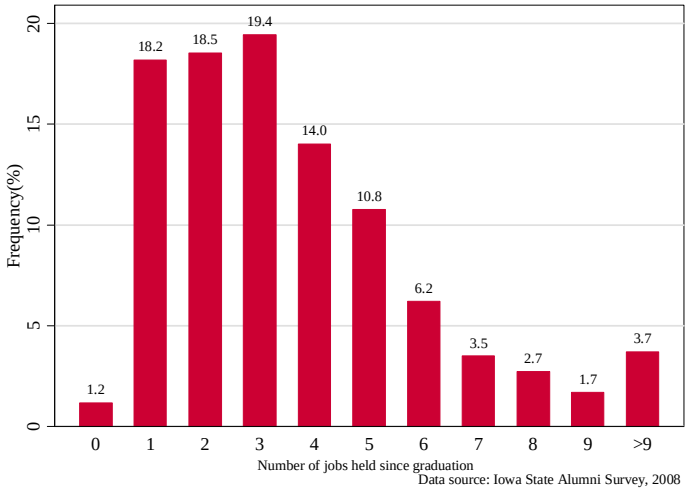


Figure 8. Distribution of number of different jobs held since graduation by graduation year

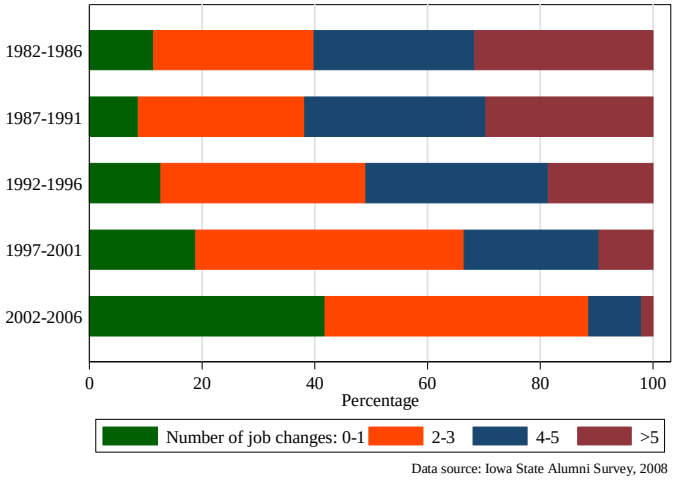
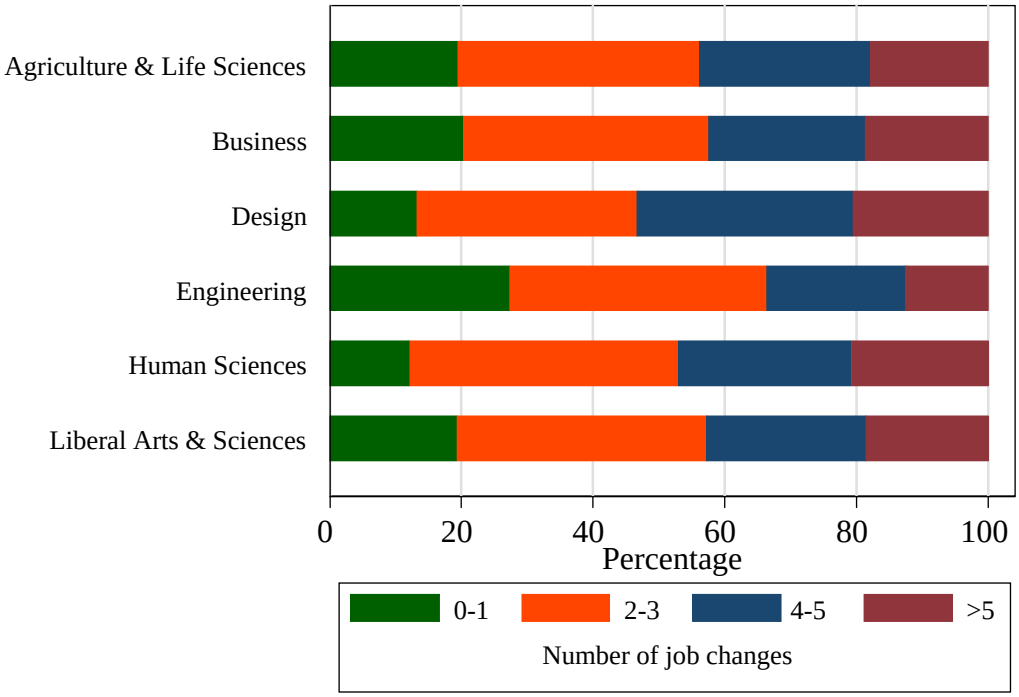
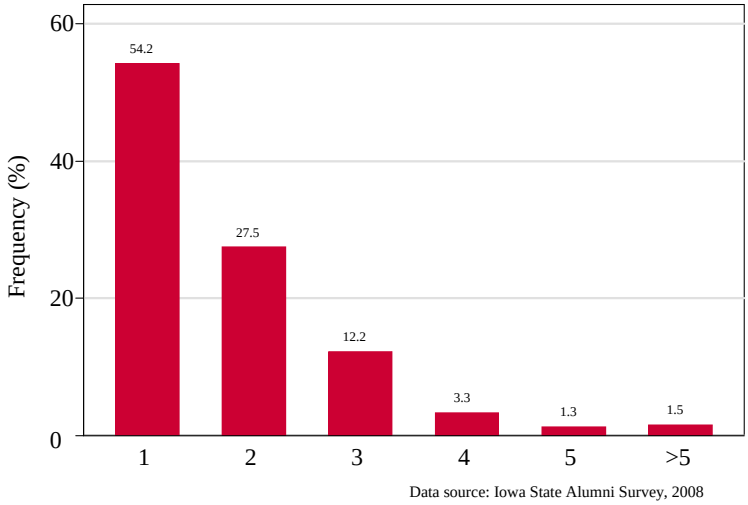


Figure 9. Distribution of number of different jobs since graduation by college



Data source: Iowa State Alumni Survey, 2008

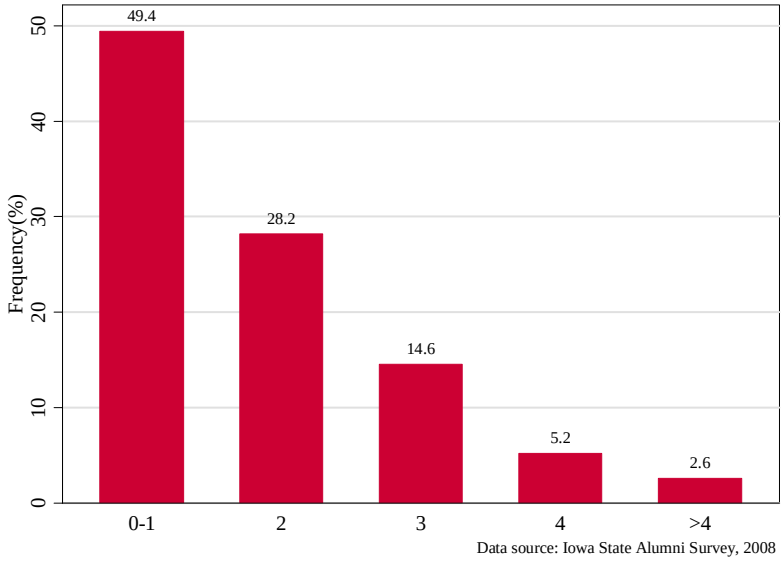
Figure 10. Percentage distribution of number of different occupations since graduation



Data source: Iowa State Alumni Survey, 2008

Note: Individuals who reported to have no occupations are excluded.

Figure 11. Percentage distribution of industries worked since graduation



3. Started Businesses

It is clear that entrepreneurship is going to play an increasingly important role as a driver of economic growth and development.[6] We wanted to get some idea of the frequency with which our alumni created businesses, where these businesses were located and estimate the number and location of jobs created by alumni entrepreneurs.

In Figures 12 and 13 we show the incidence of private entrepreneurship by college and graduation year. For the entire sample, approximately 16 percent of undergraduate recipients reported that they had started a business since graduation. Graduates from Design and Agriculture and Life Science reported significantly higher rates of entrepreneurship. Liberal Arts graduates were least likely to start a business. Not surprisingly the likelihood of entrepreneurship significantly increases with the number of years since graduation. More than 23 percent of ISU alumni who graduated between 1982 and 1986 reported having started a business compared to 7 percent for the most recent graduates in our sample.

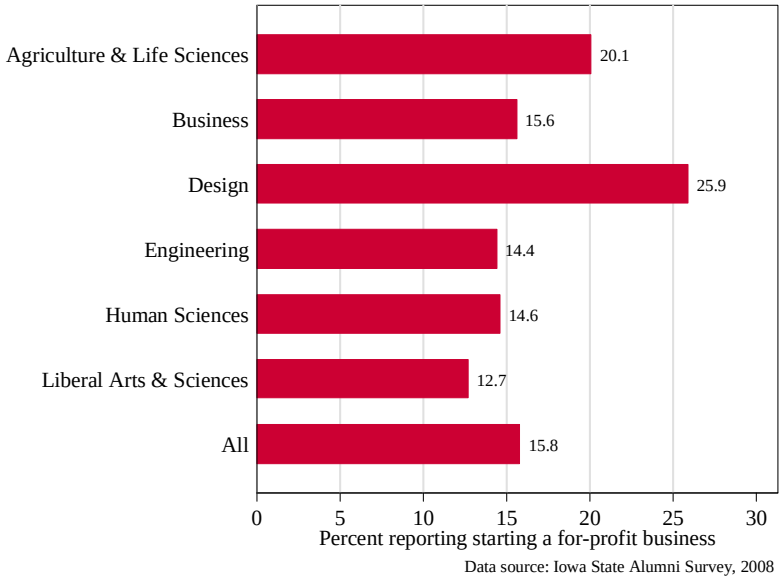
Figure 14 shows the location of each entrepreneur's most successful business. As with current residency, alumni-founded businesses are located primarily in Iowa and adjoining states.

In Table 9 (a & b) we report estimates of the total number of businesses created, still in operation and the number of jobs created in Iowa and the U.S. by undergraduate alumni since 1982. We exclude jobs created abroad. In total, we estimate undergraduate alumni have established nearly 20,000 businesses since 1982 and created more than

[6] Baumol, William J., Robert E. Litan and Carl J. Schramm. 2007. Good Capitalism, Bad Capitalism and the Economics of Growth and Prosperity. Yale University Press, New Haven, CT.

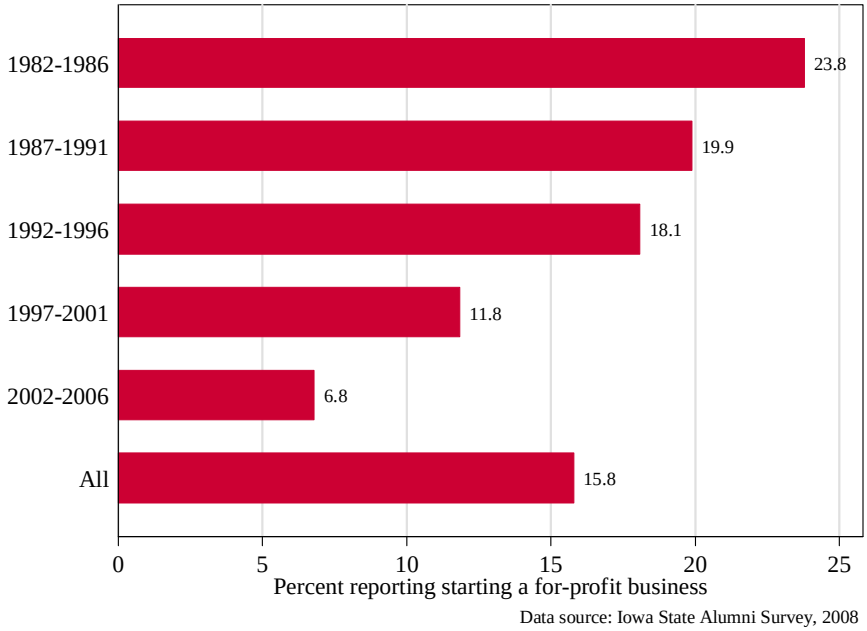
222,000 jobs in the U.S. of which 35,000 jobs are in Iowa. Of all the businesses created, nearly 14,000 continue in operation – an apparent survival rate of more than 70 percent. This compares with 66 percent and 44 percent survival rates after 2 and 4 years, respectively estimated by the Bureau of Labor Statistics.[7] The greater firm survival rate in our data may be due to the higher level of educational attainment – all respondents have college degrees. There is a great deal of variability in the total number of jobs created reported by respondents, however, ranging from 1 to nearly 7,000. The average start-up created approximately 12 jobs. Despite the differences in rates of entrepreneurship reported by college (Figure 12) we see in Table 9(a) that the total number of businesses started since 1982 is quite similar for all colleges. Differences in entrepreneurship rates are offset by differences in the size of the graduating class. There is a great deal of difference, however, in the number of jobs created. Graduates of the College of Human Sciences report starting approximately 3,000 businesses and yet created nearly 70,000 jobs in the U.S. Graduates of the College of Liberal Arts, despite having one of the lowest rates of entrepreneurship, report creating the greatest number of jobs in Iowa. Looking at entrepreneurship and job creation by graduation year, we see the expected increase in companies founded and job creation as the cohort ages. However, there remains a great deal of variability in the economic impact of entrepreneurial behavior.

Figure 12. Private entrepreneurship rates by college



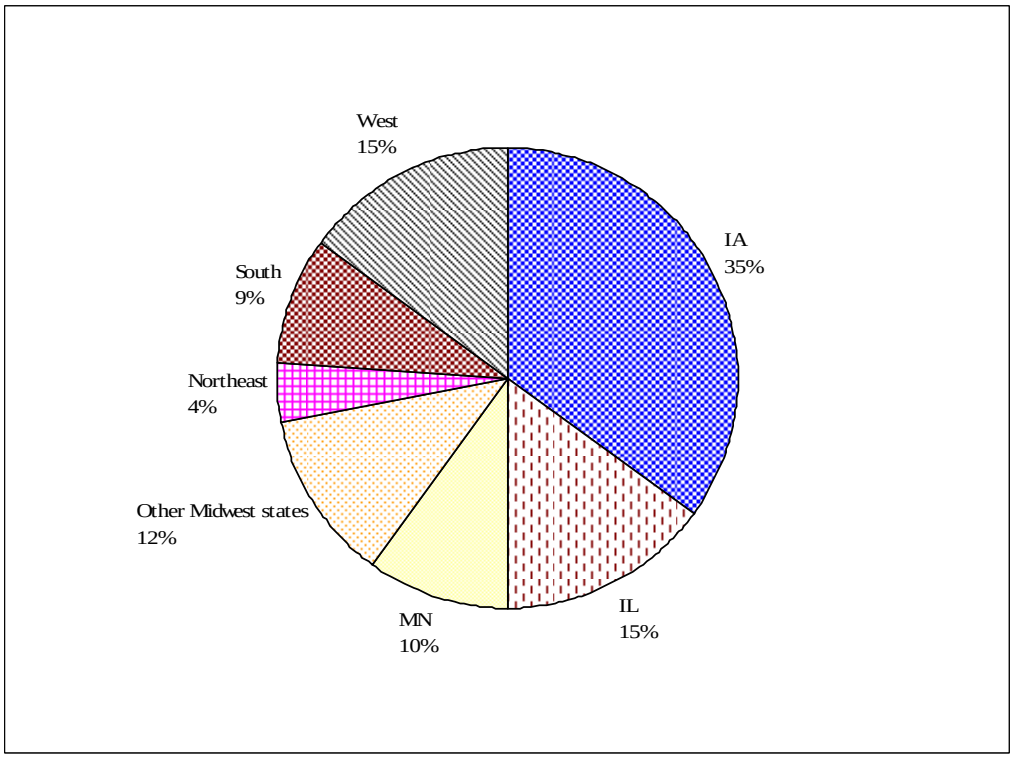
[7] Knaup, Amy E. 2005. Survival and Longevity in the Business Employment Dynamics Data. *Monthly Labor Review*, May, USDA Department of Labor. http://www.bls.gov/opub/mlr/2005/05/ressum.pdf

Figure 13. Private entrepreneurship rates by graduation year



Data source: Iowa State Alumni Survey, 2008

Figure 14. Location distribution of most successful for-profit businesses



Note: Respondents were asked to report the location of their most successful for-profit business.

Table 9(a). Businesses and jobs created by alumni entrepreneurs by college

College	*Number of businesses started*	*Number of businesses in operation*	*Jobs created in the U.S.*	*Jobs created in Iowa*	*Average jobs created/ business started*
Agriculture & Life Sciences	3,331	2,507	56,638	4,269	17.00
Business	3,485	2,478	36,452	6,201	10.46
Design	2,341	1,763	10,909	1,884	4.66
Engineering	3,439	2,555	24,170	4,464	7.03
Human Sciences	2,999	2,053	69,783	2,660	23.27
Liberal Arts & Sciences	3,847	2,400	24,617	15,764	6.40
Whole sample	19,442	13,756	222,569	35,242	11.45

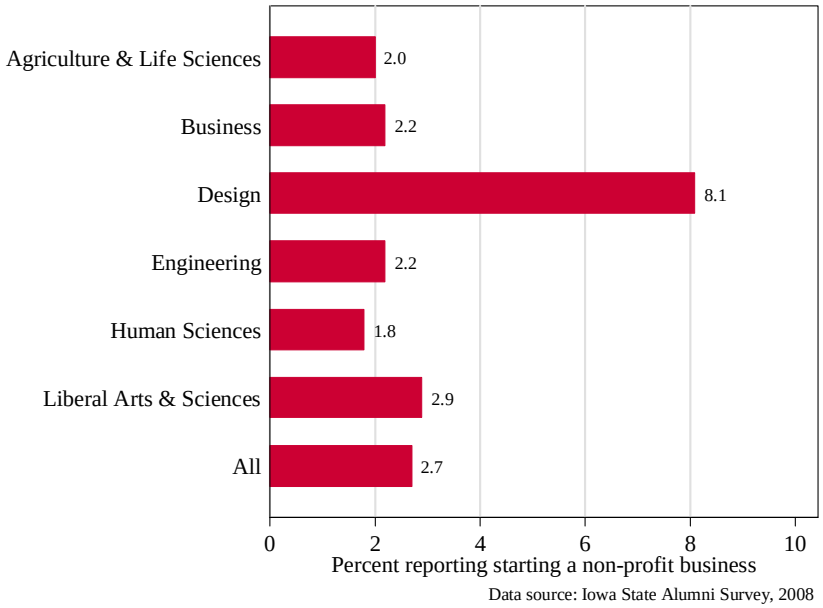
Table 9(b). Businesses and jobs created by alumni entrepreneurs by graduation year

Graduation Year	*Number of businesses started*	*Number of businesses in operation*	*Jobs created in the U.S.*	*Jobs created in Iowa*	*Average jobs created/ business started*
1982-1986	6,155	4,319	46,261	5,400	7.52
1987-1991	4,726	3,277	133,480	19,331	28.24
1992-1996	4,269	2,891	33,109	5,763	7.76
1997-2001	2,735	1,989	5,505	2,295	2.01
2002-2006	1,557	1,280	4,214	2,453	2.71
Whole sample	19,442	13,756	222,569	35,242	11.45

4. Started Non-Profit Organizations

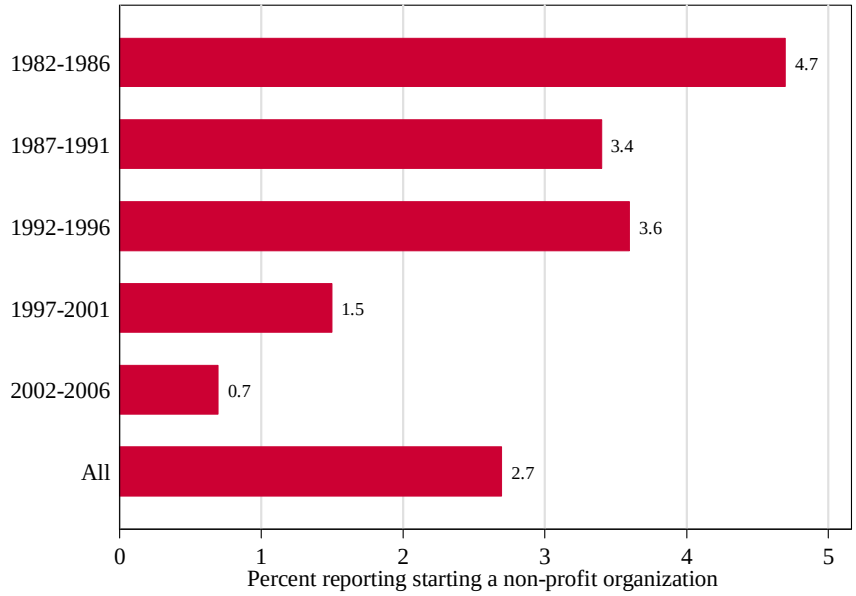
Social entrepreneurship – creating non-profit organizations to meet societal needs, is growing in importance in the U.S. Rates of social entrepreneurship by undergraduate alumni are summarized in Figures 15 and 16. Approximately 2 percent of respondents report creating a non-profit organization. Most of the non-profits focused on education, youth development or sports. The rates are uniform across colleges with the exception of Design graduates – who engaged in social entrepreneurship at nearly four times the average rate. As with private entrepreneurship, the frequency of social entrepreneurship increases with time since graduation.

Figure 15. Social entrepreneurship rates by college



Data source: Iowa State Alumni Survey, 2008

Figure 16. Social entrepreneurship rates by graduation year



Data source: Iowa State Alumni Survey, 2008

5. Created Intellectual Property

Creating intellectual property is another manifestation of innovation and entrepreneurship. In Table 10, we summarize the frequency with which undergraduate alumni received patents or copyrights for their creative products. Slightly more than 4 percent of graduates report having received a patent. This translates into approximately 14,000 patents for the entire population. Nearly 20 percent report copyrighting intellectual property. Literature and software were the most common creative products protected by a copyright.

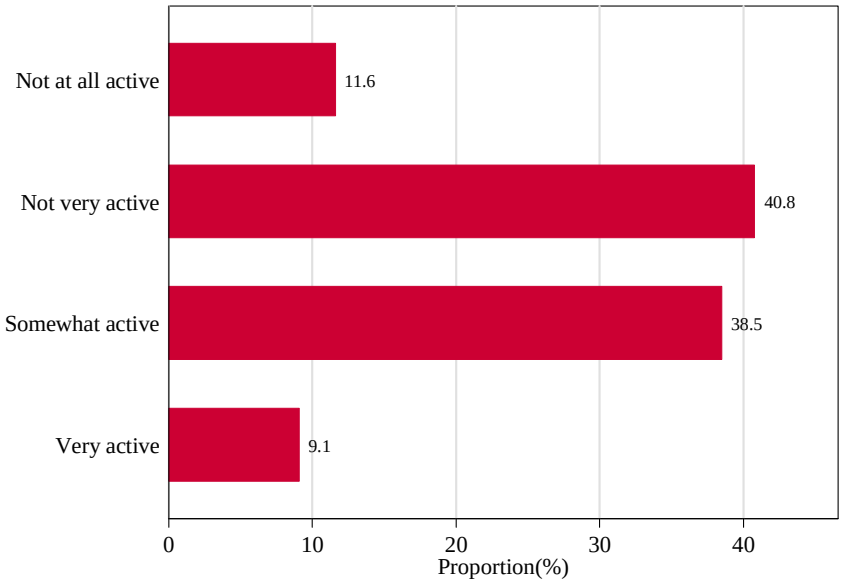
Table 10. Intellectual property produced by Iowa State University undergraduate alumni, 1982-2006

Intellectual property	*Percent reporting*
Patent	4.2
Copyrights	16.1
Music	0.5
Literature	9.5
Software	4.1
Video/film	1.0
Graphic arts/photography	2.3
Others	2.2

6. Served Their Communities

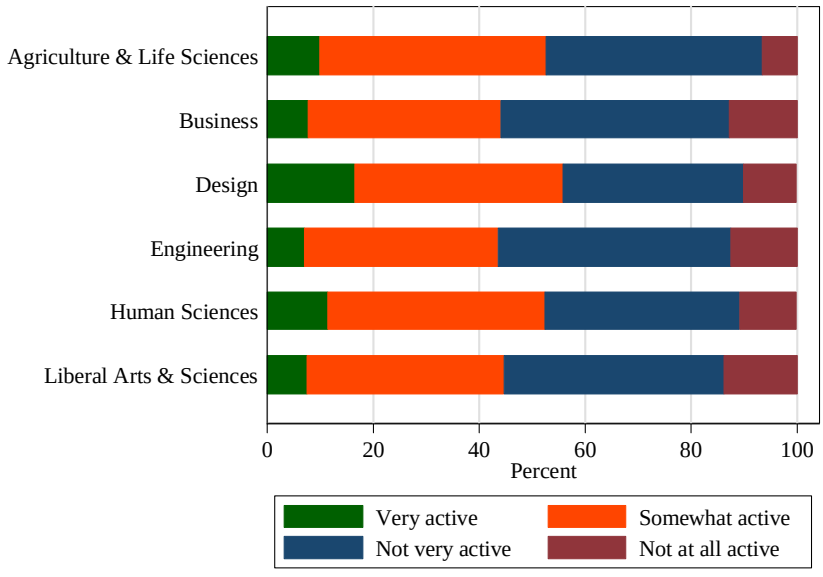
Tables 11 and 12 summarize the average number of years undergraduate alumni report living in their current communities. Average tenure in the community is 9.5 years – ranging from 4 years for recent graduates to more than 15 for those graduating between 1982-1986. No significant difference in community tenure was observed across colleges. Respondents were asked to rate their level of civic activity. This information is summarized in Figures 17 and 18 by college and graduation year. Overall, alumni are about evenly divided between those who consider themselves active in the community and those who do not. Design, Agriculture and Life Sciences and Human Science graduates tend to be slightly more involved in their communities. And, community involvement tends to increase over time. More than 90 percent report being members of a community-based organization (Figures 19 and 20). Finally 60 percent of respondents report having been involved in a community development project since graduation.

Figure 17. Alumni's perceived level of activity in their community



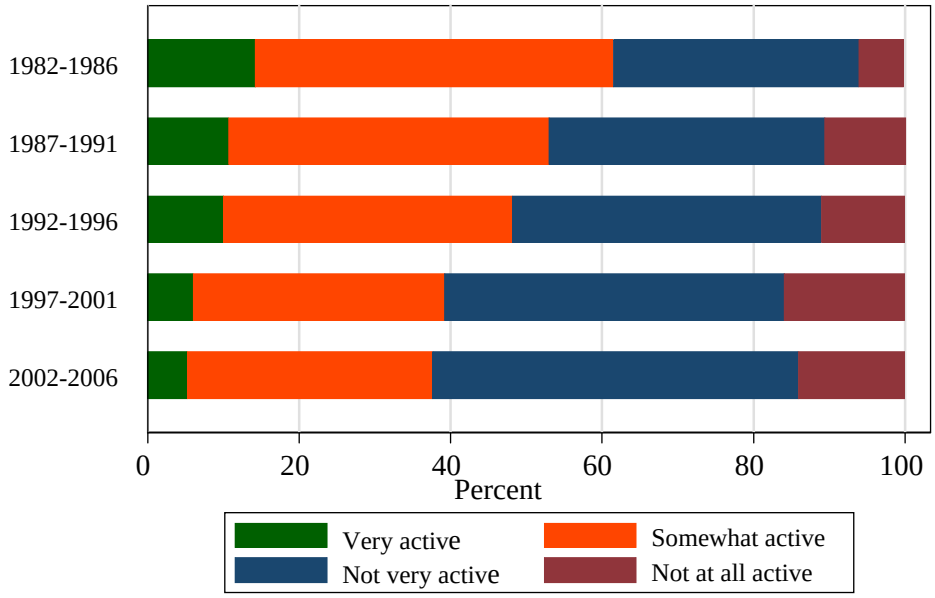
Data source: Iowa State Alumni Survey, 2008

Figure 18(a). Distribution of perceived community activity by college



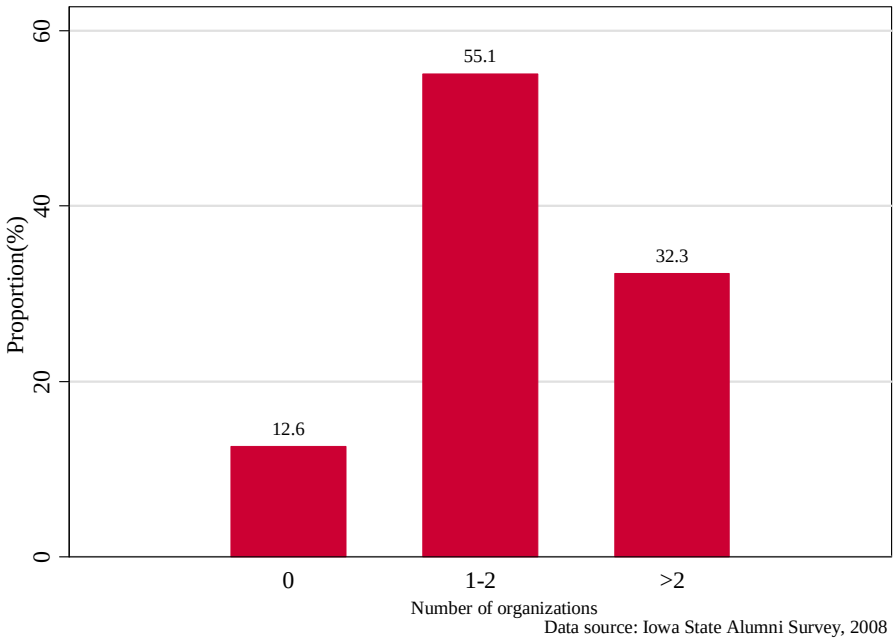
Data source: Iowa State Alumni Survey, 2008

Figure 18(b). Distribution of perceived community activity by graduation year



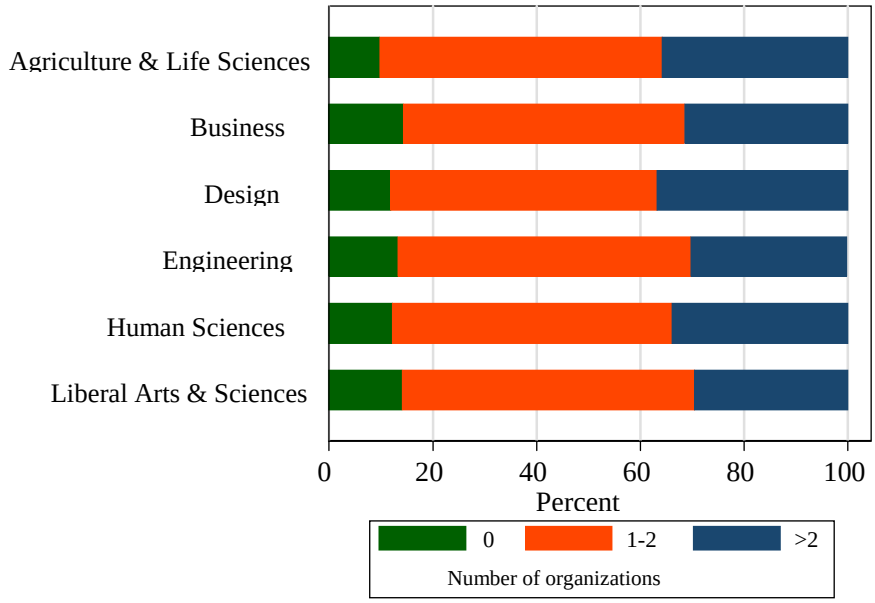
Data source: Iowa State Alumni Survey, 2008

Figure 19. Membership in community organizations



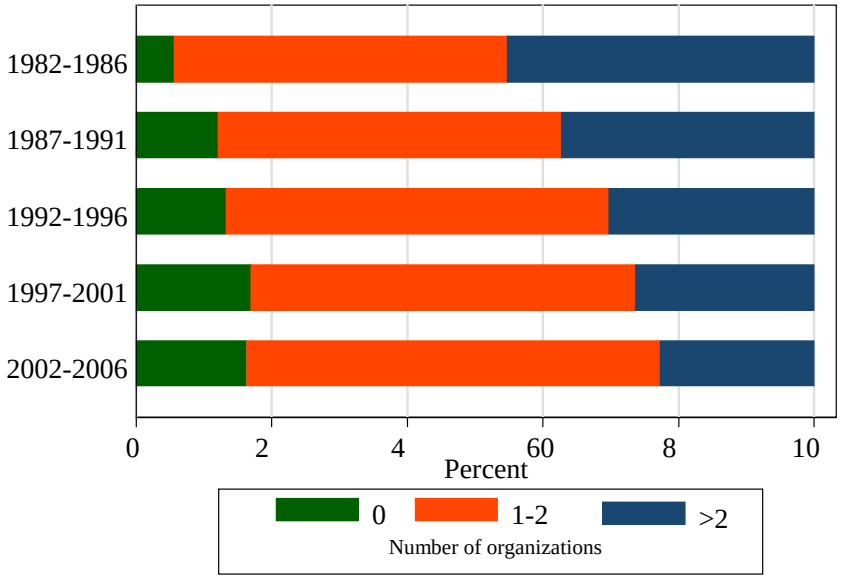
Data source: Iowa State Alumni Survey, 2008

Figure 20(a). Distribution of community organization memberships by college



Data source: Iowa State Alumni Survey, 2008

Figure 20(b). Distribution of community organization memberships by graduation year



Data source: Iowa State Alumni Survey, 2008

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Table 11. Average years of residency in current community by college

College	*Years*
Agriculture & Life Sciences	10.2
Business	9.6
Design	10.9
Engineering	8.4
Human Sciences	10.0
Liberal Arts & Sciences	9.0
Total	9.5

Table 12. Average years of residency in current community by graduation year

Graduation Period	*Years*
1982-1986	15.3
1987-1991	11.4
1992-1996	9.6
1997-2001	6.7
2002-2006	4.8
Total	9.5

7. Started Families

Nearly 75 percent of undergraduate alumni report that they are currently married or partnered (Table 13). Well over half of the respondents have children – ranging from 14 percent for the most recent graduates to approximately 80 percent for those graduating between 1982 and 1986.

Table 13. Marital status by graduation year

Graduation year	*Single, never married*	*Married/ Partnered*	*Separated/ Divorced*	*Widowed*	*Total*	*Have children*
1982-1986	8.1	84.9	5.7	1.4	100	79.7
1987-1991	9.2	84.6	5.5	0.7	100	75.7
1992-1996	12.3	83.0	4.5	0.2	100	71.6
1997-2001	21.5	74.4	4.1	0.0	100	47.9
2002-2006	50.9	47.9	1.2	0.0	100	14.0
All	21.4	74.1	4.1	0.5	100	56.5

HOW ARE THEY DOING FINANCIALLY?

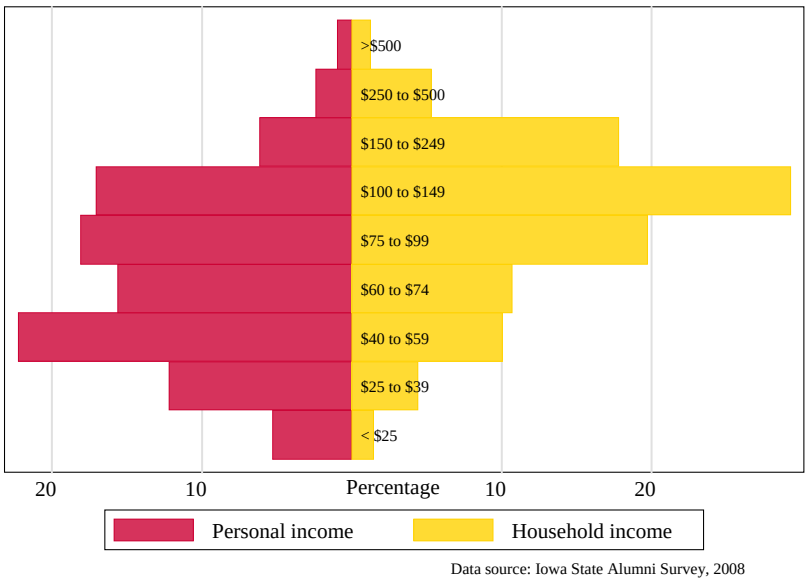
One of the primary drivers for higher education is improved lifetime earning capacity. Undergraduate alumni were asked about their current personal and household incomes. The distribution of reported personal and household income for full and part-time employment is presented in Figure 21. Tables 14 and 15 provide estimates of average personal and household income by college and graduation year. On average, fully employed undergraduate alumni earn approximately $91,000 annually. The median income is $67,500. This compares with a national median income for all workers of $40,690 and $51,324 for workers with bachelor's degrees.[8] More than half of ISU undergraduate alumni report household incomes in excess of $100,000 – 24 percent are greater than $150,000.

In Figure 22(a & d) we show the distribution in personal and household income by college and graduation year. Engineering graduates tend to report higher personal incomes. Graduates of Human Sciences cluster more in lower salary ranges. For all graduates, the distribution of incomes shifts to the right and becomes more variable as the cohort ages.

[8] Bureau of Labor Statistics, Current Population Survey. http://www.bls.gov/emp/emptab7.htm

Finally in Table 16 we show the income returns to further education by graduation year and highest degree obtained. Clearly receipt of the bachelor's degree creates a solid foundation for securing above average income. But a masters or professional degree enhance earnings. Since salary information does not include the direct and indirect costs of further education, the net return to this investment cannot be determined from this information. But we can say, that further education does enhance lifetime earnings.

Figure 21. Current personal and household income distribution



Note: Personal and household income of alumni who are currently students, homemakers, retired or unemployed are excluded. Unit of income is $1,000.

Figure 22(a). Current personal income distribution by college

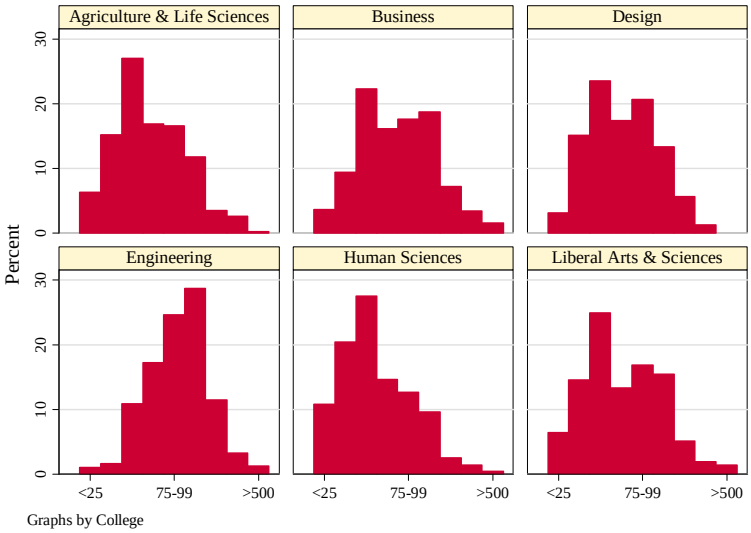
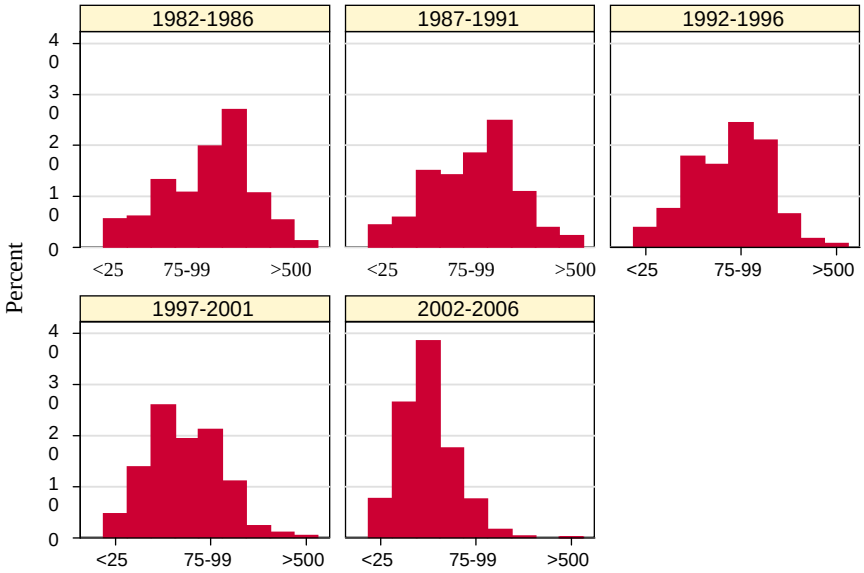


Figure 22(b). Current personal income distribution by graduation year



Note: Personal income of alumni who are currently students, homemakers, retired or unemployed are excluded. Unit of income is $1,000.

Figure 22(c). Current household income distribution by college

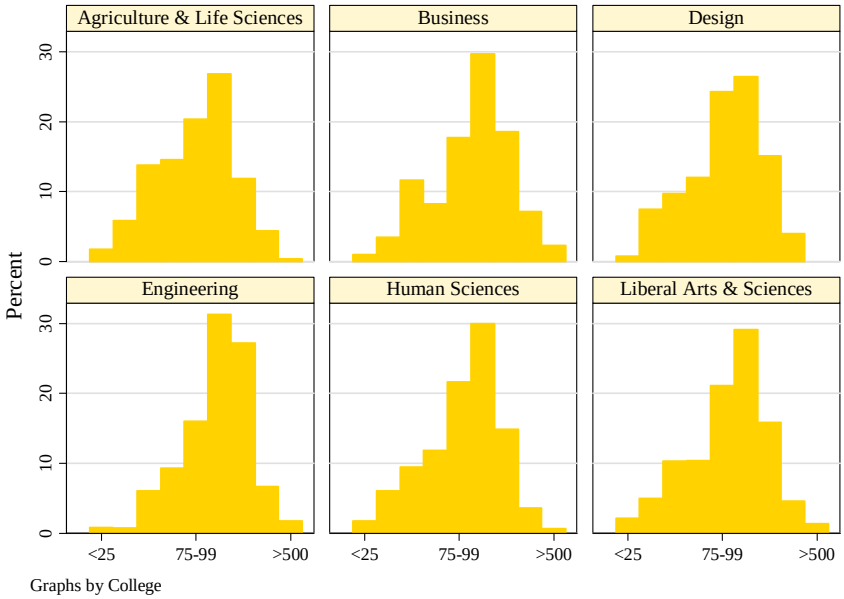
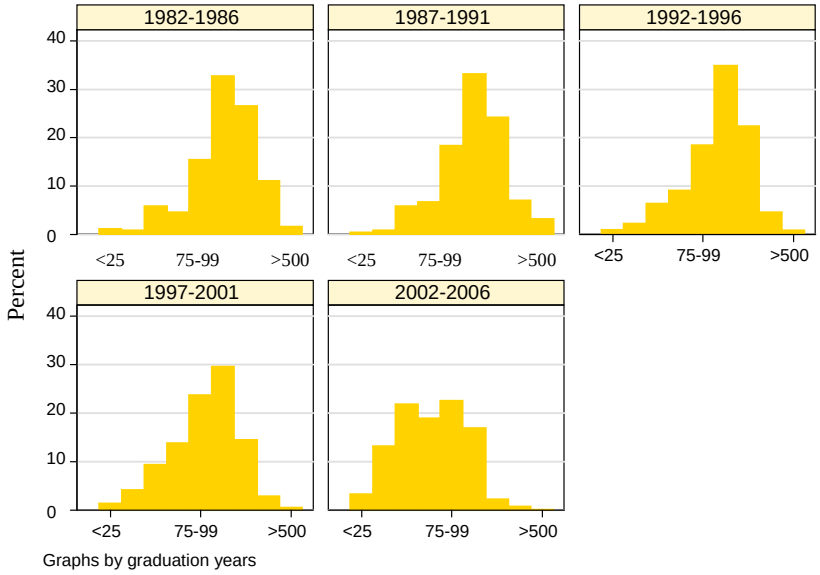


Figure 22(d). Current household income distribution by graduation year



Note: Household income of alumni who are currently students, homemakers, retired or unemployed are excluded. Unit of income is $1,000.

Table 14. Average current personal and household income by college, $1,000

College	*Average personal income*	*Average household income*
Agriculture & Life Sciences	78.5	113.4
Business	102.3	145.4
Design	79.4	115.2
Engineering	118.5	154.1
Human Sciences	68.7	119.2
Liberal Arts & Sciences	88.1	127.5
Total	91.6	131.9

Note: Personal income of alumni who are currently students, homemakers, retired or unemployed are excluded. Unit of income is $1,000.

Table 15. Average current personal and household income by graduation year, $1,000

Graduation period	*Average personal income*	*Average household income*
1982-1986	118.5	166.9
1987-1991	118.9	162.4
1992-1996	95.3	138.2
1997-2001	75.3	116.9
2002-2006	51.2	77.8
Total	91.6	131.9

Note: Personal income of alumni who are currently students, homemakers, retired or unemployed are excluded. Unit of income is $1,000.

Table 16. Average income of alumni by terminal degree and graduation year, $1,000

Graduation year	*Bachelor's degree*	*Master's degree*	*Doctoral degree*	*Professional degree*
1982-1986	108.1	125.4	106.8	198.1
1987-1991	115.2	123.9	98.7	150.2
1992-1996	87.0	98.1	88.1	156.9
1997-2001	70.5	80.1	85.7	100.8
2002-2006	49.6	60.3	45.3	58.5
Total Population	81.4	104.2	100.4	138.6

Note: Alumni who are students, retired, homemaker or unemployed are excluded. The education achievements are exclusive. Alumni who have multiple degrees are grouped according to their highest degrees attained.

SO-
WHAT DO WE KNOW?

As we said in the beginning, this paper is a descriptive overview of the career paths of Iowa State undergraduate alumni. We attempt to describe where they are now, what they are doing and, to the extent we can, the path that brought them to their current occupation and community. We can't, at this point, offer much insight into the factors that influenced career choice and

accomplishments. Further we have not attempted to tie our alumni's career accomplishments back to their undergraduate educational experience. These topics are the focus of ongoing research.

But we can say that, on average, our undergraduate alumni are:

- employed,
- nicely compensated,
- growing professionally,
- acquiring additional education,
- starting businesses and non-profit organizations,
- creating intellectual property,
- serving their communities,
- entering or have entered into married or partnered relationships,
- and, by our estimates, have had 116,338 children.

In subsequent reports we will focus on private and social entrepreneurship, community development and social capital. Then we will take an in-depth look at student background, their educational experiences and career accomplishments.

APPENDIX I.

1. Sampling procedure.

Data for this study were drawn from a proportional random sample of all ISU alumni graduating between 1982 and 2006 with a Bachelor's degree. The sampling rate was approximately 24 percent. Two years, 1982 and 1992 were over sampled at 100 percent to permit a cohort analysis of career choice and business cycle. The sampling population consisted of 84,917 alumni. The total sample drawn was 25,025. We received 5,416 usable surveys for a response rate of 21.6 percent.

2. Weighting procedure.

The weights are computed as follows: Let N_t be the total number of alumni who graduated from Iowa State University with a Bachelor's degree in year *t*. Let n_{jt} be the number of alumni who graduated from college *j* in year *t*. The proportion of these alumni out of the graduates from Iowa State University in year *t* is n_{jt}/N_t. The corresponding number of alumni in our sample who graduated from college *j* in year *t* is s_{jt}. Each individual in our sample is then assigned a sampling weight $\frac{n_{jt}}{s_{jt}}$ such that the weight will represent the number of total alumni from college *j* in year *t*.