

GRADUATE ENTREPRENEURS PROSPER, INNOVATE
**New Study Indicates Entrepreneurship Program Alumni Start More New Businesses,
Develop More Products, Make More Money than Their Peers**

Entrepreneurship education is highly advantageous for not only its graduates but also the companies they lead or work for, according to a new University of Arizona study.

Compared to other graduates of the UA's Eller College of Business and Public Administration, alumni of the Berger Entrepreneurship Program make more money and their firms grow more rapidly. They are also more likely to work for high-tech companies and to be instrumental in new-product development, indicates the study, which was prepared for the Kauffman Center for Entrepreneurial Leadership by UA economists Alberta Charney and Gary D. Libecap, who heads the Berger Entrepreneurship Program.

Charney and Libecap surveyed 2,484 Eller College alumni, 460 of whom have graduated from the program since its founding in 1983. The response rate was about 21 percent – 511 alumni, including 105 entrepreneurship graduates, completed and returned the xx-page questionnaire. Also surveyed were department heads and other administrators from the University of Arizona (including the Office of Technology Transfer) and the UA Foundation, and the Berger College dean, Mark Zupan.

Among the key findings: Compared to other Eller College alumni, entrepreneurship graduates

- are three times more likely to start new businesses. The study found, after controlling for personal and environmental factors, that “entrepreneurship education increased the probability of ¼ being instrumental involved in a new business venture by 25 percent¼.”
- are three times more likely to be self-employed (11 percent after controlling for personal and environmental factors). They are more likely to be employed full time and less likely to work for government or nonprofit entities.
- have annual incomes that are 27 percent higher and own 62 percent more assets. “Controlling for personal characteristics, entrepreneurship education increases the income of graduates by \$12,561,” the study’s authors deduced. Controlling for individual characteristics, entrepreneurship graduates working for large firms earn about \$23,500 more than their counterparts.
- are more satisfied with their jobs (the margin, after controlling for outside factors, was about 1 percent).

The study found a discrepancy between the growth rates of entrepreneurship graduates’ and other Eller College alumni’s firms, whether the graduates were employees or owners. The discrepancy was striking in small firms but “more difficult to detect” for larger firms.

Entrepreneurship graduates founded and worked for high-technology firms in greater numbers than other Eller College alumni. They are more involved in new-product development and R&D activities and work with products having shorter life spans.

Working in teams, entrepreneurship students prepare business plans, many of which evolve into going concerns. Between 1985 and 1999, at least 81 businesses developed (among 289 business plans prepared). In 1999, 50 percent of the student plans were based on innovative technologies. Several of the high-tech plans are prepared by student teams consisting of an entrepreneurship student and a student from another UA discipline, such as engineering, medicine, agriculture, or mining. Two of the more notable companies to emerge from the program are Split Engineering, founded in 1997, which develops and sells digital image analysis systems, software, and services to the international mining industry; and Pegasus Plow, started in 1992 and renamed Rome-Pegasus after its 1999 acquisition by the Rome Plow Company. Now marketed by Caterpillar dealers worldwide, the Pegasus plow achieved remarkable improvements in agricultural pollution abatement, fuel economy, and soil quality.

Charney and Libecap undertook the study in part because the handful of comparable studies all failed to control for socioeconomic and other personal and environmental factors. Entrepreneurship education can be costly, Libecap points out, requiring “considerable financial and human resources that include mentoring, coaching, and other concerted leadership by community leaders, other entrepreneurs,

adjunct instructors, and other faculty members.” Libecap and Charney hoped to demonstrate that the program’s benefits justify the personal and monetary support needed for a first-rate program.

Some of these benefits are self-evident, notably the students’ real-world experience and the university-business-community links that the program promotes. Others, less immediately apparent but borne out by the study, include

- the positive effect on other Eller College curriculums and teaching methods
- the ability to attract private funding to other programs in the Eller College and the university
- the contributions of alumni to Eller College activities.

Some of the findings were unexpected and are difficult to explain. While “gender was not found to be a significant determinant of business venturing,” male entrepreneurship graduates earn more than \$14,000 per year more than women. Charney conjectured that breaks in employment might play a part, though the study does not address the issue. In addition, “the age of graduates positively affects their business venturing,” according to the study, with the probability of starting a business increasing 0.8 percent with each year.”

The Berger Entrepreneurship Program, approved by the UA Board of Regents in 1983, is one of the oldest such programs in the country. Housed in the Karl Eller Center, the Eller College of Business and Public Administration, the program has graduated 594 undergraduate and graduate students, of whom 262 were employed by established companies at the time of the study, 106 operated their own companies, 31 worked for government or nonprofit entities, and 40 were engaged in graduate study.

University of Arizona
Karl Eller Center - Berger Entrepreneurship Program
Tucson, Arizona
(520) 621-2576
www.bpa.arizona.edu/programs/berger

