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100 COLLEGES AND UNIVERSITIES
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More than 80 years after the first entrepreneurship education program began at the University of Michigan at Ann Arbor, and a decade or so since such programs mushroomed into the thousands, it's clear that entrepreneurship

can be taught. But are those who study it more likely to become entrepreneurs? And will they be more successful than other business students?

As part of *Entrepreneur's* 2005 rankings of the nation's university entrepreneurship programs, we posed those questions to directors and professors at top-level entrepreneurship education centers across the country. Alumni entrepreneurs of some programs were also asked whether their education had made a difference. The answers across the board were overwhelmingly positive.

That may come as a relief to entrepreneurial-minded students, but it still leaves one question unanswered: Where should they go to get that entrepreneurship education? *Entrepreneur's* annual rankings, now in their third year, help provide the answer.

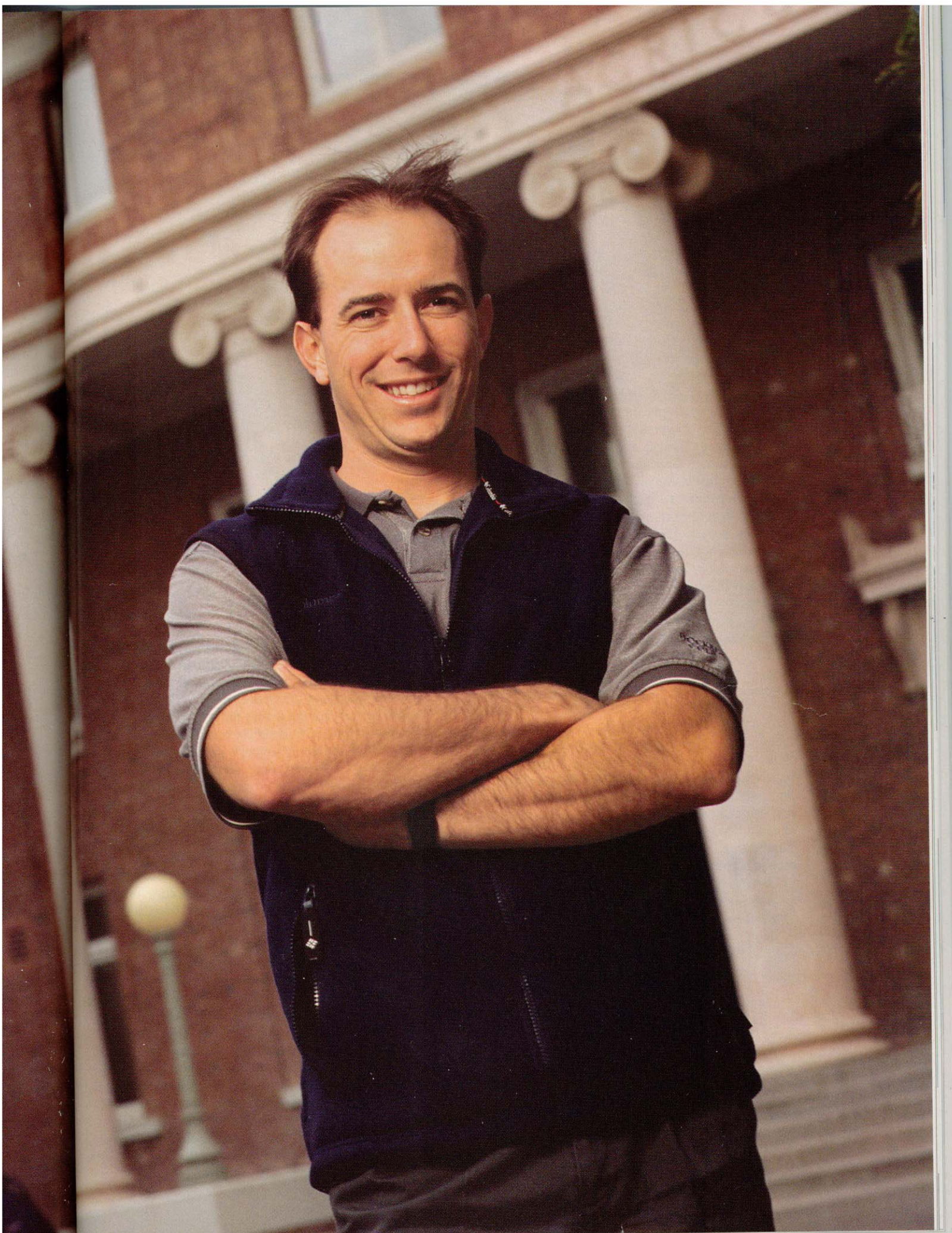
This year saw some additions to the ranking's variables, according to David Newton, professor of entrepreneurial finance at Westmont College in Santa Barbara, California, and founder and president of Tech-Knowledge Point Corp., the new-venture research firm that compiles and analyzes the data for the rankings. Programs with multiple entrepreneurship centers for microenterprises, women-owned firms, technology transfer or other specialties were allowed to provide separate descriptions. Adjunct professors—typically experienced entrepreneurs from outside academia—were counted as faculty. New course titles were added as entrepreneurship education offerings expanded. And Newton began distinguishing between business plan competitions that offer modest cash prizes and

BY MARK HENRICKS

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Independent study:

A former engineering student, Seton Claggett studied entrepreneurship at The University of Arizona because he didn't want to work for "the man."



those that give winners access to financiers with the possibility of significant funding.

In the rankings, the University of South Carolina, Columbia, moved up from the second quartile of national comprehensive programs to the top quartile, while the University of California, Berkeley, slipped from the first to the third quartile. Regional comprehensive programs saw more changes as four formerly top-ranked programs—Ball State University; California State University, Fresno; Iowa State University; and Marquette University—fell to the second quartile. Moving into the top quartile were Brigham Young University, North Carolina State University, University of Colorado at Denver and University of Illinois at Chicago.

Some schools moved up in the rankings thanks to higher scores boosted by one-time events such as a win in a national business plan competition. Others implemented long-term additions to their programs with new classes, faculty or creative initiatives such as outreach programs to attract new students. According to Newton, the University of South Carolina, Columbia, for example, “has really been on the move the past several years in terms of expanding, upgrading and doing some innovative things in their entrepreneurship program.”

EDUCATION'S LASTING EFFECTS

One variable Newton doesn't analyze, however, is how effective schools are at developing entrepreneurs who start successful businesses. That's because few schools do a good job of tracking students after they leave. “We've had thousands of students go through, and it's hard to state with any accuracy the results of the program,” says Raman Chadha, executive director of the entrepreneurship center at Chicago's DePaul University.

There is no shortage of anecdotal evidence, however, as all schools can point to alums who have started and run successful ventures. That kind of evidence can turn

skeptics into believers. “Originally, I had the viewpoint that it's difficult to teach entrepreneurship and have an impact on the likelihood that someone will become an entrepreneur,” says Chadha. “But I've changed on that.”

He'll get no argument from Jeffrey Betz. Betz and fellow students Cecilia Domingos, 27, and Michael Lobsinger, 33, invented, designed, manufac-

ONLINE EXCLUSIVE For a complete listing of the collegiate entrepreneurial program rankings, visit www.entrepreneur.com/topcolleges. For detailed listings, sorts and comparisons, plus complete analysis of more than 75 criteria at 500 collegiate entrepreneurship programs nationwide, go to www.entrepoint.com.



Making the grade: A class assignment morphed into a successful startup for Michael Lobsinger, Cecilia Domingos and Jeffrey Betz (l. to r.) of Orca Gear.

ured and created a plan to sell attractively styled inflatable life jackets as part of an assignment in Rensselaer Polytechnic Institute's graduate entrepreneurship program. Today, 3-year-old Orca Gear Inc. of Troy, New York, is getting widespread praise for its products, and Betz, the 30-year-old COO, projects \$1 million in 2005 sales.

“Our story definitely supports that you can learn entrepreneurship,” says Betz, who earned his MBA in 2003. To get their product off the ground, the trio used cash won in business plan competitions for initial funding, tapped professors for consulting and got free help developing a prototype from local companies. “For the first two years, no one really charged us anything,” Betz says.

Encouraging anecdotes like Betz's aren't the end of the story—while few programs can say for sure how many and what kind of entrepreneurs they produce, some have made the attempt. Iftekhar Hasan, acting dean and interim director of Rensselaer's entrepreneurship center, says that about 1 in 6 of its entrepreneurship graduates start and run businesses successful enough to attract significant funding. “Fifty percent of the students say they're going to start something,” Hasan says. “But about 15 to 20 percent have successes three to five years after graduation.”

The University of Houston's Center for Entrepreneurship and Innovation reports 35 percent of its more than 300 graduates are running their own businesses, and all who began ventures stayed in operation for at least two years. “Does that mean they are better off with this program than without it?” asks Daniel E. Steppe, director of the center. “We don't know for sure, but when we talk to

people who have succeeded [without the program], they wish they'd had it when they were starting."

Perhaps the only way to say for sure would be to compare the experiences of entrepreneurship students with those of other business students. As it happens, just such a study was published in 2003. The "Impact of Entrepreneurship" study compared 105 graduates of The University of Arizona's entrepreneurship program with 406 non-entrepreneurship business school graduates and found that the entrepreneurship grads were three times as likely to be self-employed and three times as likely to be somehow involved in forming new ventures.

"I'm a firm believer that it works," says Gary Libecap, co-author of the study and director of Arizona's Karl Eller Center. Not only do entrepreneurship students start more companies, but they are also more successful at it. Sales and employment growth of companies owned by or employing entrepreneurship graduates was more than five times the rate of other firms. Want to hire such a paragon? Get ready to pay—the study found entrepreneurship graduates working in large firms earn, on average, \$23,000 a year more than non-entrepreneurship business graduates.

Odds are, however, the best students won't be interested in coming onboard. "I didn't want to work for 'the man,'" Seton Claggett says, explaining why he started TriSports.com LLC, a Tucson, Arizona-based online retailer of athletic gear, after graduating from Arizona's entrepreneurship program in 1998.

"I learned a lot," says the 29-year-old, whose 10-employee business projects between \$5 million and \$10 million in sales in 2005. Studying business planning and getting advice from professors and other alumni—especially while getting underway after graduation—top Claggett's list of benefits he got from his studies. "If you paid someone for that information, it could cost you a fortune," he says.

In addition to business planning and contacts, entrepreneurs need skills that many general management students don't, including risk management and knowledge of how to raise capital. "These are key managerial skill sets that aren't always honed in the traditional curriculum," says Michael Camp, academic director of the Center for Entrepreneurship at The Ohio State University in

Columbus. Entrepreneurship students are also taught different approaches to concepts such as opportunity recognition, where they learn to seek profit rather than protect resources.

Perhaps most specific to entrepreneurs is the ability to persist when setbacks occur. "We try to instill the idea that failure is a process," says Clay Hamner, director of the Center for Entrepreneurial Studies at the University of North Carolina at Chapel Hill. "You try to reduce your risk of failure to the lowest point you can, but you continue."

Entrepreneurship programs increasingly offer students access to capital as well as stoicism. Hamner brings in angel and institutional VCs, private equity buyout firms and other financial industry people to talk to students and, sometimes, initiate contacts that result in funding. Hamner adds that the university itself sometimes invests in companies begun by alumni.

Most entrepreneurship programs also stress experiential learning, urging students to take internships in operating companies. Some focus on placing students in fast-growth ventures; others stress international opportunities where students can live and work overseas. Some will pay part of the student's salary to encourage employers—many also alums—to take a student trainee.

The students themselves often engage in what amount to post-graduate internships, working for a few years in companies founded by other entrepreneurs while learning, building wealth and accumulating contacts. After earning his MBA from the University of North Carolina in 1995, Ed Hubbard worked for Dell and Intel Corp. for

TOP 10 NATIONAL/REGIONAL PROGRAMS

As ranked by program directors, faculty and alumni

1. Babson College
2. The University of Arizona
3. University of North Carolina at Chapel Hill
4. Indiana University, Bloomington
5. Southern Methodist University
6. Rensselaer Polytechnic Institute
7. Massachusetts Institute of Technology
8. California State University, Fresno
9. University of Colorado at Boulder
10. Wake Forest University

TOP 5 PROGRAM DIRECTORS

As ranked by their peers

1. **BILL BYGRAVE, STEPHEN SPINELLI, JEFF TIMMONS:** Babson College
2. **DON KURATKO:** Indiana University, Bloomington
3. **STAN MANDEL:** Wake Forest University
4. **GARY LIBECAP:** The University of Arizona
5. **JEFF REID:** University of North Carolina at Chapel Hill

PROGRAM AT A GLANCE: Curious about what you'll actually get in a top entrepreneurship education program? The University of Houston's Center for Entrepreneurship and Innovation, opened in 1991, offers a glimpse.

Since 1995, Houston has offered a bachelor's of business administration in entrepreneurship. Its six-course general entrepreneurship program is unlike most in that it was designed from scratch to educate entrepreneurs as opposed to simply repackaging existing marketing, finance and management classes to create a curriculum. Both Ph.D. academics and startup veterans are among its five faculty.

Each of the 33 students in each class must come up with an idea for a business. That idea is further developed during the two-year program through creating business and marketing plans, and performing other analyses. "When you graduate, you walk out the door and start this business," says Daniel E. Steppe, director of the comprehensive program at the University of Houston.

The program emphasizes practical knowledge, featuring frequent guest lecturers and intensive mentoring. And an innovative intrapreneurship certificate program offered to students who complete a two-course curriculum was quickly oversubscribed by students from across the campus when it was rolled out last year.

five years before starting United Devices Inc. in 2002. The Austin, Texas, company, which developed a technology that allows thousands of computers to pool unused power to crack complex problems, has 50 employees and over \$30 million in funding. "I think [the education] does help," says Hubbard, 38, who always planned to start his own company.

So is entrepreneurship education the way to go? Betz of Orca Gear thinks so. "If it wasn't for this," he says, "I'd be going on *The Apprentice*."

MARK HENRICKS is Entrepreneur's "Staff Smarts" columnist.