Head of the Class: Purdue

Training grads for A&D positions is a tough challenge. These schools answered the call.

CAROLE R. HEDDEN/PHOENIX

Doctoral student Matthew Borg holds a model of an X-51A. Purdue's engineers have conducted experiments to yield data critical for the vehicle's design.

The cost of recruiting a new college graduate goes far beyond making the student an offer. Companies must have the resources to maintain an on-campus presence, manage intern and cooperative experiences, be properly represented on advisory boards and foster ongoing communication with students.

Several of the aerospace and defense industry's top-tier companies are applying supply chain techniques to university recruiting, assuring dollars and people are targeted to where the best results are expected. This has led to a preferred list of schools that meet established criteria, and from which companies recruit the best and brightest.

Even companies that don't apply these techniques to their recruitment tactics tend to use a similar set of criteria to determine their preferred schools. These include:

● Capacity—the courses and innovative methodologies offered, the research and development projects underway and diversity.

● Success—the measure of how well past graduates within the specific company performed, retention of past graduates, acceptance of offers from the company by graduates of that school.

Purdue University jumped from No. 4 to No. 1 in a year.

The AVIATION WEEK Workforce Study asked companies to list the top five institutions from which they recruit, which resulted in a list of 64 different institutions. This doesn't mean companies aren't recruiting elsewhere—the actual list of universities and colleges from which employees graduate is in the hundreds, from the smallest liberal arts college to the largest universities.

Demographic diversity is important, and necessary for an industry whose numbers aren't changing in that respect. The rate of women and underrepresented minorities enrolled in science, technology, engineering and math programs, as well as the rate of those entering A&D, has not changed significantly in the past 10 years.

However, recruiting managers and universities note as important what they refer to as

the "big D"—Diversity in how a person thinks, approaches problems or reacts to challenges.

Also considered are the relationships between employees and the university (advisory boards, for instance) and the location or ability of the university to "feed" the organization.

Purdue University in West Lafayette, Ind., ranked highest in 2008, up from its No. 4 slot in 2007. Tom Farris, head of the Aerospace and Astronautics Dept., says that a decade ago the school responded to input from industry advisers that said students needed to know more than design. That input, paired with Prof. John Sullivan's discussion with a student, resulted in a change in approach. Sullivan was reviewing a project with a student and recommended they go to the lab and use a lathe to test one of the design's aspects. "She said, 'What's a lathe?' She may have known design and aerodynamics, but she didn't know manufacturing,"

TOP-RANKED UNIVERSITIES
From Which A&D Recruits

2007 Rank	2008 Rank	Name of Institution
4	1	Purdue University
1	2	Pennsylvania State University
5	(tie) 3	University of Illinois
5	(tie) 3	University of Maryland
2	(tie) 3	Virginia Polytechnic Institute and University
2	4	Georgia Institute of Technology
	(tie) 5	Arizona State University
	(tie) 5	Ohio State University
5	(tie) 5	University of CA Los Angeles
	(tie) 5	University of CA San Diego
	(tie) 5	University of Washington

he explained. Today, Purdue students are building unmanned vehicles, micro air vehicles and rockets and supporting Indianapolis 500 race teams, gaining experience that goes beyond mere design. "Deciphering why [a project] failed is just as important as the design or its success," Sullivan says.

The university also launched a research and curriculum effort in System of Systems Research, directly tied to input from the industry advisory board.

While industry is big on telling academia what it needs to do better, Farris has some guidance for industry. "We have to send the message that aerospace and defense is exciting and that it helps society and the fellow man," Farris says. "We could do much better in these two areas" (see chart, p. 76).

The top three A&D Preferred Graduate Institutions are Georgia Institute of Technology, Purdue University and the University of California at Los Angeles. ✪