Alamo Academies
Providing a Fast Path from High School to High-Tech Careers

MODEL SUMMARY
Alamo Academies, through mentorship, skill building and more, provides high school students with a pathway into advanced manufacturing careers. Program graduates earn high school and college credit, obtain industry-approved certifications and participate in an eight-week paid summer internship.

BACKGROUND
When Kelly Air Force Base in San Antonio, TX, closed in 1995, the workload was outsourced to government contractors, including Lockheed Martin and Boeing. As part of a 15-year contract, Lockheed Martin supported the development of fighter fleet engines and the maintenance, repair and overhaul of engines used in cargo aircraft for the U.S. government. In 1999, Lockheed Martin faced a future talent shortage as its aging workforce began to retire. The company had to quickly develop a strategy to fill the talent pipeline and transfer the knowledge and skills of its seasoned staff to the next generation of workers — a critically important task to ensure that Lockheed Martin could continue to provide the utmost quality expected by the nation's armed forces.

Lockheed Martin started by offering summer internships to three high school students who were enrolled in aerospace technical courses. Upon the interns’ high school graduation, Lockheed Martin hired these students full time to become part of a new wave of skilled, young talent. The internships were such a success that, in 2001, Lockheed Martin commissioned local colleges and businesses to develop the Alamo Academies to “grow their own young talent” within the San Antonio community. The program was designed to close the region’s skills gap by developing a pipeline of skilled, entry-level workers for the high-tech industries of advanced manufacturing, health care, information technology, aerospace, and oil and gas heavy equipment. The resulting program now offers students in high school the opportunity to earn college credits, begin working in a high-tech industry, and prepare for further career and educational advancement.

PARTNERSHIP
Alamo Academies is operated by Alamo Area Academies, Inc., a nonprofit organization. Partners include Alamo Colleges; San Antonio area high schools; more than 100 industry partners (including Toyota and Lockheed Martin); manufacturing associations; economic development departments; chambers of commerce; government organizations (including Port San Antonio and Workforce Solutions Alamo); and the cities of New Braunfels, San Antonio and Seguin.

KEY:
- Apprentice ship
- Certification
- Career Expo
- Cooperative Education/Co-op
- Credentials
- Clinical Training/Practicum
- Externship
- Hands-on Training
- Industry Tour
- Internship
- Mentorship
- On-the-Job Training
- Online and Blended Classroom Training
Alamo Academies is an award-winning, community-wide, collaborative STEM-based program for high school students to earn dual credit (high school and college), obtain industry-approved certifications and participate in an eight-week paid summer internship. Participating students are enrolled in one of five Alamo Academies: Advanced Technology and Manufacturing, Aerospace, Health Professions, Heavy Equipment, or Information Technology and Security. School districts provide the books and transportation for students, and Alamo Colleges provides authorized certification centers and instructors.

Key elements of the program include:

- **Education**: Students learn the technical and soft skills necessary to succeed in a high-tech industry.
- **Paid, For-Credit Internship**: Students complete an eight-week, paid summer internship between their junior and senior years of high school that allows them to apply high-tech processes learned in the classroom to business projects. Under close supervision, student interns at Lockheed learn how to disassemble, prep, test and repair a jet engine; tag parts for service; and grind compressor blades.
- **Exposure to Executives and Development of Presentation Skills**: At Toyota, interns present their internship experiences to Toyota executives in a process that mirrors the one used for full-time engineer management report-outs.
- **Mentorship**: During their internship, students are assigned a supervisor and a team of colleagues, who serve as their mentors.
- **Industry-Recognized Certificates and Certifications**: Graduates receive a Level I Certificate of Completion, certifying that the student has the skills and knowledge needed for an entry-level job in a high-tech industry. Students in the Advanced Technology and Manufacturing program receive nationally recognized Manufacturing Skill Standards Council Certified Production Technician certificates.
- **High School Diploma and College Credit toward an Associate/Bachelor’s Degree**: Alamo Academies graduates earn a high school diploma and receive more than 30 tuition-free credit hours toward a postsecondary degree.

“We encourage Alamo Academies graduates to pursue further training and education. Full-time employees are reimbursed 100 percent for night school, and Level I mechanics who pursue additional education are promoted faster than their peers. Alamo Academies graduates are also considered for Lockheed Martin’s [U.S. Department of Labor]-registered apprenticeship program.”

— Joe Wilson, Community and Government Relations, Lockheed Martin Commercial Engine Solutions

Alamo Academies is recognized by the U.S. Department of Labor, the Federal Reserve Board of Dallas, the Texas Governor’s Office, the Texas Higher Education Coordinating Board, the Manufacturing Institute and the Manufacturing Skill Standards Council as a successful Higher Education Career Academy model for closing the...
skills gap. The Alamo Academies model may be applied across a range of industries, as evidenced by replication of the original Aerospace model to create the other four Academies programs.

Alamo Academies student benefits and outcomes include:

- **Strong Participation and Graduation Rate:** More than 1,100 junior and senior high students have completed the program with an 84 percent first-time-in-college graduation rate — 22 times higher than the state average.

- **High-Paying Jobs:** Graduates' starting salaries are approximately $30,500, plus $12,200 in benefits.

- **Schools-to-Careers Pathway:** 94 percent of graduates receive jobs or pursue higher education and training.

- **Pathway to Future Training and Advancement:** Participants are eligible to receive financial support toward an associate or bachelor's degree and for opportunities to complete partner company apprenticeships.

- **Academic Success for a Diverse Population:** The student population is 78 percent minority (70 percent Hispanic, 6 percent African American and 2 percent Asian).

- **Scholarships:** Program graduates have been awarded more than $14 million in scholarships since program establishment.

Alamo Academies community and business benefits include:

- **Pipeline of Skilled Entry-Level Workers:** Alamo Academies is a demand-based education model triggered by partner businesses that establish the Academies' target enrollment levels to meet their skilled labor demand. At Toyota, the program has provided workers the technical skills needed for advanced manufacturing operations, including troubleshooting and repairing robotics.

- **Mentoring and Training of the Future Workforce:** Through the internship, businesses are able to mentor and train students on company processes and procedures to “grow their own local talent.” This provides businesses priority access to skilled, certified talent while reducing the resources allocated to recruit talent through mainstream hiring practices, such as career fairs and job boards.

- **Economic Development:** Alamo Academies is a strong recruiting tool for encouraging companies to relocate to the San Antonio region. A factor in Toyota's decision to build a manufacturing plant in San Antonio was the Alamo Academies Advanced Technology and Manufacturing program, which provides Toyota a dedicated pipeline of skilled entry-level workers.

“Businesses must be committed to collaborating with their local communities in developing strategies to grow the next generation of local, skilled talent. Those communities with engaged businesses that focus on growing local talent will be the surviving and globally competitive communities of tomorrow.”

— Mario Lozoya, Director, Government Relations and External Affairs, Toyota Motor Manufacturing Texas, Inc.
Alamo Academies partners contribute more than $2 million annually to support program operating costs: Alamo Colleges provides facilities, equipment and instruction; school districts provide textbooks and transportation; employers pay intern salaries; and cities fund operating costs. Toyota also plays a vital role in its commitment to increasing awareness of the program benefits and supporting smaller businesses interested in hosting Alamo Academies summer interns. Through a grant, Toyota provides six smaller businesses the funds necessary to hire and pay Alamo Academies summer interns.

**WORDS OF WISDOM**

Recommendations for businesses interested in building a collaborative, community-based school-to-career program include:

- **Be Engaged in Training Your Future Workforce:** Businesses must be dedicated to developing and sustaining programs that close the skills gap and ensure that their industry continues to thrive. Through internships, businesses can expose young students to the latest technologies and skills needed to remain competitive.

- **Develop a Demand-Based Education System:** Education institutions must align student enrollment to industry workforce demands.

- **Rally the Community:** This model requires a commitment from local government, workforce development teams, schools and employers.

- **Communicate Program Benefits to Key Stakeholders:** Partners must educate parents and high school career counselors on programs, such as Alamo Academies, that lead to high-demand, high-paid jobs with little or no college debt.

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**INFORMATION, TOOLS AND RESOURCES**

- Alamo Academies  
  www.alamoacademies.com
Descriptions of Common Work-and-Learn Models

A Glossary of Key Terms

Following are descriptions of the most common and effective work-and-learn models that are a part of business and industry programs nationwide.

**Apprenticeship**
An apprenticeship is a unique, flexible training system that combines job-related technical instruction with structured on-the-job learning experiences. It provides a unique combination of structured learning with on-the-job training from an assigned mentor. Related instruction, technical training or other certified training is provided by apprenticeship training centers, technical schools, community colleges, and/or institutions employing distance and computer-based learning approaches. The goal is to provide workers with advanced skill sets that meet the specific needs of employers. In many cases, these programs provide apprentices the opportunity to simultaneously obtain secondary and postsecondary degrees, as well as credentials issued by third-party industry organizations. (Source: U.S. Department of Labor)

**Clinical Training/Practicum**
Clinical training combines classroom learning with supervised hands-on immersion experiences in specific fields, mostly in industries that involve human services. In health fields, clinical training is founded on actual observation and lab instruction and/or treatment of patients, as distinguished from theoretical or experimental training. The training is usually highly specialized and includes coursework specific to performing functions and tasks in an actual workplace. (Sources: Siemens Clinical Training & Continuing Education; Clinical Training Institute)

**Cooperative Education/Co-Op**
Cooperative education is the integration of classroom theory with practical work experience, through which students alternate attendance at school with periods of professional employment. At the high school level, the periods of classroom and work-based experience are usually half-days. In higher education, the alternation is most often on a longer time scale. Cooperative education programs enable students to apply technical skills already acquired through the education institution in a real-world workplace setting. Traditionally, cooperative education has been used to aid a student’s transition from school to work, while providing participating employers an opportunity to attract, evaluate, train and ultimately employ a ready source of educated and skilled employees. (Sources: Center for Manufacturing Excellence, University of Mississippi; University of Cincinnati)

**Career Fair, Career Expo, Job Fair**
A career fair, also called a career expo or job fair, is an event held for employers and recruiters to meet with potential job candidates. Industry representatives set up exhibition booths — usually at a secondary or postsecondary institution — where students and job seekers can find information about different career fields, training opportunities and jobs currently available. Career fairs give employers an opportunity to interact with future job candidates and make direct contact with students who are making decisions about what education, training and career to pursue. Quality career fairs offer hands-on activities to participants, allowing them to see firsthand what a job in the industry entails.
Externship
An externship is typically a training program offered by educational institutions and private businesses that gives students brief practical experiences in their field of study and insight and knowledge in a particular career field. Often shorter term than internships, externships are intensive career learning experiences that typically range from two days to two weeks. Although more immersive and structured than job shadowing, these experiences provide the opportunity for students to see firsthand the work activities and responsibilities in various professions and industries. The experience should provide the learner a greater sense of the knowledge, skills and attributes of people who thrive within that given career pathway and industry sector and a complete experience of day-to-day work life.

Hands-On Training
Hands-on training provides student learners an opportunity to use their hands to perform tasks. This training aims to simulate conditions that are as close as possible to real work conditions while avoiding the risks commonly associated with a new employee. In hands-on training, participants typically have the opportunity for repeated practice.

Industry Tour
Companies offer guided tours of their facilities to let students, parents and the general public witness firsthand the day-to-day operations of the business. Typically lasting up to two hours, tours are led by knowledgeable staff members who show and describe the companies’ processes, products and protocols, as well as point out the skills and training needed for different jobs. Quality industry tours typically result in greater awareness of the company and the industry and increased engagement with the local community, schools and future employees.

Internship
An internship is a formal program that provides practical experience for learners in an occupation or profession, during which the learner is immersed in a work situation for a limited period of time. Internships can be paid or unpaid and usually accompany or relate to academic coursework or training. A quality internship provides the learner an increasingly thorough grasp of the career field, extensive experience in specific job functions, application of education and training to specific duties, and a feel for what it is like to work on a daily basis in the industry. While not always intended to result in employment at the sponsoring company, internships help employers expose potential workers to their workplace and industry and recruit, screen and test-fit future job candidates before they are hired full time.

Job Shadowing
Job shadowing is a work experience option through which students learn about a job by walking through the working day as a shadow to a competent worker. The job shadowing work experience is a temporary, unpaid exposure to the workplace in an occupational area of interest to the student. Students witness firsthand the work environment, employability and occupational skills in practice, the value of professional training, and potential career options. Job shadowing is designed to increase career awareness, help model student behavior through examples, and reinforce for the student the link between classroom learning and work requirements. Almost any workplace is a potential job-shadowing site. (Source: Paris, K., and Mason, S. (1995). Planning and Implementing Youth Apprenticeship and Work-Based Learning. Madison, WI: University of Wisconsin, Center on Education and Work)

Mentorship
Mentorship is the coupling of a novice with an older, more experienced professional wherein the expert shares knowledge and experience with the novice over the course of time. Mentorship can be either formal or informal and can happen face to face; online; or in conjunction with other work-and-learn opportunities, such as internships and job shadowing. Mentorships help mentored youth improve their overall academic achievement and develop the necessary skills to enter or continue on a career path. They also provide guidance for decision making. Quality mentorships usually involve mentee training and alignment to the company's culture and goals.
On-the-Job Training (OJT)
OJT is training by an employer that is provided to a paid participant (either an incoming or incumbent employee) while engaged in productive work in a job that provides knowledge or skills essential to the adequate performance of the job. OJT is usually limited in duration, as appropriate to the occupation for which the participant is being trained, taking into account the content of the training, the prior work experience of the participant and the service strategy of the participant, as appropriate. (Source: Workforce Investment Act)

Pre-Apprenticeship
Pre-apprenticeship is defined by the Employment and Training Administration as “a program or set of strategies [that is] designed to prepare individuals to enter and succeed in a Registered Apprenticeship program and has a documented partnership with at least one, if not more, Registered Apprenticeship program(s).” Since the pre-apprenticeship model is meant to prepare learners to enter a registered apprenticeship, a quality model provides sufficient applied academic training, as well as industry-based technical skills training and practice, to ensure that students transition successfully into an apprenticeship.

Registered Apprenticeship
A registered apprenticeship encompasses the details and benefits listed in the “Apprenticeship” definition. Additionally, it meets national apprenticeship standards outlined by the registration process with the U.S. Department of Labor (DOL) Office of Apprenticeship or through a state apprenticeship agency. Upon completion of a registered apprenticeship program, participants receive a portable credential (provided by DOL or the state apprenticeship agency) that certifies occupational proficiency as a journey worker for the selected occupation. For more information on the DOL registered apprenticeship program, please visit: www.dol.gov/apprenticeship. (Source: U.S. Department of Labor)

Returnship
A returnship is an internship specifically designed for older professionals who have been out of the workforce for an extended period of time to re-enter a career. In many cases, they are designed to help these individuals refresh their skill sets and learn new technologies before returning as full-time employees. Often lasting around 10 weeks, a returnship provides individuals with an opportunity to sharpen their skills in a given career path or pursue new areas of expertise in a work environment that may have changed significantly since their last experience as an employee. Returnships also give employers the opportunity to screen returning experienced applicants before hiring them full time. (Sources: Goldman Sachs; CareerBuilder)

RESOURCES
- 21st Century Competency-Based Apprenticeship Resources
  http://bit.ly/1RcO4Uh
- Georgetown University Center on Education and the Workforce: Learning While Earning: The New Normal
  http://bit.ly/1XJMXzw
- National Network of Business and Industry Associations: Common Employability Skills
  http://bit.ly/1KCBUUP
- National Network of Business and Industry Associations: Grads of Life ROI Calculator
  http://bit.ly/1X6yKMP
  http://bit.ly/1NesrCd
- Change the Equation: Work-Based Learning: An Employer’s Guide
  http://bit.ly/1jDn6du
- U.S. Department of Labor Office of Apprenticeship
  www.dol.gov/apprenticeship
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