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## AATA Aims to Change the Face of the Industry—Literally

by *Materials Evaluation* Editor Jill Ross

**W**hen John Stewart had the opportunity to retire early at age 47, he could have pursued a life of leisure. Instead, he chose to found the American Aerospace Technical Academy (AATA), a Los Angeles-based 501c3 nonprofit whose mission is to bring high-quality NDT training to the industry at a price that is so affordable that nearly everyone can take advantage of it.

“I wanted to give other people who had the same kind of background as me the same kind of chance to succeed,” he says.

Stewart, who had a modest upbringing in California, had no plans to attend college after graduating high school. Instead, he enlisted in the US Navy at age 18 where he served as a Navy Seabee. Upon his honorable discharge at age 23, he still didn’t know what he wanted to do with his life. The next five years passed without much direction, but after seeing a commercial for the Spartan College of Aeronautics and Technology, he made the decision to move from Modesto, California, to Tulsa, Oklahoma. “Like so many others, I kind of just fell into NDT,” he says.

After graduation, Stewart, who today is an ASNT NDT Level III in radiographic testing (RT), ultrasonic testing (UT), and liquid penetrant testing (PT), and NAS 410 Level III in RT, UT, PT, visual testing (VT), and magnetic particle testing (MT), began his career at Tulsa Gamma Ray in Tulsa, Oklahoma. He ended it at SpaceX in Hawthorne, California, where generous stock options provided an opportunity for an early retirement just five years into his employment with the company.

“I felt like if I could do this, anyone could,” says Stewart. “There are a lot of struggling people out there who just need a direction, and I feel that NDT is a great industry to be in. NDT is critical to our world, and it provides real jobs in growing nontraditional sectors that can pay very well.”



### The Need

Over the course of his 20-year career, Stewart would routinely hear that there was a technician shortage, but there were no numbers backing it up. When he decided to start the AATA, he needed hard data. So, in 2016, the AATA undertook a study that provided a comprehensive overview of the NDT equipment market (AATA 2016). The study researched and profiled more than 120 NDT equipment manufacturers. The analysis was inclusive of all key industries where NDT services are applied, and includes an examination of market trends, five-year forecasts, and vendor market share. The study confirmed that there was indeed a shortage of NDT technicians, which was projected to intensify by 2020.

So there was both an opportunity and a need, and Stewart wanted to bring the training to the people he felt could benefit from it the most: veterans, women, and the economically disenfranchised.

using industry-standard equipment. Over the course of the program, AATA students receive Level I and Level II training in RT, computed radiography, MT, PT, UT, ultrasonic phased array (PAUT), and VT, in addition to education in radiation safety and a foundation in NDT math. Each week represents 40 hours, and the courses meet or exceed *SNT-TC-1A* (2016) and *NAS-410 Revision 4* (2014). As of the writing of this article, at least one area community college (Antelope Valley Community College) recognizes the AATA certificate and will award up to 20 units toward a degree. More agreements with colleges are in the works.

This goal has been made possible by funding from various local and federal sources, including area Workforce Investment Boards, the California Employment Training Panel, the Workplace Innovation and Opportunity Act (WIOA), the Veterans Educational Assistance Program (VEAP), and various veterans' grants

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Stewart, who serves as technical director of AATA as well as founder and executive director, developed a 10-week NDT technologies certificate program that combines classroom education with hands-on training

meant to combat homelessness. The South Bay Workforce Investment Board, which serves 11 cities in the South Bay region of California and operates the One-Stop Career & Business Center, has been proven to be an instrumental partner for the AATA in placing students in the program.

Through these various programs, financial assistance is available for veterans, the unemployed, and the underemployed; however, anyone who is interested in the program can attend, says Stewart. Students do not have to be residents of California (although currently all physical training locations are in California—Los Angeles, Riverside, Torrance, and Inglewood). Tuition is on a sliding scale, and most individuals qualify for funding or scholarships. AATA is also recognized by the GI Bill, and veterans and individuals at or below the poverty line can train free of charge.

### The Faces

While the number of jobs in the fields of science and technology are growing, the diversity of people entering these fields is stagnant, says Stewart.



**John Stewart, founder and executive director of the American Aerospace Technical Academy, wanted to encourage others to go into an industry that is both critically important and economically rewarding.**



**Jerome King overcame bouts of unemployment to become a PT inspector trainee after graduating from AATA in 2017.**



**Ricardo Romero improved his existing skillset to overcome his stalled career by adding formal training and certifications to his resume.**



**Gabi Shields, who had no prior background in science, has embarked on a new career in NDT with The Spaceship Company.**

STEM-related employment is estimated to be composed of 77.3% white, 17.2% Asian American, 3.9% black, and 4.5% Latino. Women hold less than 25% of jobs in STEM fields (PQNNT 2015). AATA aims to be the leading training organization for diversity in the US NDT industry. “Our goal is to change the face of the industry—literally,” says Stewart.

Per AATA’s website, the outreach goal of the program is to recruit 58% minority men and women. By focusing recruitment in disadvantaged communities, AATA aims to remove barriers for people to join the lucrative field of NDT, where the average annual statewide wage for Level I NDT technicians is \$64 270 and the average annual wage for Level II and Level III technicians is \$110 000+ (O\*Net Online 2018).

One of the “faces” behind these statistics is Jerome King. King is a 17-year Army veteran who has struggled with long periods of unemployment. At age 55 he was in need of a new direction that would lead to long-term career opportunities. King visited the South Bay One-Stop Business & Career Center in Inglewood in July 2017, eventually ending up in AATA’s apprenticeship program (see sidebar on page 1171), where he received hands-on training with Torrance-based partner, Hadd-Co Inspection Lab, as a PT inspector trainee.

Another face is Ricardo Romero, who visited the South Bay One-Stop Business & Career Center in September 2017. Despite his years of experience in the manufacturing sector, he was having a hard time moving up the ladder due to a lack of formal training and industry-recognized certifications. Romero was subsequently enrolled into WIOA incumbent worker programs. Through AATA, he received training in PT, RT, radiation safety, computed tomography, UT, and PAUT, and upon completion of his training, he was able to secure a new position with an 18% increase in wages.

“In order to have our industry grow in the direction it needs and with the speed it needs to, we need to think differently. We need to be more honest with ourselves about the lack of diversity in our industry and the need for outreach to different populations,” says Stewart.

According to Stewart, there is one huge potential untapped market for talent: women.

“After all, we are an industry that is 96% male,” explains Stewart. “This in itself is a problem because it is unusual for an industry to be so completely skewed toward one race/gender—and it does not reflect the general population.”

With this in mind, AATA reached another milestone in July 2018: the creation of a female-only class. The initial instructor for the class is Tonia Dabney, a US Air Force veteran and ASNT NDT Level III certified in MT, PT, RT, and UT. As of this writing, there are 18 students in attendance.

Stewart says he wanted to create a space where women could learn in a supportive environment.



**Students in AATA’s first female-only class get training on industry-standard NDT equipment in a supportive environment.**



**Digital Extras** Additional photos are available on the digital edition of *Materials Evaluation*.





In July 2018, AATA introduced its first all-female class with instructor Tonia Dabney, a US Air Force veteran and ASNT NDT Level III.

The concept has been well received. “One woman, an aircraft maintenance worker, has told me that she’s had to deal with harassment on the job and was happy to come to a safe space that was free from such concerns,” says Stewart.

Gabi Shields, a recent graduate of AATA, is another of the school’s many success stories. She first became interested in NDT when her husband, James, who is a current employee of Virgin Galactic, became interested in switching departments within company. “We started by looking up videos on YouTube and doing Google searches to widen our knowledge,” she says. “Later, I recognized the tap method that I’d seen when I was a kid watching the TV show *How It’s Made*.”

AATA came up when James asked his peers about the nearest NDT school and was referred to Stewart, who also is a former employee of The Spaceship Company/Virgin Galactic. They both found funding through the One-Stop Business & Career Center using their military status.

Shields, who just turned 28, says that learning about NDT was a challenge since she had no prior background, but she was determined to have a career. After graduating from AATA’s program, she landed a job as a quality assurance/NDT inspector using the ultrasonic method for The Spaceship Company. “My goal is to become a great inspector and help other people to find their calling. NDT was the best choice for me, and I wish I’d known sooner.”

### The Future

In 2017 AATA completed a study of 205 employers and leaders in the NDT industry. The study estimated that there are approximately 47 726 persons employed in NDT. Of these, 1670 are Level Is and 3579 are Level IIIs (3085 are ASNT NDT Level III). That leaves the overwhelming majority Level IIs.

“These numbers alone scream that we as an industry are not doing a very good job at bringing in new graduates and we are not pushing enough Level IIs to move upward to Level III,” says Stewart.

The research also shows that the industry has an average of 7000 new graduating students entering the industry from the current 100 or so educational facilities. (AATA identified over 175 programs with only 95 programs actively training new students.)

“Although the number entering seems adequate, we must also look at the current unmet market as well as the attrition rate from retirements, discharges, and voluntary exits,” says Stewart. “The current unmet market today is 3850. The annual average attrition is 8320. Add the annual new NDT openings of 1050, and you have a total unmet rate of over 13 000. Now let’s say that every new graduate was placed and that each educational facility had a 100% placement rate. This would still give us a shortage of just over 6000 annually.”

Stewart says he spends quite a bit of time thinking about how the industry can solve this critical issue. “The answer is complex because it involves asking ourselves a lot of questions about our own culture and possible shortcomings. We have to ask: How do we get more people involved in the industry? Is there a shortage because of our own culture? Could it be the low entry pay? Could it be employers’ lack of investing in new graduates?”

According to Stewart, the data shows that the NDT industry needs to increase its efforts to train, recruit, employ, and promote diversity. “If we want to fix the shortage, we need to expand our outreach to include all communities in our search for talent. Employers and educators must think outside the box when it comes to recruiting students and technicians. Just having these conversations locally and nationally will change our outlook and hopefully our

thinking in approaches to how to recruit new workers to our industry,” he says.

“The issue remains, and either we can continue to ignore it, or we can tackle it head on by starting the discussion and working together to help the industry we all admire and love.” ●

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### Apprenticeships Offer On-the-Job Learning that Benefits Both Students and Employers

In early 2016, the AATA had the opportunity to develop an apprenticeship program when the school, along with California State University Los Angeles and Los Angeles Unified School District Apprenticeship, was awarded a \$1 million grant from the California Apprenticeship Initiative (CAI), a program designed to create state-approved apprenticeship training programs in industries and occupations that have not traditionally used apprenticeship training for workforce development. Currently, AATA's apprenticeship program is the only nationally recognized NDT apprenticeship program in the United States approved by the Department of Labor.

Students who have classroom training are placed with established professionals who offer firsthand training and fieldwork. “These paid opportunities are the first step on the path to a new career in this desirable field,” says Stewart. “With a job placement rate close to 86%, many of our student interns end up with careers with the companies that help train them.” Apprentices receive a certification of completion and/or a community college completion certificate, as well as potential to receive college credit toward a bachelor's degree in engineering.

One of Stewart's future goals is to obtain more funding to expand the apprenticeship program across the United States. “Over 90% of our students graduate, and 80% of those are willing to relocate for their first job,” he says.

For more information on the apprenticeship program for both employers and students, please visit [aatatraining.org/apprenticeships](https://aatatraining.org/apprenticeships).



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John is a Senior CWI, NACE CIP Level 3, holds ASNT Level III certifications in UT, MT, PT, and VT as well as several ICC certifications among many other accomplishments in the field of inspection.

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