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THE \$140,000-A-YEAR WELDING JOB

By James R. Hagerty
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Justin Friend's parents have doctoral degrees and have worked as university lecturers and researchers. So Mr. Friend might have been expected to head for a university after graduating from high school in Bryan, Texas, five years ago.

Instead, he attended Texas State Technical College in Waco, and received a two-year degree in welding. In 2013, his first full year as a welder, his income was about \$130,000, more than triple the average annual wages for welders in the U.S. In 2014, Mr. Friend's income rose to about \$140,000.

That has allowed the 24-year-old to buy a \$53,000 Ford F-250 pickup truck, invest in mutual funds and dabble in his hobbies, such as making jet engines, including one he attached to a golf cart.

"Not everybody needs a four-year college degree," said Kathryn Vaughan, his mother, a retired biology lecturer who spent part of her career at Texas A&M University.

The risks of a mismatch between costly university degrees and job opportunities have become clearer in recent years. Anthony Carnevale, director of the Center on Education and the Workforce at Georgetown University, said nearly a third of people aged 22 through 26 with a Bachelor of Arts degree either don't have a job or are working at one that doesn't require a university degree. The numbers are similar for young people with vocational degrees, but those lower-cost degrees don't typically lead to heavy debts.

Student loan debt outstanding in the U.S. totaled \$1.13 trillion as of Sept. 30, up by \$100 billion from a year earlier, according to the Federal Reserve Bank of New York. (Mr. Friend has no debts.)

High school counselors, who once almost automatically steered smart kids toward four-year colleges, now are more aware of the job opportunities for those with technical skills, said Steve Schneider, a counselor in Sheboygan, Wis. "The battle continues to be convincing the parents," he said. "That gets easier when we start talking about money."

Demand for welders has been strong in Texas for the past few years, largely because of booming energy-related industries. Some of that demand is expected to decline in the near-term as lower oil prices reduce exploration. Meanwhile, the number of qualified welders should rise. Schools in the Texas State Technical College network had 732 students enrolled in welding programs in the fall 2014 semester, up about 70% from three years earlier. For now, the college says most of its welding students secure jobs before they graduate.

The U.S. Bureau of Labor Statistics estimates there will be 378,200 U.S. jobs for welders in 2022, up just 6% from the 2012 level. That falls below the projected 11% growth for all types of jobs. Many welding jobs in the auto industry have been eliminated over the years by robots. But welders with advanced skills and experience can do very well, as Mr. Friend has found.

When he graduated from Texas State Technical College in 2012, Mr. Friend quickly found a job at Acute Technological Services, a Houston-based unit of Oil States International Inc. Acute, which employs about 70 welders, mostly does work for the energy industry. Mr. Friend is usually dispatched to a plant that makes subsea oil-production equipment.

In 2013, Acute sent Mr. Friend to work for a month on an oil project in Ghana, where he found time to visit beaches and villages and buy a carved fish. "It was a blast," he said.

Mr. Friend, who is single, typically works 72 hours a week, usually including at least one day of the weekend, often on an overnight shift. His base pay is more than \$25 an hour, up from about \$22 when he started in 2012. He gets overtime after 40 hours a week. Pay is doubled on Sundays and tripled on holidays. He receives health insurance, a 401k retirement plan and paid vacation.

With little free time, expenses are low. He rents a one-bedroom apartment for \$1,080 a month in a building with a pool and gym. To stay in shape for mountain-climbing trips, he sometimes runs up and down steps wearing a weighted backpack.

He showed an early inclination to make things. "At three years old, he was using a screwdriver and a hacksaw skillfully," said Dr. Vaughan, his mother. Later, dyslexia made writing and math a struggle for him.

In junior high school, he took a course in welding. Within a few years, he was earning money repairing fences and doing other welding jobs for neighbors.

A documentary on World War II stirred Mr. Friend's interest in pulse jet engines, which were used by Germany to propel bombs. He and his father, Ted Friend, a professor of animal science at Texas A&M, together built such an engine. "We used a leaf blower to start it," pumping in air needed to ignite the engine, the younger Mr. Friend said. "It ran on propane." When he attached the engine to a golf cart, he said, the vehicle proved difficult to steer after reaching 30 miles an hour.

"Mom didn't like it," he said. "She thought I was going to blow myself up." One of his goals is to put a jet engine on a motorcycle, he says, adding: "I'd try to make it as safe as I could."

On a recent day, while country music played on a colleague's radio, Mr. Friend used gas tungsten arc welding techniques to attach two steel parts destined for an oil apparatus. Wearing a T-shirt and Wrangler jeans, he hunched over work requiring the precision of a jewelry maker. After welding, he buffed the part with a wire brush. Colleagues would later X-ray the part to make sure the weld was flawless.

The long hours mean "it's hard to have a life," Mr. Friend said. Eventually, he said he may pursue an advanced degree in metallurgy and research welding materials and techniques. For now, he's building up his savings.