

DEEP DIVE

# Now hiring: What autistic people need to succeed in the workplace

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*Illustration by Selman Hosgor*

Adrienne Rutledge graduated from college with a biology degree. She went on to earn a master's degree and then, in various short-lived and contract jobs, picked up programming and data processing, coveted skills in the marketplace. Still, she could not land a fulfilling full-time position. Rutledge is African American and has autism, and she had trouble making it past the interview stage.

When her contract job ended more than a year ago, she decided to boost her technical expertise and enrolled in a six-week data 'boot camp' with a nonprofit organization based in San Jose, California. She finally got a break when, in March 2019, she presented her project to an audience that included Hiren Shukla, who leads the accounting firm Ernst & Young's Neurodiversity Centers of Excellence. Shukla was so impressed with Rutledge, he immediately invited her to apply for a position in the company.

The 'interview' for the job lasted a week and was different from all others Rutledge had experienced. She did not have to answer questions about her career goals or how she deals with conflict. Instead, she parsed Excel spreadsheets for patterns and designed a system to manage orders from customers. "They really gave us an opportunity to demonstrate what we could do," she recalls.

In June, Rutledge became one of Ernst & Young's 80 neurodiverse employees, 6 of them women and 6 people of color. (About three-quarters of the neurodiverse employees have autism; the rest have other psychiatric conditions or learning disabilities.) She spends her days writing code to extract information from databases and look for patterns in data — tasks she both excels at and enjoys.

Among those with autism, Rutledge is among a lucky few. Each year, about 100,000 autistic children in the United States turn 18, but just 58 percent of them will **work for pay** at some point

before age 25, compared with 74 percent of young adults who have intellectual disability and nearly 99 percent of all high-school graduates, according to a 2015 report. “People with autism are more disconnected from employment than people with other disabilities,” though it is not clear why, says **Anne Roux**, research scientist at Drexel University in Philadelphia, Pennsylvania.

The media often trumpets job programs for people on the spectrum, but these numbers have hardly budged in the past few years. In fact, though, autistic people’s experiences at a few small companies suggest that with the right support and infrastructure, they excel at their jobs and may even outperform their neurotypical peers. Corporations such as Ernst & Young and the multinational software companies SAP and Microsoft are betting on this and investing heavily in an autistic workforce — together they employ about 300 people with autism. “People on the autism spectrum have multiple and varied skills to contribute to the workplace, and businesses can experience a strong return on investment by supporting greater diversity,” says **Dianne Malley**, who directs the Life Course Outcomes’ Transition Pathways initiative at Drexel University.

The U.S. government also offers services and support for autistic people aiming to enter the workforce. In 2014, Congress passed the Workforce Innovation and Opportunity Act, which requires that states spend 15 percent of their budget for job-training services on programs for people with disabilities. Some of the resulting programs have spun off experiments at universities that place autistic high-school students in internships. This focus on high-school students is key, experts say: 90 percent of students with autism who had worked for pay during high school held **jobs in their early 20s**, compared with only 40 percent of those who had not. “Paid employment while in high school is a strong indicator of good employment outcomes as an adult,” Malley says.

From 2009 to 2015, the number of young people with autism receiving these services across the U.S. **doubled to 18,000**, according to an analysis published last year. Still, only about half of these trainees found jobs, perhaps because the quality of services varies. Of the 51 state plans, only 10 included detailed goals and strategies to address the needs of autistic people. And most help comes to a halt after a person has held a job for 90 days, even though people with autism often need ongoing support to adjust to workplace changes or new responsibilities.

As these programs proliferate, the benefits may spill over to the economy. One 2017 analysis in Australia found that putting just 100 autistic individuals to work full-time for three years would **generate nearly 3 million Australian dollars** in tax benefits and save the country close to AU\$4 million in welfare payments and services. In the U.S., 500,000 to 1 million young people with autism are expected to reach working age over the next decade, so the potential savings from effective programs are substantial. “Engaging more people on the autism spectrum in meaningful employment can have benefits for the individual, their families, businesses and our communities,” Malley says.

## Out-of-the-box thinking:

Many reports emphasize economic and other benefits to autistic people and to society, but in fact, autistic employees often prove to be an asset to the corporations that hire them.

When David Siegal, a 33-year-old with autism, began working in SAP's Global Post-Sales Operation department four years ago, his team ran into a problem: There was no good system for dealing with internal work-order requests, which simply piled up in his department's email inbox. Siegal helped the team invent and put in place a ticket-based approach to process these requests in an orderly fashion. Neatly queued up, the requests became easy to visualize and track. "His curiosity and out-of-the-box thinking is amazing," says his manager, Pamela Chance. "It has been highly beneficial to improving our processes."

Siegal is not the only creative thinker at SAP. In the company's office in Buenos Aires, Argentina, an autistic accounts-payable analyst, Nicolas Neumann, noted another inefficiency: the need to manually enter thousands of dollar amounts into SAP's invoicing system and authorize the payments. Neumann taught himself to code and spent many nights building software to automate this process. When the team noticed he looked tired, he worked up the courage to tell them about his idea — and was given one day a week to develop it. The finished product cut the average time to process an invoice from several days to 20 minutes.

Ernst & Young's autistic employees are also often employed in technology positions because many of them seem to excel at those, says Jamell Mitchell, who oversees their recruitment. For example, he says, one group of employees with autism who had been hired for support roles learned Python, a programming language, well enough in four weeks to build a working product for a client.

"People with autism are more disconnected from employment than people with other disabilities." Anne Roux

Beyond their technical expertise, however, employees on the spectrum often require significant resources to succeed in their jobs. Some of these companies hire coaches to help autistic and neurotypical employees communicate, teaching each group how to interpret the other's words and behavior. The coaches also teach autistic team members how to advocate for things they need, cope with setbacks and accept feedback. Each autistic employee also gets a 'buddy,' a neurotypical employee who is willing to explain procedures, remind the employee of meetings and answer questions.

Without such supports, people with autism often have a much harder time at the office. **Thomas Iland**, 36, is a certified public accountant. In 2012, he found a full-time accounting job at **Tetra Tech** in Pasadena, California. He found himself having to navigate many situations that were challenging for him. One day, he explained to his manager that he asks many questions because he has autism. Iland says his manager then accused him of hiding his condition during the interview — and refused to answer any more of Iland's questions. Iland found a job coach on his own, but he says he still did not have enough support, and he left his job in early 2013.

Over the following two years, Iland worked as what he calls a “glorified receptionist” at a significantly lower salary than he had received before. He left that position in 2015 to work as a keynote speaker for the Council for Exceptional Children, a nonprofit based in Arlington, Virginia. In January, he became a life and job coach for people with autism. He enjoys his work but says he wishes he had not needed to leave accounting.

For the companies that work to support the Ilands of the world, the investment pays off — and not just because of the infusion of talent. For example, Chance says that in adjusting to communicate with Siegal and other autistic employees who interpret language literally, she learned to speak clearly and precisely. “I became a better communicator,” she says. The companies also benefit from autistic employees' loyalty: 90 percent of neurodiverse employees at Ernst & Young have stayed at the company, compared with its average of 75 percent of typical employees, for instance. SAP and Ernst & Young both plan to expand their ranks of neurodiverse hires. For the majority of autistic adults, however, the path to employment is more circuitous.

## Students provide breakfast:

Ben Lewis graduated from a California high school in June 2015 determined to pursue a college degree. Although he eased into college in September with only three classes, one of which was jazz band, he soon felt alone and overwhelmed. He left the band after only two weeks — he found interacting with the other musicians too stressful — and by October, he had withdrawn from the other two classes. “I was fearful of a lot of things,” says Lewis, who was diagnosed with autism at age 3.

Lewis decided to enroll in **Meristem**, a school and community for people with autism in Fair Oaks, California, not far from his home. Spread across a pastoral 13 acres, Meristem includes a farm where students grow produce and take care of animals, dormitories and both indoor and outdoor classrooms. The school's few dozen students take cooking classes from local chefs, pottery lessons from artisans and land stewardship courses from agriculturalists. They make herbal products such as lip balms and sell them in an onsite store and via a student-built website. They also run a bakery and a bed-and-breakfast. “This is the only bed-and-breakfast we know of that's

run entirely by students on the spectrum,” says **Edmund Knighton**, Meristem’s director. “Students provide breakfast; they cook and take care of this facility.”

The hands-on coursework is designed to build students’ self-esteem and give them experience working as a team. In their third year, students learn to live independently, taking care of their daily needs. Since the school’s launch in 2015, its student population has grown from 7 to 50. Some graduates go on to four-year colleges, and others land jobs — landscaping for the federal parks department or working in local clothing stores.

Lewis shed many of his anxieties at Meristem. He learned to speak in front of a class, something that had terrified him before. He began playing drums again in the campus music room. After he finished the program, he was hired to be the school’s farming instructor. He is once again considering college. “I don’t see reasons to leave what I do here,” he says, “but college is an open door.” Many students, including Lewis, qualify for partial tuition assistance, but Meristem’s path to independence is pricey: \$55,000 a year for commuters and \$85,000 for students who live on campus. “It’s definitely an obstacle for some,” Knighton says.

There are less expensive, if less comprehensive, options. **Daivergent** is a New York-based startup, founded by a pair of data scientists, that matches individuals’ skills to companies’ projects. One of the company’s clients was trying to develop an artificial-intelligence algorithm that recognizes a license plate on a car. To do this, the program had to scan millions of pictures of those plates, which needed to be identified as such. So, as a first step, someone had to draw a box around the license plate in every image. Most people find this task daunting, but some individuals on the spectrum aced the job. Daivergent has 20 corporate clients — one of which is SAP — and an employee pool of 1,200.

The autistic people who sign up for Daivergent’s services take an assessment to identify their strengths and preferred type of work, such as testing software, entering data or designing video games. They also can hone their skills by taking video-based classes such as programming and marketing. The company’s setup allows employees to set their own hours and work at their own pace — ideal for autistic people who need flexibility. “Most of these jobs can be done remotely,” says one of the co-founders, **Byran Dai**, a data scientist whose younger brother is on the spectrum.

Daivergent’s eight-person team also includes an autistic person, Leon Campbell, who has a computer science degree from Hunter College in New York City. As a student, Campbell worried about being unable to handle the pressures of a full-time job after graduation. He joined Daivergent in 2018 as an intern while finishing his degree, and he worked on projects involving data processing and software testing. After he graduated, Daivergent hired him. He began as a half-time employee, and later became full time. These days, Campbell trains job candidates, reviews their work before it is sent to clients and is the main point of contact for customer questions and feedback. Instead of feeling overwhelmed, he says, he likes the structure — or, as he puts it, “the

fact that I have something to do for seven hours of my day rather than staying at home.”

Another organization, the Florida-based **Dan Marino Foundation**, picks up other pieces of the employment puzzle for people on the spectrum. Its latest offering is a **virtual-reality version** of its interview software. To use the program, called Magically, autistic people don 3D goggles and ‘enter’ an office where they confront one avatar after another, each of which peppers them with tough questions about their qualifications. With the goggles in tow, applicants can rehearse their technique whenever and wherever they would like. “If I am [an autistic person] having an interview in two hours, I can have a couple of sessions to practice,” says **Santiago Bolivar**, the foundation’s creative director.

## In demand:

Several universities have developed pilot programs that prepare students with autism for the workforce and serve as models for larger initiatives. In 2017, researchers at Virginia Commonwealth University in Richmond recruited 81 autistic students with intellectual disability in their last year of high school to work in jobs at four hospitals — stocking supplies, sterilizing instruments, scanning documents and even cleaning. With few marketable skills, these young people needed a bridge to employment. A teacher and a teaching assistant from the school district taught the students how to do their jobs as well and how to communicate with others about their tasks. A job coach showed them how to interact professionally with their supervisors and coworkers, and how to accept feedback without getting upset.

A year later, more than 70 percent of the students were working about 20 hours a week, earning more than minimum wage, on average. By comparison, only 17 percent of a control group of autistic high-school graduates had a job. The results confirmed those of a similar, but smaller, pilot study that began in 2009. “The outcomes were terrific,” says study investigator **Paul Wehman**, professor of physical medicine and rehabilitation at the university.

The students with autism performed well at tasks many neurotypical people would find taxing. One employee checked medications for expiration dates in a fraction of the typical time. Another excelled at stocking supplies because he had a photographic memory. “My eyes would be strained from looking at the numbers,” says **Jennifer McDonough**, who directed the job coaches. But this employee, she recalls, “knew where supplies went just from a quick scan of the room.” The autistic employees all proved so valuable that soon other hospitals wanted them, too. “We had hospitals arguing over who was going to participate,” McDonough says.

“The majority of autistic people, with the right supports and high expectations, can work like the rest of the population.” Dianne Malley

Researchers at Drexel University in Philadelphia took a similar approach to helping autistic young people find jobs. They provided internships to eight local autistic high-school students who have intellectual disability. The students learned to take public transportation to the campus, where they learned skills such as data entry or filling web orders at a bookstore. For four of the students, these internships led to full-time jobs. These students went on to work in similar capacities at the Philadelphia airport, and all are still employed three years later. More than a dozen autistic students without intellectual disability who trained in a separate Drexel program landed paid internships at the Penn Museum, according to Malley. Another 8 students are in training, and Malley expects to expand the program to 15 students next year.

Some states support or try to reproduce components of these experiments. The Penn Museum internships were funded through the state of Pennsylvania. And the state of Virginia pays for behavioral specialists to support adults with autism who are seeking employment so that these individuals have help troubleshooting problems once they get a job. “This has proven very beneficial, in our experience,” McDonough says. Other states **train on-the-job counselors** to work specifically with people who have autism as opposed to other disabilities.

But to make a significant dent in the unemployment rate for people with autism, states need to establish large collaborative programs involving schools, vocational rehabilitation services, counselors and local businesses, Malley says. And business owners need to be educated on why it is cost-efficient to hire people with autism. (One reason: Autistic people often hold entry-level retail positions for longer than neurotypical people do, providing a stable set of employees in those jobs.)

Along with this practical progress, society needs to raise its expectations for individuals on the spectrum. “What we’ve done for years was to say, ‘Yes, of course they need a job; a job is so valuable to people.’ So we’d employ them two hours on Tuesday and two hours on Thursday,” Malley says. For some, this may be the limit, but for others, that bar is too low, she says: “The majority of [autistic] people, with the right supports and high expectations, can work like the rest of the population.”

In some cases, they can do so with astounding success. A few months ago, Rutledge and her team were tasked with rebuilding a computer system that their managers use to keep track of projects. The rebuild would typically take a month or more, Rutledge says, but this upgrade had to be done in just a few days. “We sequestered ourselves in a conference room and worked nonstop,” she says. The team not only made the deadline but did so without interrupting access to the system. Rutledge credits the achievement to “really smart,” collaborative colleagues who are similar to her:

“That’s what I found here.”