

PLUGGING IN

PROFILES FROM NYC'S ADULT TECH SKILLS-BUILDING ECOSYSTEM



ADULT PROGRAM PROFILES

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Pursuit

Pursuit is a software developer fellowship program with a deferred tuition model and curriculum structured to include both 1 year of intensive technical training and 3 years of career advancement assistance.

Who is served: Pursuit's cohorts are 50% women, 70% Black or Latinx, 40% immigrant, 60% non-Bachelor's degree holders, and more than 50% public assistance recipients.

Number of participants served annually: 142

Location: Long Island City, Queens

Frequency/Duration: 40 hours per week during the year-long software developer training program, followed by a 36 month career advancement phase. Classes are held both during the day and on nights and weekends.

Eligibility Criteria: Must be 18 years or older and make less than \$45,000

Application process: Online application, interview, problem-solving session, and two-day sample coding workshop

Curriculum: Full-stack web and iOS development

Skill level: Advanced

Outcomes: On average, Pursuit Fellows go from making \$18,000 before they start Pursuit's training program to \$85,000 once they complete the program and secure high-paying jobs in technology. Approximately 25% of participants make more than \$100,000.

Partnerships: Grubhub, JP Morgan Chase, Uber, Blue Apron, LinkedIn

Cost: No cost upfront. Training costs are covered by investors in the Pursuit Bond, which fellows repay as a percentage of future income once they get high-paying jobs.

Sources of funding: Pursuit Bond and philanthropic funding

What makes this program stand out? The Pursuit Fellowship offers an intensive 2-phase, 4-year tech

training opportunity designed to help build careers that create "permanent change" for "high need, high potential" adults. Fellows take courses in Long Island City where they spend the first 12 months gaining technical mastery before moving into the 36-month long career support phase focused on getting students their first software engineering job. Pursuit emphasizes "industry fluency," exposing students to subjects such as machine learning and artificial intelligence. Experts are often brought in to speak, providing fellows with an opportunity to explore innovative technical fields outside of coding.

What do participants need to succeed? No prior coding experience or knowledge is required, but the program requires a major, year-long time commitment. Admitted students must be available to participate in all scheduled program classes, workshops, and events for the full duration of the program. A demanding time commitment means that some students could benefit from additional cost-of-living supports.

What does the organization need? Additional financing to scale their services to more New York City residents and beyond.

Per Scholas

Per Scholas programs train local talent from overlooked communities for well-paying jobs in IT, cyber security, and systems administration at no cost to participants.

Who is served: Adults from overlooked communities

Number of participants served annually: 800

Location: Brooklyn, the Bronx

Frequency/Duration: Monday to Friday, from 9 a.m to 4 or 5 p.m for 12–19 weeks

Eligibility Criteria: Prospective participants may qualify if they are unemployed, underemployed, or receive public benefits. Participants must be over 18 with a high school diploma or equivalent and authorization to work. They also must have English proficiency and pass a basic academic assessment.

Application process: Online application, in-person interview

Curriculum: Courses in IT support, cyber security, systems administration, application development, and data engineering

Skill level: Mid-level

Outcomes: Provides training and industry-standard certification to prepare participants for the following entry-level positions:

Cloud Support technician: CompTIA Linux+ and AWS Associate Level Certification

IT support technician: CompTIA A+ and Network+ certifications, AWS Solutions Architect certification.

Cybersecurity analyst: Cisco CCNA Cyber Ops Certification

Application developer: Java proficiency

Partnerships: Barclays, The Door (TechBridge), Amazon Web Services, Cognizant

Cost: Free

Sources of funding: City council discretionary funding, corporate partners (e.g. Barclays, Cognizant) and additional foundation support. Youth Career Pathways and high school partnerships are funded through the JP Morgan Chase New Skills for Youth initiative.

What makes the program stand out? Per Scholas provides tuition-free training for adults from often-overlooked communities in IT, cyber security, systems administration, app development, and data engineering. Each pathway incorporates both technical skills training that result in industry-recognized certifications and a career development program that equips students with a job search toolkit, time management skills, and interview preparation. The Per Scholas curriculum is employer-driven, and graduates are matched with employers.

Per Scholas is one of the few training programs that work closely with other nonprofit organizations to build out tech-focused bridge programs. Their first partnership with youth development agency The Door, TechBridge, blends a free, 5-week bridge curriculum with Per Scholas's core programming. Per Scholas has launched a new bridge program in partnership with the Lower East Side Employment Network (LESEN). Per Scholas is also establishing high school partnerships in the Bronx to expose young people to careers in tech through in-school curriculum.

What do participants need to succeed? Participants need to demonstrate a sincere interest in technology and pursuing a tech career. They also must be able to attend classes full-time for the entire duration of the course. Per Scholas supports students throughout the program with case managers and financial coaches. Students are also provided referrals to wraparound services, such as childcare, to help manage their coursework and responsibilities.

What does the organization need? A sustainable source of funding support that allows for flexibility in program design and execution.

Opportunities for a Better Tomorrow: TechSTART

OBT's TechSTART program prepares out-of-school youth with no prior technical experience for careers in cloud support engineering.

Who is served: Out-of-school youth ages 17–24

Number of participants served annually: 66

Location: Industry City, Sunset Park, Brooklyn

Frequency/Duration: Monday to Friday 9 a.m.–5 p.m., 12 weeks

Eligibility Criteria: Must be a 17- to 24-year-old New York City resident with authorization to work in the U.S., high school diploma or equivalent (TASC or GED), and a basic level of computer skills. Applicants must also be able to commit to full-time training, as well as transitioning into full-time employment upon completion of the program. Food stamp recipients are encouraged to apply.

Application process: Online application, in-person interviews, and assessment tasks

Curriculum: Cloud support engineering

Skill level: Intro

Outcomes: Freelance consultant work, advanced coding education, job placement assistance

Partnerships: OBT's TechSTART program is presented in partnership with Generation, a global youth workforce organization. OBT also partners with employers, including tech companies and tech-adjacent companies in retail, hospitality, and healthcare looking for individuals with a more advanced technical skill set. Nonprofit partnerships include joint training programs and referrals for continued career pathways, including Green-Wood Cemetery; Brooklyn Workforce Innovations; Southwest Brooklyn Industrial Development Corporation; SCO - Center for Family Life. OBT also partners with 3 transfer schools through a pilot program with New Visions for Public Schools and JobsFirst NYC, and dozens of schools for referral and outreach.

Cost: Free; pays a daily stipend for transportation and lunch

Sources of funding: About 70 percent from government contracts and 30 percent from foundations, corporations, and individual giving.

What makes this program stand out? TechSTART offers 12-week immersive training for out-of-school youth with limited work experience and a basic level of computer skills. Upon completion of the program, participants receive assistance with job placement including the opportunity to interview for full-time employment with one of OBT's partner employers. Participants acquire foundational skills that can lead to employment or advanced tech training. The curriculum was previously focused on web development but now focuses on cloud support engineering.

Students are also eligible to participate in an internship program to apply and practice their technology skills. Students are paired with Industry City tenants, where OBT is located, and businesses to assist in cloud computing and advanced IT support.

What do participants need to succeed? Participants must be committed to full-time employment and passionate about tech, but unlike Per Scholas and Pursuit, for instance, TechSTART does not require participants to pass a basic academic assessment. It's considered a "bridge program," as it provides tutoring for students whose math and reading skills are not strong enough to keep up with the curriculum.

What does the organization need? Employers interested in hiring our participants for cloud computing or advanced IT roles. Employers can also support the program by providing internships, guest speakers, and coordinating site visits to further expose participants to the tech sector.

NPower

NPower helps military veterans and young adults from underserved communities launch digital careers through their 23-week Tech Fundamentals course, 26-week cybersecurity course, and 12-week cloud computing course.

Who is served: Military veterans and young adults from underserved communities

Number of participants served annually: 256

Location: Fort Greene and Dumbo, Brooklyn; East Harlem, Manhattan

Frequency/Duration: IT (Tech Fundamentals): Monday–Friday, 9 a.m.–1 p.m. or 2–6 p.m., 23 weeks
Cybersecurity: Monday–Friday, 9 a.m.–4 p.m., 26 weeks
Cloud Computing: 12-week hybrid training (14 hours a week online; in-class instruction on Monday, Wednesday, and Friday, 6–8 p.m.)

Eligibility Criteria: To qualify for Tech Fundamentals, applicants must be: 18–25 years old with a high school diploma or equivalent; or an active-duty member of the armed services, military veteran, or spouse over 21. Students must be eligible to work in the United States. Advanced training in cybersecurity and cloud computing is available to qualified NPower alumni. In New York, NPower only runs a young adult cohort for Tech Fundamentals.

Application process: Online application followed by an interview assessing a candidate’s commitment to the program and interest in technology

Curriculum: IT, cybersecurity, cloud computing

Skill level: Entry-level, mid-level

Outcomes: Tech Fundamentals: CompTIA IT Fundamentals or A+ certification; Cybersecurity: CompTIA Security+ certification; Cloud Computing: AWS Cloud Practitioner or Solutions Architect certification. Job placement assistance

Partnerships: Local schools and nonprofits for recruitment of students, social support agencies who provide wraparound services for students such as professional attire and financial planning support, employers for internships and job placements. Tech partners include AWS, Symantec, and Cisco Systems.

Cost: Free, paid internship

Sources of funding: Supported by foundations and corporate partners such as Citi, Cisco, and Symantec, charge for-profit companies to bring on their interns

What makes this program stand out? NPower’s tech and professional skills program provides free training to military veterans and young adults from underserved communities. In addition to the Tech Fundamentals program, NPower offers cybersecurity and cloud computing courses in their New York City location which culminate in an opportunity to earn certifications in CompTIA Security+, and Cloud Practitioner or AWS Solutions Architect certification, respectively. The advanced training and certifications allow the student to upskill and earn stackable credentials.

What do participants need to succeed? There’s no testing required to participate in NPower and the program doesn’t screen applicants out based on their reading levels. Applicants are assessed through an interview process that is based on social and emotional capacity. Once enrolled, students can participate in morning or afternoon training, depending on the program.

The half-day programs allow space for students to maintain a part-time job until their paid internships begin 7 weeks before graduation. “We want people who have a desire to change the trajectory of their lives,” says Kim Mitchell, Vice President, Program Development and Operations. “To have another chance to pursue an opportunity that doesn’t cost them any money but will yield them a middle-skill, solid paying job that will address both their social and economic mobility.”

What does the organization need? The organization faces challenges associated with the costs and physical space needed to run the program.

The Knowledge House

The Knowledge House is a nonprofit program dedicated to training and mentoring students from low-income communities to build a successful career in the tech industry.

Who is served: Young adults

Number of participants served annually: 380

Location: Multiple locations in the Bronx, Harlem, and Washington Heights

Frequency/Duration: 3–12 months. Evening and weekend courses available

Eligibility Criteria: Must be a New York City resident 16–30 years old who makes less than \$50,000

Application process: Attend info session, online application

Curriculum: Web development, Digital skills training

Skill level: Intro

Outcomes: Bridge employment, internship, part time jobs, freelance opportunities

Partnerships: Tech Talent Pipeline, Bronx CUNY, Workforce1 Career Center, FWD.us, Petrie Foundation, JobsFirstNYC, Kapor Center, New York Community Trust, Siegel Family Foundation, REDE, Arbor Brothers, The Carroll and Milton Petrie Foundation

Cost: Free

Sources of funding: Tech Talent Pipeline; corporate and philanthropic partners

What makes this program stand out? The Knowledge House—one of the few tech training programs located in the Bronx—was founded in 2014 with a mission to create a sustainable tech talent pipeline for high school students and young adults. “A lot of tech training providers either live in the K–12 space or they live in the workforce space. We straddle both fields,” says co-founder Jerelyn Rodriguez. “The way we intend to sustain the pipeline is to serve students from high school until they get their first job in tech.”

Students participate in a 3- to 12-month program focused on software development skills. Rodriguez says they chose to build a program around software development to fill the gaps in the availability of nonprofit-run hard tech skills programs. The Knowledge House focuses on building stackable credentials that include project management skills and business software (i.e. Slack, Google Drive). It has also started offering a data science course that provides a foundation in Python.

Recently, Rodriguez launched the Bronx Digital Pipeline (BxDP) in partnership with all 3 Bronx-based CUNY schools. BxDP connects out-of-school young adults to training customized to employer needs, leading to entry-level tech jobs. BxDP operates as a referral system for Bronx residents receiving tech training.

What do participants need to succeed? Students must learn Javascript in addition to other programming languages to succeed as a developer in the tech industry today, Rodriguez said.

What does the organization need? Stronger and clearer relationship with tech companies to scale the program. The organization notes that while corporate groups often volunteer or donate to their program, the Knowledge House lacks meaningful engagement that results in companies hiring students from the program.

Coop

Coop connects CUNY graduates to the world of digital media advertising through their free digital marketing and data analytics training courses.

Who is served: CUNY graduates

Number of participants served annually: 173 participants in 2018

Location: Manhattan

Frequency/Duration: Monday–Friday, 9 a.m.–4 p.m., 12 weeks

Eligibility Criteria: Must be a New York City resident between 16–30 years old, hold with a CUNY bachelor’s degree who is unemployed or underemployed (making less than \$45,000 a year) and a first-generation college grad, financial aid recipient, and/or underrepresented minority.

Application process: Online application

Curriculum: Digital marketing, data analytics

Skill level: Entry-level

Outcomes: 80 percent of alumni begin full-time positions with 1 year. They also receive certifications in Google Ads, Google Analytics, and Facebook Blueprint.

Partnerships: Microsoft and Google

Cost: Free, pays a daily stipend for transportation and lunch

Sources of funding: Foundations (29 percent), corporations (36 percent), and individual giving (35 percent)

What makes this program stand out? COOP was built to help CUNY graduates overcome underemployment and launch careers through digital marketing and data analytics training. The program focuses on tech careers outside of software engineering because “the barrier to entry is lower” and opens students up to the world of digital media advertising.

COOP’s digital marketing and data analytics training

courses are broken down into “head,” “heart,” and “hustle.” Students go through a total of 200 hours of training: 100 hours focused on hard skills (head), 50 hours focused on developing your personal narrative (heart), and 50 hours dedicated to the job search (hustle).

What do participants need to succeed? Participants need support from peers, which is why the program is built around a network of alumni who not only help foster career connections, but also often return to the program to guide cohorts through the 200-hour training. Dedicated alumni are 1 reason the program is able to offer training at no cost to participants.

What does the organization need? More support recruiting CUNY students

Institute for Career Development's IT Academy

The Institute for Career Development is a nonprofit organization offering a first-of-its-kind IT training program that specifically serves people with disabilities.

Who is served: Adults with disabilities

Number of participants served annually: 16

Location: Manhattan

Frequency/Duration: Monday–Friday, 5 hours each day for 7 months

Eligibility Criteria: Must be an unemployed or underemployed New York State resident with a documented disability, work authorization, a high diploma or equivalency, and the ability to enroll in Adult Career and Continuing Education Services-Vocational Rehabilitation (ACCES-VR). Also must be able to demonstrate a 10th grade level in reading comprehension and math.

Application process: Online application, plus resume and either a cover letter or a 3–5 minute video about yourself. Select applicants then return for pre-assessment tests, including the Test of Adult Basic Education (TABE), Career Ability Placement Survey (CAPS), and a typing test.

Curriculum: IT

Skill level: Entry-level

Outcomes: Cisco certifications in Networking and Cyber Security, paid internship, job placement

Partnerships: Mayor's Office for People with Disabilities' NYC: ATWORK, ACCES-VR, Mayor's Fund to Advance New York City

Cost: Free

Sources of funding: ACCES-VR, Veterans Program funded through VA and private donations

What makes this program stand out? The IT Academy at the Institute for Career Development (ICD) is the first IT training program that specifically serves people with disabilities. "The first cohort took 7

months to get through the curriculum," said Diosdado Gica, Chief Operating Officer of ICD. "But we don't see their disabilities as a challenge, we see their disabilities as a strength."

The IT Academy graduated all of its students enrolled in the first cohort in 2019, and their second cohort is underway. The team at ICD worked with industry partners to design a tech training that aligns with industry needs and ensures program participants are receiving the training necessary to advance into well-paying tech-oriented careers. The IT Academy is built on 4 key components: a fully accessible academy with cutting-edge assistive technology, work readiness, paid internships, and Cisco certification.

While the technical component is essential, ICD emphasizes that work readiness is equally important. Each participant is eligible for a 3-month internship paid for by the employer. Job readiness and acclimation to the work environment are crucial to training, Gica says. Upon completion of the program, ICD follows students for a minimum 90 days through job placement, helping them with transportation to interviews and even assisting with on-boarding.

What do participants need to succeed? Participants must be able to commit to the 6-month training without missing a class, along with the 3-month paid internship (approximately 25 hours per week).

What does the organization need? Additional employer partners willing to mentor students and provide paid internships. Gica also cites a need for professional development training programs to ensure instructors have pedagogical competency and the ability to create lesson plans that teach to different modalities of learning.

MotherCoders

MotherCoders offers tech training to mothers looking to re-enter the workforce, emphasizing the specific challenges faced by women in the tech industry.

Who is served: Mothers

Number of participants served annually: 24 (first cohort graduated April 2019)

Location: Manhattan

Frequency/Duration: Tuesday and Thursday 10 a.m.–1 p.m., Saturday 10 a.m.–4 p.m., 9 weeks

Eligibility Criteria: Must reside in New York City, identify as a woman, be the legal guardian of at least 1 child under 17 years old, hold a bachelor's degree, and have at least 2 years of work experience

Application process: Online application

Curriculum: Coding, user experience design, and analytics

Skill level: Intro

Partnerships: Google

Cost: \$4000, \$4500 including onsite childcare

Sources of funding: Tuition, individual donations, corporate sponsorships, grants, ticket sales from events, branded merchandise sales

What makes this program stand out? MotherCoders amplifies the skill sets of moms who have degrees by offering training that connects participants to a career path where they can leverage their past work experiences. For the New York City pilot, MotherCoders selected moms from a variety of professional backgrounds including publishing, advertising, project management, and marketing.

What do participants need to succeed? Mothercoders acknowledges and seeks to eliminate the barriers which might prevent moms from participating in intensive tech training by providing on-site childcare.

What does the organization need? More funding to bring down the cost of the program to participants. “Funding this program is not cheap, partly because we have the childcare component,” said Lee.

General Assembly

General Assembly attempts to confront the tech and business skills gap through educating individuals and teams in short and long courses focused around on data, engineering, design, business, product management, and more.

Who is served: Adult learners

Number of participants served annually: 12,000

Location: Manhattan

Frequency/Duration: Immersive and accelerated programs meet Monday–Friday from 9 a.m. to 5 p.m. Part-time courses are often in the evenings, or on weekends. General Assembly also offers short-form classes and workshops, ranging from 1 hour to 2 days, as well as free events for career exploration, networking, and community-building. Programs range from 1 hour to 24 weeks.

Application process: Online application. Applicants for full-time Immersives complete admissions assessments to ensure they are prepared for the rigor of the curriculum. Admissions representatives help prospective participants determine if a course is the best fit.

Curriculum:

Full time: Software engineering, data science, and user experience design. Part time: Python programming, UX Design, Data Analytics, Digital Marketing, Data Science, Product Management, Visual Design, Front-End Development, Java-Script Development, React Development

Skill level: Entry-level, mid-level, advanced

Outcomes: Entry-level jobs, upskilling and re-skilling, career transitions

Partnerships: Employers partner with GA through on-site upskilling and reskilling programs. They have also implemented diversity and impact programs with companies. GA has also run programs in partnership with the New York City Tech Talent Pipeline and nonprofit organizations such as Hack the Hood, IBM P-Tech, LaGuardia Community College, The Last Mile, New York on Tech, the U.S. Department of Labor, Vets in Tech, and more.

Cost: Costs range from \$200 for a 1-day bootcamp in digital marketing to \$16,000 for a full-time data science immersive course. GA offers a \$0 upfront tuition model, loan financing, and installment plans for several courses, in addition to full upfront payment. Scholarships are available.

Sources of funding: Tuition

What makes this program stand out? General Assembly describes itself as “the future of work.” It is one of the largest tech bootcamps in New York City, and is known especially for its full-time immersive courses in software engineering. But it also offers a wide variety of courses with varying time commitments, and works extensively with employers on upskilling. GA constantly adapts its course design and overall offering to reflect the most in-demand skill sets. GA provides full time, immersive training in software engineering, data science, and user experience design, while part-time course offerings teach variety of programming languages such as HTML, CSS, JavaScript, Python, and React, as well as product management, visual design, data analytics, digital marketing, and data science.

General Assembly also operates programs in partnership with community-based organizations, nonprofits, and community colleges and offers the See Her Excel Scholarship to women pursuing software engineering.

What do participants need to succeed? Demands vary depending on the program. Some immersives require a full-time, multi-week commitment, while part-time courses are designed for nights and weekends, or 1 week of full-time classes. Given the significant costs and time commitment for some of GA’s programs, even with scholarships and merit-based loans, low-income participants can face nontuition barriers.

What does the organization need? Strong relationships with employers to ensure companies are thinking about student skills and competencies in lieu of traditional credentials.

TechBridge—The Door

Offered in partnership with Per Scholas, TechBridge is dedicated to bridging the gap into well-paying jobs in tech for students who qualify for math and English tutoring, providing literacy and math support for young adults who have an interest in tech training.

Who is served: Young adults who are passionate about technology and ready to begin a career in IT but score below the minimum on Per Scholas' entrance exam, the TABE

Number of participants served annually: approximately 80 participants (10–12 per 6–8 week cycle)

Location: The Bronx Youth Center, South Bronx

Eligibility: Must be 18–24 years old, qualify for math and English tutoring, and have an interest in tech training

Frequency/Duration: 5 weeks with The Door, followed by 15 weeks, Monday–Friday from 9 p.m. to 4 p.m. with Per Scholas

Application Process: Written application, TABE testing, and an interview

Curriculum: IT

Skill level: Entry-level

Outcomes: A+ and Network+ certification, entry level roles as computer analyst, tech support, and troubleshooting. The Door tracks outcomes such as quarterly job retention.

Partnerships: Per Scholas, Young Adult Sectoral Employment Project (YASEP) of JobsFirstNYC

Cost: Free, \$625 stipend and MetroCard

Sources of funding: DYCD (Department of Youth and Community Development)

What makes this program stand out? TechBridge is a bridge programs dedicated to providing support for young adults who have an interest in tech training but do not have the baseline proficiency in math and literacy they need to qualify for the next step. Offered in partnership with Per Scholas, TechBridge

admits students into a 5-week program focused on the foundational math and English skills that are needed to succeed in Per Scholas's intensive IT courses.

TechBridge graduates go on to directly enroll in Per Scholas' IT Support program and earn their A+ and Network+ certifications through the subsequent 15-week program. During their training at Per Scholas students return to The Door once a week to receive academic tutoring. Both organizations are involved in every step of the process, from admission to post-graduation support.

The Door and Per Scholas are currently expanding the TechBridge program to several New York City-based organizations, including Chinatown Manpower Project.

What do participants need to succeed? Students are given a \$625 stipend to support their participation in the first 5-week program. The subsequent 15-week program at Per Scholas will be tuition-free, but participants receive no additional financial assistance. Per Scholas helps participants navigate childcare options and other non-tuition issues, but childcare, transportation, and food security can present financial barriers while students are enrolled full-time in the course.

What does the organization need? The organization is in need of more unrestricted funding. TechBridge has open slots in its program, and so could benefit from greater awareness and marketing capacity to reach qualified applicants.

TechConnect—New York Public Library

One of the largest tech training programs operating in New York City, TechConnect serves over 100,000 residents each year offering basic digital literacy courses including classes that teach computer basics and introductory website building at nearly all public library locations.

Who is served: Adults

Number of participants served annually: 118,000

Location: Manhattan, Staten Island, Bronx

Frequency/Duration: Varies

Eligibility Criteria: n/a

Application process: n/a

Curriculum: digital literacy

Skill level: Basic, intro

Outcomes: Training in digital literacy gives participants the baseline skills they need to pursue more advanced coding education, or to qualify for many jobs that require the ability to use a computer and office suite software, or navigate the internet and understand HTML.

Partnerships: Google, Anchor, CodeAcademy, Pursuit

Cost: Free

Sources of funding: TechConnect is funded in part by Bank of America and Wiley. It also receives support from several other corporate and private philanthropies, as well as NYC Connected Communities, a program of the New York City Department of Information Technology and Telecommunications.

What makes this program stand out? The New York Public Library (NYPL)'s TechConnect program is the largest tech training programs operating in New York City. TechConnect serves over 100,000 NYC residents each year through over 80 digital literacy courses which are offered at nearly all branch library locations in the Bronx, Manhattan, and Staten Island. The courses prepare students for the digital world, and include classes in computer basics, Microsoft Office programs, social media, and how to build a website. TechConnect is special for offering tech training in languages other than English, including Mandarin Chinese and Spanish.

Beyond digital literacy classes, TechConnect provides space for students to explore innovative technology and creative editing tools. It also offers one-on-one help via Open Labs. NYPL has plans to add virtual reality courses in addition to a slew of production and digital media classes.

What do participants need to succeed? Participants pay no tuition, and do not need to commit to rigorous attendance. This gives participants the opportunity to take a variety of courses that pique their interest. It also allows working participants to maintain regular work schedules while attending.

What does the organization need? Funding to hire more people to expand offerings and outreach.



Project <code>—New York Public Library

A special initiative with the NYPL TechConnect program, Project <code> offers a free introductory computer programming classes to library patrons in 2 distinct phases.

Who is served: Adult learners

Number of participants served annually: 1000

Location: 58th Street Library and Columbus Library in Manhattan; The Bronx Library Center in the Bronx

Frequency/Duration: 2 two-hour sessions for 12 weeks. Day and evening classes are available but vary by branch location.

Eligibility Criteria: n/a

Application process: n/a

Curriculum: HTML and CSS, Javascript, jQuery, and Bootstrap

Skill level: Intro

Outcomes: Acquire the base programming knowledge needed to build a website, and if interested, enroll in advanced coding bootcamps. Provides participants with upskilling that has enabled some to gain promotions.

Partnerships: Grow with Google, FreeCode Camp

Cost: Free

Sources of funding: Private donors

What makes this program stand out? Project <code> is a free, series-based introduction to computer programming offered through the New York Public Library's TechConnect program. While most TechConnect offerings are individual classes, Project <code> serves as a more in-depth course for those looking to explore new skills that could lead to a career change. The program is an entry point for students before deciding to take a deeper dive into more technical software engineering classes.

Project <code> has 2 phases. Phase I is a 10-week course designed to get students familiar and comfortable with

programming languages. The course culminates in a project where students build out the basic structure of a website using HTML and CSS. Phase II builds upon what students learn in Phase I with additional training on how to develop responsive and mobile friendly websites.

After graduating from the program, "We've seen people who have gotten promotions in their jobs," said Brandy McNeill, Associate Director of Tech Education and Training. "After they've got these kinds of web development skills, former students have been asked to take on more tasks and as such has led them to get promoted."

What do participants need to succeed? No prior coding experience required, but participants should plan to fully attend the 12-week program.

What does the organization need? One of the biggest misconceptions is that the organization only operates online and doesn't need people to instruct the classes. TechConnect needs additional funding to hire more people to increase their capacity to offer training.

Flatiron School

A coding bootcamp pioneer, Flatiron School is known for its market-aligned curricula and personal career coaches that prepare participants for careers in software engineering, data science, and UX/UI design.

Who is served: Adults looking to launch a tech career

Number of participants served annually: 274 students in 2017

Location: Manhattan

Frequency/Duration: Monday–Friday, 9 a.m.–6 p.m., 15–24 weeks

Eligibility Criteria: Passion for learning about technology and desire to launch a new career

Application process: Online application, admissions interview, technical review, pre-work

Curriculum: Software Engineering: HTML5 & CSS, JavaScript, React, Ruby, and Rails (15 weeks). Data Science: Python, Object Oriented Programming, JSON, Web Scraping (15 weeks). UX/UI design: User-Centered Design, Design Thinking, Design Principles (24 weeks)

Skill level: Mid-level, advanced

Outcomes: Of 2017 participants, 95% (260) graduated. Of the participants who completed a job-search cycle upon graduating, 31% accepted a job within 30 days, 55% within 60, 91% within 180, and 97% within a year. Average starting salary for a full-time salaried role was \$73,806.

Partnerships: WeWork, Access Labs, Designation

Cost: \$17,000. Flatiron offers financing options and deferred tuition through income sharing agreements.

Sources of funding: Tuition

What makes this program stand out? Flatiron School is a 15-week software engineering bootcamp that offers a combination of full-time courses in-person and online. It is specifically designed for adult learners looking to transition to a career in tech. Last year, the school launched Access Labs Initiatives for

New York City residents making less than \$35,000 to increase access to tech training. In New York City, Flatiron offers software engineering, data science, and UX/UI design training. Founded in 2012, Flatiron is one of the earliest accelerated programming courses and pioneered the tech bootcamp model. Flatiron was acquired by WeWork in 2017, and now operates out of WeWork locations throughout the world.

On the software engineering track, students are trained in both front-end and back-end web development to become full-stack engineers. Students also learn about product management, computer science fundamentals, and receive technical interview training. Data science course teaches both programming languages specific to data science and “statistical understanding.” Students also learn how to use algorithms to draw insights from data, big data, and machine learning APIs.

The UX/UI design track is a hybrid course that allows students to study independently through online coursework for the first half of the class. The curriculum—created by Designation, a design education program—focuses on the fundamentals of user-centered design, design thinking, design principles, prototyping, and frameworks among other presentation and portfolio skills.

What do participants need to succeed? The Flatiron program is designed for individuals seeking a full career transformation, and so it requires a major time commitment and investment. Flatiron has introduced an income share agreement to break down the significant upfront cost, and it also provides a tuition-back guarantee for those unable to land a job in 6 months.

What does the organization need? The organization has a big focus on hiring teachers and finding people who are both educators and have the technical prowess to facilitate training.

Access Labs Initiative, Flatiron School

The Access Labs Initiative is designed to bring the coding bootcamp experience to New Yorkers earning less than \$35,000 a year.

Who is served: Low-income adults

Number of participants served annually:
Approximately 200 enrolled students in 2018

Location: DUMBO, Brooklyn

Frequency/Duration: Monday–Friday, 9 a.m.–6 p.m.,
15 weeks

Eligibility Criteria: Applicants must be 21 or older at the start of the program, earn less than \$35,000 per year, hold a high school degree or equivalent, and be legally authorized to work.

Application process: Applicants submit a written personal statement and complete both an admission interview and technical review

Curriculum: Curriculum follows Flatiron School's software engineering immersive: HTML5 and CSS, JavaScript, React, Ruby, and Rails.

Skill level: Advanced

Outcomes: Careers in software engineering

Partnerships: WeWork, Flatiron School, 2U

Cost: \$0 upfront. Upon securing a job in tech, graduates pay a percentage of income in monthly installments until tuition is covered.

Sources of funding: Flatiron School, Tuition

What makes this program stand out? Access Labs is a Flatiron School initiative geared towards removing barriers to accessing intensive, bootcamp-style tech training for low income New Yorkers.

The program launched in April 2018 and operates out of the WeWork Dumbo space. Access Labs is committed to creating an equitable tech ecosystem and equipping students with the soft skills they need to succeed in their tech careers.

To prepare admitted students for the rigor of the full-time, on-campus immersive, all participants complete a 100-hour introduction to programming course before stepping on campus.

The technical curriculum offered through Access Labs is nearly identical to the coursework in Flatiron School's flagship software engineering immersive: a full-time, 15-week program broken into 5 3-week modules starting with the fundamentals like HTML5 and CSS to get students comfortable with object-oriented programming. The program culminates in a showcase of independent portfolio projects.

What do participants need to succeed? The Access Labs program is designed for individuals seeking a full career transformation, and so it requires a major time commitment and motivation. Even with deferred tuition, the time commitment of the program may present barriers to some students who need additional support in covering non-tuition costs such as childcare and food while they are enrolled full-time.

What does the organization need? Additional support for students to fully immerse themselves in the tech training. There is a need to ensure that students understand financing options and that they have access to a variety of financing options.

Fullstack Academy

Fullstack Academy offers a JavaScript-oriented curriculum structured as part of full-time and part-time immersive software engineering bootcamps and cyber security bootcamps.

Who is served: Adults

Number of participants served annually: 900-1000

Location: Financial District, Manhattan

Frequency/Duration: 4-week remote Foundations course (25 hours per week); 13-week full-time Core Curriculum (Monday–Friday, 9 a.m.–6:30 p.m. and later)

Eligibility Criteria: Some programming experience is required. Fullstack offers a Bootcamp Prep course that covers the intermediate coding skills required to pass their assessment

Application process: Online application, coding assessment, technical interview via Skype

Curriculum: JavaScript-centric full-stack web and mobile app development; cyber security

Skill level: Mid-level, advanced

Outcomes: Most participants (66.7% in the most recent reporting period) are hired for full time software engineering jobs within 180 days of graduating.

Partnerships: Tech Talent Pipeline, Grace Hopper, Bloomberg, American Express, Spotify, Google, and Amazon.

Cost: \$17,910 up-front or through loan-based financing. A \$1,000 need-based scholarship is available for qualifying women and veterans. In partnership with Tech Talent Pipeline, Fullstack offers a Web Development Fellowship covering the full cost of tuition.

Sources of funding: Tuition

What makes this program stand out? Fullstack Academy is designed for students with some experience in programming seeking to bolster their skills in the latest web development technologies, increasing their access to current employment opportunities. The

program curriculum is JavaScript-oriented and trains students in both front and back-end technologies. Fullstack works to maintain employer relevancy and consistently adapts their curriculum based on market needs.

The 17-week course begins with 4 weeks of remote work where students independently study programming fundamentals. The remaining 13 weeks are full time with a focus on full stack Javascript, which trains students in frontend and backend development and databases. Throughout the course, students also complete several projects to apply their skills. David Yang, co-founder of Fullstack Academy, notes computational thinking is crucial to programming and learning algorithms are core skills that equip students with the problem-solving employers are seeking.

Fullstack is also home to immersive coding programs serving underrepresented communities including the Grace Hopper Program and the NYC Tech Talent Pipeline Web Development Fellowship.

“Working with Tech Talent Pipeline, our partners have been able to help us figure out how to create maximize social economic impact,” said Yang.

What do participants need to succeed?

Fullstack has a competitive admissions process and is not designed for individuals with no prior experience in coding. This means that even those with some experience will need to prepare for the admissions process as well as the full program. During the program, participants must be able to commit to 10-plus hour days.

What does the organization need? More student awareness to get prospective students to think outside of the box in terms of an education path. The organization also needs funding to continue running a large program in New York City with high quality instructors.

Grace Hopper at Fullstack Academy

Grace Hopper Academy offers a 17-week, immersive software engineering course to women and non-binary individuals with no upfront tuition costs.

Who is served: Women and non-binary individuals

Number of participants served annually: 137

Location: Financial District, Manhattan

Frequency/Duration: 4-week remote Foundations course (25 hours per week); 13-week full-time Core Curriculum (Monday–Friday, 9 a.m.–6:30 p.m. and later)

Eligibility Criteria: Applicants must be 18 years or older (no age limit) and successfully complete their admissions assessments. No previous education, employment, or financial requirements, except in the case of those who want to access the deferred tuition (need to provide documentation stating authorization to work in the US).

Application process: Timed hacker rank assessment and live/remote pair programming challenge with technical staff

Curriculum: full-stack software development: Javascript, HTML, CSS, jQuery, and more.

Skill level: Advanced

Partnerships: Black Girls Code, Lesbians Who Tech

Outcomes: For Grace Hopper’s most recent reporting period (Jan–July 2018) 70 percent of graduates were employed full-time with 180 days of graduation, with a median annual base salary of \$91,100.

Cost: Deferred tuition model. \$19,910 tuition is paid in 9 monthly installments after graduates are hired full-time and begin work as a developer. A \$3000 enrollment deposit is applied toward the total tuition once hired. If graduates are not hired within 1 year, the deposit is refunded. Scholarships through Lesbians Who Tech are available for those who qualify

Sources of funding: Deferred tuition model (train now, pay later) means the program is fully funded by their graduates. As a program of Fullstack Academy, Grace Hopper receives an initial investment from Fullstack, but

the program is sustained by deferred tuition payments from fully-employed graduates.

What makes this program stand out? Grace Hopper Academy—named after the pioneering computer scientist—is a bootcamp founded to attract more women to tech careers. The program is provided through their partner coding school Fullstack Academy, and is a software engineering immersive designed exclusively for women with a deferred-tuition model. That means participants are only required to pay tuition once they are employed as software engineers.

“We noticed that our flagship programs at Fullstack Academy, despite different scholarship models and different incentives, weren’t really seeing results in increasing the gender diversity in our cohort,” said Michele Cantos, director of Grace Hopper Academy, on how the program was founded.

Students are equipped with computer science fundamentals in the first weeks of the program gaining a theoretical understanding of web development. Grace Hopper’s philosophy around education is “learn through teaching.” This has informed the focus on paired programming and group projects students work on that mimic a real-world software development environments.

Grace Hopper participants complete the program with 3 projects in tow, 1 solo project and 2 team projects. The capstone project is the largest undertaking, which students present to the Grace Hopper community at the culminating “Demo Day.” All projects are added to the students’ portfolio and used to demonstrate their work throughout the interview process.

What do participants need to succeed? Grace Hopper offers prep courses for prospective students looking to gain admittance into the bootcamp. The immersive course is not designed for beginners, and expects students need to demonstrate coding proficiency before admission.

What does the organization need? More space and more female engineering instructors.

CUNY Tech Prep

Geared CUNY Tech Prep is a year-long, full-stack Javascript program geared towards CUNY computer science and computer information systems majors.

Who is served: Computer science students enrolled in 1 of the 11 senior colleges across New York City

Number of participants served annually: 125 students in 2019-2020

Location: CUNY Institute for Software Design and Development, CUNY Grad Center, Manhattan

Frequency/Duration: 1 year

Eligibility Criteria: The 2020-2021 program is open to students who will be attending a CUNY senior college in Fall 2020, have completed a course in Data Structures, are a Computer Science or related major, are 18 years or older, do not make more than \$50,000 per year and are legally able to work in the U.S.

Application process: Online application, HackerRank Challenge, in-person whiteboarding, and behavioral interview. Admissions are competitive: for 2019-2020, only 125 students out of 400 applicants were accepted.

Curriculum: Full stack web development: HTML, CSS, Javascript, Bootstrap, React.js (front end) and Node.js, Express.js, Postgresql, and MongoDB (back end).

Skill level: Advanced

Outcomes: 75 perfect landed a job or internship within 5 months of completing CTP

Partnerships: CodePath, 36 industry partners

Cost: Free

Sources of funding: New York City Tech Talent Pipeline

What makes this program stand out? CUNY Tech Prep caters to computer science and computer information systems students enrolled in 1 of the 11 senior colleges across New York City.

Students participate in weekly technical classes and are challenged to develop their own individual projects to

apply their skills. In their capstone project, students work in teams to build a full-stack web application. Each team is assigned a mentor that provides supervision, introduces concepts and best practices, and performs code reviews. The project culminates in a Demo Night/ Graduation Celebration hosted by local NYC tech companies like Squarespace, where students demo their projects for NYC tech employers.

Technical interview preparation is a core focus during the second half of the year long program. CUNY Tech Prep has identified the technical interview as one of the major components that turn job applicants into employees. The program provides both mock interview prep and equips students with the frameworks necessary for students to successfully complete whiteboarding during the job application phase.

What do participants need to succeed? Beyond technical skills, students need mentoring and support to prepare for employment in the tech industry. Each CTP participant is assigned a career coach who works closely with them throughout the year to help them understand the landscape of the tech industry. Students are advised on how to create a technical resume and proper cover letter, undergo mock interviews, learn how to network at industry events, and more—cultivating the soft skills that, along with full-stack coding expertise, will enable them to break into New York's tech sector

What does the organization need? The capacity and ability to make changes based on student needs and industry partners priorities.

CUNY Tech Works

CUNY Tech Works is a community college-based training program that offers bootcamps and part-time programming courses at no cost in order to help underemployed and unemployed individuals successfully enter New York's tech sector

Who is served: Underrepresented groups in tech

Number of participants served annually: 350

Location: Manhattan

Frequency/Duration: Summer Bootcamp Program: 10 weeks, Monday–Friday, 10 a.m.–6 p.m.
Part-Time For-Credit Program: Weeknights (typically Monday–Thursday for 2–3 hours)

Eligibility Criteria: Must be 18 years or older, hold a high school diploma or equivalent (GED/TASC), be eligible to work in the United States, and unemployed or underemployed.

Application process: Attend an information session, fill out online application, TABE (Test of Adult Basic Education), interview

Curriculum: IT (CompTIA A+ and Cisco Certified Network Associate (CCNA) certification), UX (human-centered design, HTML, CSS, and Javascript, project management), Software development (C++, mobile and web applications, etc.)

Partnerships: Robert Half, Borough of Manhattan Community College (BMCC), Kingsborough Community College (KCC), and Queensborough Community College (QCC) – CUNY CEWP

Skill level: Intro, entry-level

Outcomes: Acquire certifications that qualify participants for entry-level positions as an IT professional. Software development students graduate with 13 college credits which can be used towards an AAS degree in Internet and Information Technology. Participants also create a GitHub portfolio highlighting their work.

Cost: Free. The program covers tuition and textbook costs, though textbooks must be returned.

Sources of funding: Funded by an America's Promise

grant from the U.S. Department of Labor's Employment and Training Administration

What makes this program stand out? CUNY Tech Works is an employment and training program that offers tech training, internships, career counseling, and job placement. Tech Works operates in partnership with 3 community colleges, each with its own course offering: Borough of Manhattan Community College (BMCC) offers IT management; Kingsborough Community College (KCC) offers user experience (UX) design; and Queensborough Community College (QCC) offers software development.

CUNY Tech Works has 2 pathways: a full-time, intensive summer bootcamp and a part-time for credit program. The bootcamp offers the quickest path to employment, while the year-long part-time program yields college credits which can be applied to an associate's degree in internet and information technology (AAS in IIT). Both programs are geared towards getting participants into tech careers, and offer help with online portfolios, job search and placement, and access to paid internship opportunities.

Though community college students are heavily recruited for the program, CUNY Tech Works is ultimately a workforce development program open to all applicants who meet the basic qualifications. The program, operated through CUNY's Office of Continuing Education and Workforce Programs (CEWP), is designed to address the gaps in access to tech education for underrepresented and low-income communities.

What do participants need to succeed? Students need support in order to break into the tech sector. They have access to industry experts who act as career coaches and help students develop professional skills that pertain to the tech space like project management and understanding the life cycle of software. Schools also host hackathons, industry talks, and other events to promote access.

What does the organization need? Funding and bridge programming for adult learners.

Goodwill

Launched in partnership with Google, Goodwill's tiered approach to tech skills is designed to support a wide range of learners to improve their digital literacy and get on the path to in-demand tech careers.

Who is served: Adults

Number of participants served annually: 10,000 (digital literacy), 70 (tech skills)

Location: New York City

Frequency/Duration: 1 day–10 months depending on the program

Eligibility Criteria: varies

Application process: varies depending on program

Curriculum: digital literacy, IT, software engineering

Skill level: Basic, intro

Partnerships: Grow with Google, NPower, Pursuit

Cost: Free

Sources of funding: Google.org

What makes this program stand out? The Goodwill Digital Career Accelerator® launched in 2017 with a 3-year, \$10.3 million Google.org grant. A national program, it provides 5 levels of digital skills training including: Digital Skills Awareness, Basic Digital Skills Training, Productivity Software Skills, Entry-Level Digital Skills, Mid-level and Occupation-Specific Digital Skills.

The first 3 levels offer entry level computer skills training to those looking to gain general familiarity with the digital landscape. These internal Goodwill programs teach participants skills such as how to access email, use keyboards, and how to work with Microsoft Suite products. Levels 4 and 5 are advanced web development training offered through partner tech training organizations including NPower and Pursuit.

What do participants need to succeed? Recognizing that non-tuition financial issues can prevent students from participating in or completing advanced,

intensive tech training courses, Goodwill steps in to assist students participating in advanced training at partner organizations. Goodwill connects participants with resources for transportation, including gas cards or Metrocards. Goodwill also assists participants with job placements and retention services.

What does the organization need? Additional funding to expand reach.

Media Labs—NYC Parks

The New York City Department of Parks and Recreation operates 32 media labs across the 5 boroughs, with 22 offering a range of digital skills programs including multimedia production and computer literacy.

Who is served: New York City residents

Number of participants served annually: 10,337 (4230 adults)

Location: New York City

Frequency/Duration: Varies, 6-8 weeks, once or twice per week

Curriculum: Microsoft Office, Adobe Creative Suite, multimedia production, computer literacy, web design

Skill level: Basic

Outcomes: Participants can receive certifications including Microsoft Office Specialist, Adobe Certified Associate

Partnerships: Educational Video Center, Pathways to Graduation, the Girl Scouts, MakerSpace NYC, NYC Salt Photography Program

Cost: Free (Membership required, annual fee of \$25-\$150)

Sources of funding: New York City Department of Parks and Recreation

What makes this program stand out? Media Labs makes digital literacy, office suite, and tech design training available to New Yorkers through Parks Department recreation centers. With 5 locations in the Bronx, 6 in Brooklyn, 12 in Manhattan, 6 in Queens, and 1 in Staten Island, Media Labs help make basic tech training accessible throughout the 5 boroughs. Most Media Labs have offer both open hours and programmed media education courses for a range of age and skill levels, including programs for job seekers. In total, 22 locations have Tech Opps programs— instructor-led courses which offer industry-standard certifications in Microsoft and Adobe software.

The Labs also offer workforce development courses that focus on online job searching and resume writing. "We

empower our communities and the voices in those communities to become producers of content and to be more of the storytellers," says Keenan Houser, program developer for Media Education of classes offered through the media labs.

What do participants need to succeed? To participate in a Media Lab class, a recreation center membership is required. For some programs, participants must commit to attend all classes.

What does the organization need? More STEM and coding programs at Media Lab locations around the city equipped with interdisciplinary instructors who are trained technologists.

ACE

The Association of Community Employment Programs for the Homeless (ACE) provides vocational rehabilitation and workforce development training for recovering homeless individuals with courses ranging from basic literacy and numeracy to computer proficiency.

Who is served: Recovering homeless individuals

Number of participants served annually: 147

Location: Based in Long Island City, Queens, but provides assistance throughout New York City

Frequency/Duration: Varies by participant, but can be 1 year or longer

Eligibility Criteria: Eligibility is somewhat flexible, but you must be willing and able to pursue full-time employment. Typical requirements include having housing through a shelter, treatment program, or other means, and thirty days of sobriety.

Application process: Rolling admission process with an intake session every Tuesday and Wednesday at 10 am.

Curriculum: digital and computer literacy skills

Skill level: Basic

Outcomes: full-time permanent employment

Partnerships: *Program Partners:* Bottomless Closet, Career Gear, Community Service Society (CSS), Dress for Success, Educational Alliance, Good Old Lower East Side (GOLES), John Jay College, Kennedy Counseling and Wellness, Kibel Companies, Nazareth House, New York Public Library, Project Renewal, St. John's Bread and Life, That Suits You, The Financial Clinic, Valley National Bank

Education and Training Partners: Blackhawk Security School, Ferrari Driving School, New York City Department of Health and Mental Hygiene, New York Safety and Training, WrightCo Environmental Solutions

Cost: Free

Sources of funding: ACE is funded through private and foundational giving. They have also developed program revenue through sanitation contracts, which hire program participants. All participants earn at least \$15 minimum wage, and full-time employees are eligible for health care and 401K benefits packages.

What makes this program stand out? The Association of Community Employment Programs for the Homeless (ACE) serves homeless men and women across New York City with several initiatives including an adult education program called Project Comeback. ACE occupies a "bridge space" in that its education programs providing a blend of vocational rehabilitation and workforce development.

Project Comeback offers individuals daily classes and workshops to provide the skills and support they need to achieve economic independence. Courses range from basic literacy and numeracy to computer proficiency. "We're serving a population that's pretty unique," explains Travis Tinney, Director of Development for ACE. Few clients come to ACE with a background or experience in technology.

What do participants need to succeed? Participants need to be committed to seeking full-time employment and maintaining sobriety. Recognizing the difficulties faced by homeless individuals, ACE provides intensive case management for people searching for housing and undergoing substance abuse treatment. It also structures programs around shorter timelines so that participants can more quickly move out of shelters and start working. It also serves clients for as long as necessary and maintain relationships after they have found full-time employment. While all program participants go through basic computer training, Tinney notes that lack of computer proficiency is not what's preventing the population ACE serves from accessing economic opportunity.

What does the organization need? More funding to put more homeless individuals through the program.

CAMBA/Cooper Union Retraining Program

The CAMBA program helps immigrant engineers and IT professionals translate their prior education and experience into jobs in the tech and engineering sectors.

Who is served: Unemployed or underemployed immigrant engineers and IT professionals

Number of participants served annually: Over 225 students

Location: Manhattan

Frequency/Duration: Most courses meet once a week for 8–12 weeks and take place at night or on the weekends. Total retraining program duration varies by student.

Eligibility Criteria: The applicant must be an immigrant with work authorization; have a Bachelor's degree or higher in the field of engineering or IT from their country of origin; be unemployed, underemployed, or working in a field not related to their education; have intermediate-level English proficiency; and demonstrate a financial need.

Application process: Applicants submit a detailed application form and resume to CAMBA via email. They are then contacted for phone screening, and if eligible, invited for in-person registration at CAMBA's Brooklyn office.

Curriculum: Qualified participants can choose from approximately 20 semester-long courses in information technology and chemical, mechanical, electrical and civil engineering taught by Cooper Union faculty and field experts.

Skill level: Advanced

Outcomes: 70 percent of participants connect to job as a result of the program and average a \$28,000 salary increase.

Partnerships: The program is itself a partnership between CAMBA and Cooper Union's Albert Nerken School of Engineering. It partners with scores of employers who have expressed interest in hiring program graduates.

Cost: Free

Sources of funding: The Robin Hood Foundation and Con Edison

What makes this program stand out? The Cooper Union's Retraining Program for Immigrant Engineers operates with workforce partner CAMBA—a nonprofit incubator—to train roughly 250 highly skilled IT professionals and engineers from 60 different countries each year. CAMBA—who is responsible for recruiting students—reports that an average of 30 percent of students admitted are refugees or political asylees.

The program is designed for immigrant professionals who have a bachelor's degree from an accredited college or institution in their home countries. Many students also have substantive work histories in engineering and IT, but require retraining in order to bring their engineering, computer programming, and business management skills up to date and in line with the demands of the American job market.

The goal of the Retraining Program is to match unemployed or underemployed participants with the American labor market and to find them a gateway job and path back to their profession.

What do participants need to succeed? This program is catered towards a specific population: highly skilled immigrant engineers and IT professionals who need retraining to return to their profession within the context of the US labor market. Accordingly, they need to focus their retraining coursework on the areas in which they gained education and experience in their countries of origin. Cooper Union and CAMBA recognize and work to tackle the multiple barriers may be preventing participants from returning to their career profession. Cooper Union provides engineering and IT coursework, while CAMBA provides the soft skills development like interview preparation, networking, and job retention. "When you're working with skilled immigrant professionals, it takes time and investment both by the individual and by program in order to address all the barriers there are to connect to one's profession," said Eileen Reilly, Vice President for Economic Development at CAMBA.

What does the organization need? More support around recruiting immigrant engineers.

LaGuardia TechHIRE—Open Code

LaGuardia Community College's TechHIRE—Open Code program trains young adult job-seekers in web development, software development, and network administration.

Who is served: Young adults ages 17–29

Number of participants served annually: 120

Location: Long Island City, Queens

Frequency/Duration: 5 weeks before moving to training partners

Eligibility Criteria: Must be unemployed or underemployed, not currently enrolled in college, hold a high school diploma or equivalent, and have basic computer skills

Application process: Online application, assessment during the application process to gauge interest, and interview

Curriculum: programming fundamentals, product development, and web development (Java, CSS, HTML), network administration (CompTIA A+ and N+ certification)

Skill level: Entry-level

Outcomes: Prepares participants for advanced technical training with partner organizations

Partnerships: General Assembly, Udacity, Software Guild, and Uncubed.

Cost: Free

Sources of funding: Funded through a grant from the U.S. Department of Labor's Employment and Training Administration

What makes this program stand out? LaGuardia TechHIRE—Open Code operates what can be considered a “bridge program” for non-degree seeking students through the Division of Adult and Continuing Education (ACE) at the community college. Michele Valdez, director of the program, reports that Open Code has a relatively high acceptance rate. Once enrolled, students go through a 2-week “vestibule” course at LaGuardia

where they learn basic programming languages and concepts to get comfortable with learning code. They also participate in career exploration exercises with Uncubed, a digital jobs search website, giving students insight into working at startups in the tech world. Upon completion of the introductory course, case managers assess a student's ability to move forward in the programs looking at everything from attendance to how well they work in teams.

The curriculum is designed to train students in computer science fundamentals and gain familiarity with software tools used to create websites. Once students complete the training with partner organizations, they return to LaGuardia and begin technical interview preparation.

What do participants need to succeed? TechHire—Open Code is a bridge program that seeks to not only prepare participants for intensive tech training with partner organizations, but also help them overcome barriers which may be obstacles to success. Participants have access to all services available to LaGuardia Community College students including the food pantry and wellness center, even throughout the duration of their training at partner providers to ensure they have their needs met.

What does the organization need? Close partnerships with community-based organizations and workforce development organizations that raise awareness about these training opportunities.

Year Up

Year Up is a one-year, intensive training program that aims to close the opportunity divide by providing young adults with 6 months of skills development and coursework followed by a 6-month corporate internship

Who is served: Underserved young adults ages 18–24

Number of participants served annually: 450+

Location: New York City

Frequency/Duration: Monday–Friday, 6 months in training followed by a 6-month internship

Eligibility Criteria: Must be 18–24 years old and hold a high school diploma or GED recipient

Application process: Candidates apply online, attend info sessions, and then go through a series of interviews

Curriculum: Career pathways and specialized training areas include Software Development (Application Development & Support), Information Technology (Cyber Security and Helpdesk/Desktop Support), Financial Operations (Accounting & Corporate Finance and Investment Operations), and Business Operations

Skill level: Entry-level

Outcomes: 90% of graduates are employed and/or enrolled in postsecondary education within four months of program completion, with employed graduates earning an average starting salary of \$40,000 per year. Participants also earn up to 30 college credits throughout the program.

Partnerships: American Express, Bank of America, BNY Mellon, Fidelity, JP Morgan Chase & Co, Morgan Stanley and New York Life

Cost: Free, includes stipend

Sources of funding: Over 60 percent of funding is generated through internship fees paid by participating companies

What makes this program stand out? Year Up begins with students in training for 6 months followed by a 6-month internship with an employer partner. The program sets high expectations for work and

professionalism, and includes a mix of technical classes like hardware repair and networking, and professional and communication classes such as business writing and negotiating. The soft skills training helps students position themselves in the workforce and navigate a tech focused career pathway. Throughout the program participants are partnered with a staff member who acts as an advisor/coach to provide ongoing support and career guidance.

“We’re always thinking about how to close the opportunity divide,” said executive director John Galante, who reports 90 percent of graduates are employed and/or enrolled in postsecondary education within four months of program completion.

What do participants need to succeed? Year Up acknowledges the critical value of wraparound services for ensuring student success. Participants are supported by staff advisors, professional mentors, dedicated social services staff, and other community-based partners.

What does the organization need? Continued corporate support as well as community and college partners. The organization is also always in search of professionals to serve as mentors or partake in one-time volunteer opportunities that support its young adults.

App Academy

App Academy is an intensive, 12-week, Ruby-focused web development course with a full stack curriculum and deferred tuition model.

Who is served: Adults

Number of participants served annually: Approximately 240 (60 students per cohort)

Location: Manhattan

Frequency/Duration: 12 weeks, Monday–Friday, 9 a.m.–6 p.m.

Eligibility Criteria: Anyone with a high school diploma or other equivalency who is comfortable using a computer. However, admissions are highly competitive, and prior programming experience will help.

Application process: A logical reasoning and reading exercise, a coding challenge, a technical interview, and a non-technical interview. Acceptance rate is less than 5 percent.

Curriculum: Software engineering: HTML, CSS, Java, Ruby on Rails, JavaScript, React, Redux, SQL, Advanced Algorithms, and Data Structures

Skill level: Advanced

Outcomes: Full-time employment as a software engineer. 2018 graduates earned a median salary of \$90,000.

Partnerships: Google and Wayfair to Fortune 500 companies, and startups looking to hire their first software engineers

Cost: Upfront: \$17,000

Placement-based plan: \$3,000 deposit, with \$25,000 due after securing employment with a salary of at least \$50,000

Hybrid: Pay \$9,000 up front; owe \$14,000 after securing employment.

Sources of funding: Tuition

What makes this program stand out? App Academy is a 12-week full-time software engineering course. The program was one of the first coding bootcamps to be founded on a deferred tuition model in an effort to make tech training more accessible by defraying upfront costs. In some payment plans, all or part of tuition is only owed once a student is hired and making at least \$50,000.

“It reflects our confidence in our program and the investment we all put into career coaches and career development,” said Sarah Sedeak, Partnerships Associate at App Academy.

During the final weeks of the course, participants receive instruction in resume writing, interview skills, negotiations, and technical interview prep. Additionally, the program equips students with industry knowledge giving them insights into how a tech companies operate. An optional 13th week is provided for students to brush up and refine technical skills and participate in interview practice.

What do participants need to succeed? Participants need to be ready for a very substantial time commitment that exceeds the 45 hours per week of formal course time. App Academy reports that “students should expect to put in about 90–100 hours every week.” This means that the program may not be well suited for individuals with considerable responsibilities outside of work. The program is immersive and intense, and App Academy has an attrition rate of about 15 percent.

What does the organization need? Find the right students to ensure the program admits participants who can become software engineers in a short amount of time.

Byte Academy

Byte Academy is an industry-focused coding school with courses including Python Fullstack and Data Science

Who is served: Adults

Number of participants served annually: 100

Location: Manhattan

Frequency/Duration: Immersives: 14 weeks, Monday–Friday, 10 a.m.–5 p.m.

Part-Time: 4–24 weeks, 2 days per week, 6 p.m.–9 p.m.

Eligibility Criteria: No technical experience necessary

Application process: Completion of a coding challenge and a technical interview is required to assess how students work through problems

Curriculum: Web development in Python, Javascript, React, HTML, and CSS; Data science in Python involving Pandas, statistics, visualization, prediction and machine learning, natural language processing, data wrangling, statistical modeling, regression, Hadoop, SQL, NoSQL and more.

Partnerships: Employers help Byte Academy tweak their curriculum to meet hiring needs. Byte Academy has teamed up with schools and universities for events, workshops, and the launch of new initiatives.

Skill level: Advanced

Outcomes: Increased salary, job placement

Cost: \$14,950

Sources of funding: Primarily privately funded

What makes this program stand out? Byte Academy was one of the first programs to offer a Python-focused coding bootcamp curriculum and intimate classes with roughly 5 students per instructor. Byte Academy's small class sizes help create a collaborative, seminar style environment. It also pioneered specializations in FinTech and Blockchain.

Byte Academy offers 3 courses out of its New York

City Location: Python Foundation, Python Fullstack, and Data Science, available as immersive, full-time courses, or bi-weekly part-time courses in the evening. All courses are centered on the Python programming language, but they vary in terms of their intensity and focus. Python Fullstack teaches HTML, CSS, and Javascript alongside Python backend development and data toolkits, while Data Science focuses on data analysis, machine learning, modeling, and other topics, with an aim to help students develop industry-specific applications.

Students also receive dedicated career coaching including resume and interview prep to help with job placement.

What do participants need to succeed? Students don't need to have technical experience before submitting an application. Once admitted, students complete 20 hours of pre work before the first day of class. Byte also has a Python foundations prep course; which students can complete and gain automatic admission into the full-time program. Byte Academy immersive courses demand a major time commitment: during the immersive program, students report spending an additional 20–40 hours per week outside the classroom in addition to the 40 in-class hours.

What does the organization need? Strategize around delivering high quality education at scale. The organization has a need to ensure that the curriculum is always up to date and aligned with industry standards.

Metis

Metis is a rigorous data science training program with a competitive application and selection process.

Who is served: Adults with programming and statistics experience

Number of participants served annually: 22–30

Location: Manhattan

Frequency/Duration: Monday–Friday, 9 a.m.–5 p.m., 12 weeks

Eligibility Criteria: Must have experience with Python programming and statistics

Application process: Online application with work and educational background, technical self-assessment, and goals, followed by a 5-hour time-limited technical challenge with a mix of questions in math, statistics, Python, as well as a data analysis and data science project. Select applicants move on to a 30 minute alumni interview, followed by an application review to evaluate overall preparedness.

Curriculum: Data science: Python, machine learning, web scraping, collaborative and cloud-based coding, visualization, distributed algorithms and systems architecture.

Skill level: Advanced

Outcomes: Full-time data science roles

Partnerships: Metis works with numerous companies and institutions that contract the organization to provide corporate data science training. They also collaborate with many different organizations and meetups to jointly promote data science opportunities

Cost: \$17,000

Sources of funding: Tuition and corporate contracts

What makes this program stand out? Metis was the first data science bootcamp in New York City, and claims to be the only accredited one. It is a product of Kaplan educational services.

Metis is a rigorous program with a competitive application and selection process. Applicants must have experience with programming and statistics prior to enrolling into the program. Students are typically professionals who are looking to pivot into data science from statistics-heavy roles or other industries like software engineering and academic research.

The intensive, project-based curriculum is taught by “industry-seasoned” data scientists. President and founder Jason Moss explains that hiring data scientists who can also play the role of educator can be challenging in a market where companies are also fighting for talent.

Veterans can now apply to use the Post-9/11 GI Bill to enroll at Metis, covering the cost of tuition.

What do participants need to succeed? Participants must be fully prepared with advanced-level math and statistics skills, and experience with Python and several Python libraries that enable additional scientific computing functionality. They should also understand core aspects of machine learning. Recognizing this high bar, Metis offers multiple levels of bootcamp prep courses created by the admissions and senior data science teams.

What does the organization need? To find instructors who are skilled data scientists and educators.

Senior Planet/Older Adults Technology Services

Created to help older adults use technology to achieve their goals, Senior Planet offers a range of courses from learning to operate a computer and navigate the internet to interacting online using social media.

Who is served: Older adults

Number of participants served annually: 4,000

Location: New York City

Frequency/Duration: 10 weeks, 2 times per week

Eligibility Criteria: Must be age 60 or older

Application process: N/A

Curriculum: digital literacy

Skill level: Basic

Partnerships: 200+ partners, ranging from senior centers, other nonprofits, faith-based organizations, and senior-service organizations. Including New York Public Library, AARP Foundation and the City of New York.

Cost: Free

Sources of funding: A mixture of private and public sources, including municipal agencies, corporations, philanthropic foundations, and donations

What makes this program stand out? OATS (Older Adults Technology Services) is serving the 60+ population by delivering programs that empower older adults to achieve their goals through technology. The tech programs are infused with elements of digital literacy, but ultimately oriented in different content areas so people can learn a skill based on their individual goals.

“We’re a social change organization that uses tech to promote the betterment of people as they age,” said Alex Glazebrook, director of operations for OATS.

OATS operates out of the Senior Planet Exploration Center in Chelsea in addition to a network of 23 public computer labs located in senior centers and faith-based organizations across New York City.



Older adults can take classes on operating a computer, navigating the internet, and using social media. Advanced classes teach how to build websites using Wix.com and how to leverage tech platforms to build a small business.

What do participants need to succeed? To participate in programming, students must have an email address and be comfortable navigating the internet.

What does the organization need? Additional resources would help the organization reach more potential students, as the current model is cost-intensive. Glazebrook also notes that adjustments could make programming more flexible and dynamic.

FedCap Computer Service Technician Program

Workforce development agency FedCap prepares students for entry-level IT jobs including help desk and tech support

Who is served: Individuals with disabilities, adults with conviction histories, veterans, and many others facing barriers to employment

Number of participants served annually: 100

Location: Manhattan

Frequency/Duration: evenings and weekends

Application process: Entrance requirements vary by program; the application process is initiated by contacting FedCap via phone or email

Curriculum: Computer hardware assembly and repair, troubleshooting/diagnostics, basic computer networking, Microsoft Office Suite, HTML, Java

Skill level: Entry-level

Outcomes: CompTIA A+ Certification

Partnerships: FedCap's closest partner is ACCES-VR, a program of the New York State Department of Education that provides vocational rehabilitation support for individuals with disabilities. FedCap also partners with community employers who hire their graduates and host interns

Cost: Tuition costs vary, and are often sponsored by ACCES-VR and other organizations.

Sources of funding: Tuition at Fedcap Career Design School is provided by ACCES-VR and other sponsoring organizations, as well as self-pay

What makes this program stand out? FedCap is ramping up digitally oriented programming, with a focus on the fundamentals of computer hardware and software. FedCap's IT program aims to prepare students for entry level computer service technician roles, such as help desk support, as well as prepare them for CompTIA A+ certification and other certifications such as Microsoft Office certification and Cisco networking certification. Though FedCap does not currently offer a slew of digital education courses, Laura Siegel, Associate Director, Career Design School at FedCap,

says they are working to develop this kind of course to meet the demand.

The program was approved to facilitate CompTIA information technology training and recently hired a new technology faculty member to round out the offerings. FedCap is looking to further develop curriculum that includes HTML, CSS, Java and other programming languages.

What do participants need to succeed? Recognizing the difficulties faced by individuals with barriers to employment such as a disability or a criminal record, FedCap works with government programs such as ACCES-VR or Workforce1 to offset out of pocket tuition costs. Post-program, FedCap offers career services for up to a year after graduation. Though the program does not formally provide bridge programming, it's something they work to integrate into their existing curriculum to aid students who need additional support.

What does the organization need? The organization needs space to offer additional programming and funding to help scale and improve services. Bridge programming would help participants improve literacy skills and better prepare them for the program, said Siegel.

"I would love to see a bridge program on the table to improve basic literacy skills," said Siegel. "Even for our folks who are coming through our custodial training program, now you need to have even just have some basic computer skills."

Sunset Spark

In addition to their programming for K–12 students, Sunset Spark works with immigrant parents to teach them how to engage their children in learning about science and technology and provides a fellowship opportunity to college students.

Who is served: Parents, immigrants

Number of participants served annually: 30

Location: Brooklyn

Frequency/Duration: Evenings and weekends

Eligibility Criteria: Generally, adults with children in schools in Sunset Park are eligible. (Adult programs are typically advertised to parents at the local schools and/or held at the schools.)

Application process: No application process

Curriculum: Creative technology

Skill level: Basic

Outcomes: Sunset Spark does not currently track outcomes for parent participants

Partnerships: Schools and local nonprofits. In the past, Sunset Spark has partnered with the Atlas:DIY, Brooklyn Public Library, Mixteca, the Green-Wood Cemetery, and NYU. They have also partnered with Industry City.

Cost: Free

Sources of funding: Service fees at schools (push-in programs during the day) and from the Siegel Family Endowment. Typically, the schools pay from their general student services budget, however in some cases they are funded through grants to the school.

What makes this program stand out? Sunset Spark works with immigrant families to make learning about science and technology fun. Courses offered include 3D printing where participants learn how to “design or scan and modify objects in 3D, then print them using 3D printers.” Parents also learn about toy making and gain skills to play math games with their kids.

“We work with immigrant families because they are an

untapped resource and typically don’t have access to high quality classes around science,” says Sunset Spark co-founder Gaelen Hadlett.

Additional workshops include training in neurological and cognitive development for parents to learn about cognitive milestones—like the development of language and math skills—and focus on discovering scientifically-backed ways to nurture their child’s growing brain. Hadlett founded the program with his wife in 2013 and they have stayed committed to their mission of providing high quality science and technology courses by mostly teaching the classes themselves.

In addition to facilitating workshops for parents, Sunset Spark also operates a fellowship program geared towards college students obtaining their bachelor’s degree in computer science or mathematics, though not all fellowships are tech oriented. Fellows spend 6–9 months with Sunset Spark working on a project that aligns with their interests.

The classes are offered at no cost to families and take place in public schools and libraries across Brooklyn. Though the program primarily offers courses geared towards children, they offer workshops in Spanish and English for parents in an effort to help them learn how to use creative technology to engage with their kids.

What do participants need to succeed? Parent participants are often Spanish-, Chinese-, and Arabic-speaking immigrants, and they would benefit from more programming support in their native language. Sunset Spark works to be as accommodating as possible, and no technical experience is necessary to take part.

What does the organization need? More funding to provide high-quality programs at no cost to participants.

Nucamp

Nucamp is a hybrid program with bootcamp offerings for beginners and advanced coders.

Who is served: Adults

Number of participants served annually: 200

Location: Remote during the week; Saturday in-person workshops are held in co-working spaces throughout New York City

Frequency/Duration: 4–22 weeks, online during the week (8–14 hours) with 1 in-person Saturday workshop from 9 a.m.–1 p.m.

Eligibility Criteria: Must over 18 years of age, know how to use a computer, and be able to bring your own laptop. For advanced bootcamps, working knowledge of HTML, CSS, and Javascript is expected.

Application process: No application for beginner bootcamp in web development fundamentals; short assessment for advanced tracks

Curriculum: Web development fundamentals: HTML, CSS, and Javascript. Front End and Full Stack development teach how to build web sites and mobile apps, as well as backend database operations in the case of Full Stack. Technologies include Bootstrap, React, React Native, NodeJS, and MongoDB.

Skill level: Intro, mid-level, advanced

Outcomes: 70 percent of students graduate the course

Cost: \$380-\$1905

What makes this program stand out? Nucamp is an affordable and location-flexible answer to the rise in technical training programs. With tuition priced as low as \$380 in New York City, Nucamp provides an opportunity for aspiring technologists to engage in coursework at a low risk when compared with immersive bootcamps that can cost upwards of \$20,000. “We want to help people who are left out of the digital economy find opportunity,” said Karim El Naggar, founder and CEO of Nucamp. “We operate with a social mission.”

Nucamp is a hybrid program with bootcamp offerings for beginners and advanced coders. The beginner bootcamp is a 4-week-long course teaching web development fundamentals. This course teaches the building blocks of designing for the web including HTML, CSS, and Javascript. The advanced bootcamps include a 17-week-long front-end web and mobile development course and a 22-week-long full stack web and mobile development course. These advanced courses provide the necessary skills for junior web or mobile developer positions.

What do participants need to succeed? Participants need the support of friends and family to make the 4–22 week commitment, as they are expected to spend 8–14 hours each week watching online lectures and completing homework exercises independently, without the structure of a fully on-site course.

CodePath.org

CodePath offers industry-backed, semester-long courses on campus and free of charge

Who is served: College students

Number of participants served annually: 860

Location: New York City colleges and universities (Currently: College of Staten Island, Queens College, and City College, with Columbia University in the pipeline) Baruch College and Brooklyn College have also hosted courses in the past.

Frequency/Duration: Semester-long (typically 13 weeks), 5–10 hours per week in addition to in-class time

Eligibility Criteria: For most courses, participants must be enrolled as a computer science major at a participating college or university. Some courses are suitable for non-CS majors.

Application process: Online application and assessment to determine the appropriate course level

Curriculum: Cybersecurity, Android app development, iOS app development

Skill level: Entry-level, mid-level, advanced

Outcomes: 20 percent of students with prior technical work experience obtain a more prestigious work opportunity after taking a CodePath course. 43 percent of students without prior technical work experience receive their first internship/job after taking a CodePath course. Black students who take CodePath courses are 14 times more likely than those who don't to earn tier 1 jobs or internships. Black first-generation college students who take a CodePath course are 3 times more likely to get a job at a tech company.

Partnerships: CUNY, Management Leadership for Tomorrow, United Negro College Fund, AnitaB.org. CodePath has also worked closely with Facebook for many years and regularly engage dozens of technology and corporate partners.

Cost: Free

Sources of funding: 90 percent of funding in 2018 came from earned income from corporations for recruiting.

Closer to 50 percent will come from earned revenue in 2019, with the other 50 percent coming from foundations, donors, and a small amount from colleges.

What makes this program stand out? CodePath.org started as a technical training company for senior engineers but quickly became an organization dedicated to “eliminating educational inequity in technical education” through transformational on-campus computer science education. CodePath.org—located in 49 colleges and universities across the country—provides high quality, rigorous training at scale at no cost to students.

The courses are taught directly on campus through a project-based curriculum developed with industry experts. Classes are facilitated by carefully selected and highly trained student leaders (TAs). Students access the training material, which includes video lectures and documentations, through a portal designed by CodePath. Students also have access to experts who are available to answer questions about the material. Participants attend classes once or twice a week for 2 hours in addition to independent study, which students should budget several hours each week to complete.

CodePath.org has built courses for several different subject areas including iOS and Android development, Cybersecurity, mobile app design, and technical interview preparation. Elements of computational thinking are embedded in every part of each course. Students taking these courses receive credit towards their degrees.

CodePath.org works with people at all levels in their journey, from incoming freshman thinking about pursuing a computer science degree to Ph.D students.

What do participants need to succeed? CodePath.org participants must be enrolled in a computer science course at a participating university. Some CodePath.org courses require students to have prior coding knowledge.

What does the organization need? Better connection to tech companies outside of Silicon Valley.

Recurse Center

The Recurse Center (RC) is an “educational retreat”—a project-based and self-directed school for programmers with prior coding experience looking to improve their skills.

Who is served: Adults with at least some programming experience

Number of participants served annually: 225–240

Location: Downtown Brooklyn

Frequency/Duration: 1 week, 6 weeks, or 12 weeks

Eligibility Criteria: Must have some previous coding experience and a desire to improve your skills

Application process: Written application and 2 interviews conducted by alumni

Curriculum: Self-directed by participants. RC is “not a programming bootcamp” and “not a job prep program” and is structured more like a writer’s retreat.

Skill level: Advanced

Outcomes: Employment as a programmer, upskilling. While RC is not focused on job prep, it has a dedicated career services team that partners with companies looking to hire engineers and data scientists.

Partnerships: Xandr, Heap

Cost: Free

Sources of funding: Recruitment services

What makes this program stand out? Recurse Center is a community of programmers who engage in self-directed learning to refine their technical skills. RC caters to people who already love programming but have a desire to dramatically improve their skills. The program has hosted students of all experience levels, from 3 months of experience to 30 years as a professional programmer.

The program is based out of Downtown Brooklyn and organized into groups of roughly 30 people called “batches.” Participants have the option to sign up for

batches of 1 week, 6 weeks, or 12 weeks. During that time, participants determine what they are curious about and select what they are interested in learning. The Center does not have a predetermined curriculum that focuses on specific languages or proficiencies. Instead, they encourage people to “un-school” and focus on what interests them.

What do participants need to succeed? The Recurse Center offers need-based living expense grants to women, trans people, and people from racial and ethnic groups traditionally underrepresented in programming, which grantees can then use for housing, food, childcare, or anything else needed while participating in the training. Qualified participants can request grants ranging from \$500 to \$7000 depending on need and duration of stay at RC.

What does the organization need? Support for students not familiar with a self-directed educational environment.

WiTNY

Launched in 2016 in collaboration with the City University of New York (CUNY), Cornell Tech, and industry partners, WiTNY is an initiative that works to propel women into tech careers through education, work experiences, and community building.

Who is served: Female-identifying students at CUNY and Cornell Tech studying computer science and related majors.

Number of participants served annually: 500

Location: CUNY and Cornell Tech campuses (Cornell Tech includes The Emma and Georgina Bloomberg Center, Tata Innovation Center, and the House at Cornell Tech.)

Frequency/Duration: Year-round

Eligibility Criteria: CUNY and Cornell Tech students with a demonstrated interest in computer science and in good academic standing. The Winternship and Career Readiness Programs require a demonstrated commitment to pursuing a career in technology, like a major in Computer Science.

Application process: A student application, potentially including free-response questions and a phone-screening

Curriculum: WiTNY's Summer Guild program teaches introductory-level coding skills in a project-based environment with the hope of sparking incoming CUNY students' interest in tech. The Winternship program is a paid internship program that runs in January and is focused on career exploration and career readiness. Students work in groups on a technical project while gaining general workplace skills and competencies. The Career Readiness program takes students through the tech-hiring process. WiTNY also hosts a series of events and initiatives to build community among its participants and also supports the design of new introductory computer science courses at CUNY.

Skill level: Intro, mid-level, advanced

Outcomes: 4,953 students have applied to participate and 1,714 students have actively participated in one or more WiTNY programs. More than 100 companies have engaged with WiTNY and CUNY students, and WiTNY has supported 14 Cornell Tech women with a fellowship. The WiTNY Winternship program

has increased the percent of its CUNY women who successfully land a summer tech internship from under 5 percent to more than 50 percent. WiTNY Summer Guild participants who were not previously declared CS majors register for a course in computer science at twice the rate of their non-Summer Guild peers. Additionally, 45 percent more women have enrolled as CS majors and 94 percent more women have graduated with a CS degree.

Partnerships: Cornell Tech, CUNY, Upperline Code, and about 100 employers who volunteer for programs, host Winternship students, or hire summer internship students.

Cost: Free

Sources of funding: Corporate sponsors, including founding partners Verizon and Accenture

What makes the program stand out? WiTNY partners with 2 major academic institutions as well as industry partners. WiTNY's staff works for both these institutions and are embedded within each of them. WiTNY also has a unique and specific focus on all of their programs benefiting women, and all of their programming is geared at the specific challenges and obstacles that many women face when pursuing careers in the technology industry.

What do participants need to succeed? Students need to be ready to learn and able to commit the necessary time and work to whichever program they're enrolled in.

What does the program need? Employer partners to volunteer for programs, host Winternship students, or hire summer internship students. Additional funding for WiTNY supports more students enrolling in WiTNY's programming to keep up with student and industry demand. WiTNY is currently accepting about one third of qualified applicants into its programs.