

Hearing Title

Hearing of the House Committee on Transportation and Infrastructure

Subcommittee on Aviation

Tuesday, February 11, 2020

2167 Rayburn House Office Building

Statement of Dana Donati

General Manager and Director of Academic Programs

LIFT Academy

Good morning Chairman Larsen, Ranking Member Graves and distinguished members of the Subcommittee. I am Dana Donati, General Manager and Director of Academic Programs at the Leadership in Flight Training (LIFT) Academy, a Republic Airways Company. LIFT Academy is a flight school and technician apprenticeship program focused on addressing our nation's looming pilot and technician shortage, while ensuring technicians and pilots who enter the aviation workforce at Republic Airways have the appropriate skills and training needed for success in the commercial airline environment.

The Aviation Workforce title in the FAA reauthorization Act of 2018 has helped to further critical discussion and action within our industry on the steps we must take to attract the next generation of highly skilled associates and we greatly appreciate this Subcommittee's leadership in advancing those provisions. LIFT Academy and Republic Airways looks forward to partnering with you to ensure our aviation workforce continues to support safe, reliable air service to every corner of the country. Thank you for holding this important hearing and for the opportunity to share my perspective.

In addition to leading the LIFT Academy and supporting workforce development, I am a professional airline pilot with over 8,000 flight hours. I received my initial professional pilot training from the Community College of Beaver County (CCBC), a Part 141 aviation school. I gained my BS in Aviation Management from Robert Morris University and my MBAA from Embry Riddle and went on to fly as First Officer at another regional airline before moving to Republic, where I spent 11 years and eventually

became Assistant Chief Pilot. I have held positions as First Officer on the Embraer 175 and Captain on both the De Havilland Dash8 Q400 and the Embraer 175. Throughout my career at Republic and in higher education, I have had an intimate view of workforce development and training. After spending a few years away from Republic as Dean of CCBC's School of Aviation, I returned in 2017 to focus on workforce development initiatives such as the LIFT Academy, which I lead today.

After nearly a year of detailed advanced planning and design, Republic opened LIFT Academy on September 4, 2018, with a pilot training program and an initial class of 13. Since then, we have received over 4,000 applications and have secured 500 students' enrollment dates, with a current enrollment of 281 flight students and 19 registered apprentices. In 2019, LIFT added a technician program, enrolling five students initially and quickly growing from there. This program will broaden the pool of qualified, licensed aviation maintenance technicians to support the growth of LIFT and Republic Airways.

Today we have training programs for both pilots and mechanics and upon maturity, will graduate 330 pilots and 20 maintenance technicians to the aviation workforce each year. As a point of reference, Republic has averaged approximately 600 new hire pilots and 122 new hire maintenance technicians annually for the last two years; these numbers are expected to grow by approximately 50 percent over the next decade. With expansion plans on the horizon, and with Republic Airways poised to hire 200 new technicians in 2020, LIFT Academy expects to increase its yearly graduates even further.

Republic Airways

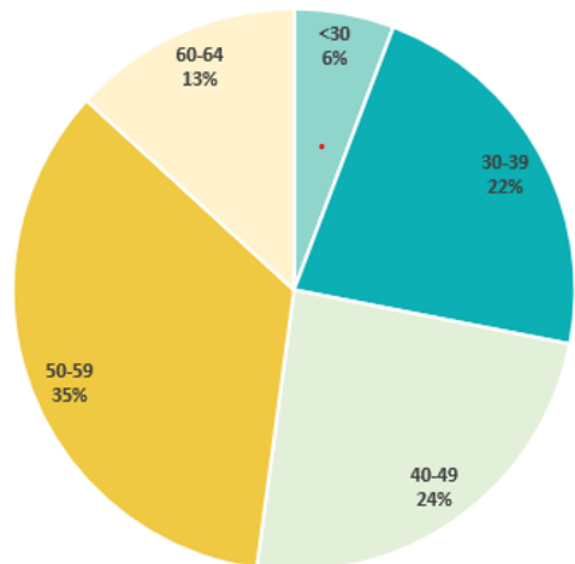
Republic Airways is a large regional airline with over 6,000 employees that operates over 1000 scheduled flights each day in partnership with our major airline partners American, Delta and United. Republic completed more than 337,000 flights in 2019 and served roughly 100 cities in North America, including Canada, Mexico and the Caribbean. According to the Regional Airline Association, regional airlines operated 41 percent of the nation's departures and safely carried more than 159 million passengers on nearly four million departures in 2018, with over 10,500 departures a day. Regional airlines play a critical role in connecting communities large and small to the global air transportation network; in fact, at two-thirds of our nation's airports, regional airlines provide the only source of scheduled passenger air service. While airlines like Republic contribute to aviation's overall \$1.6 trillion economic footprint, those communities served exclusively or predominantly by regional airlines

generated more than \$134 billion in economic activity on their own and supported more than one million jobs in 2018.

Like other airlines, Republic has had to overcome pilot and technician workforce challenges that threaten our ability to continue to serve these passengers and communities. Republic was not alone in facing these challenges; in fact, pilot and technician shortages continue to make headlines with Boeing's 20-year forecast reporting a shortage of 212,000 pilots and 193,000 aviation maintenance technicians in North America alone. While Republic is able to fully staff our flight decks today, FAA airmen data shows the demand for airmen is unrelenting and we anticipate that coming retirements and normal domestic growth demands will continue to strain today's pilot workforce. In fact, nearly half (47.6 percent) of today's qualified pilots who hold ATP AMEL certificates and valid 1st class medicals will reach mandatory retirement age within 15 years (51,762 airmen). Additionally, 13.4 percent of all ATP AMEL airmen with valid 1st class medicals will reach mandatory retirement age within five years (14,616 airmen). For context, the size of today's actively flying regional airline pilot workforce is about 17,000 pilots. Importantly, this retirement data simply looks at known, age-65-related attrition to our domestic airmen workforce. Were we to factor in a continuation of recent four percent to five percent domestic growth departure demands, we could easily see the need for another 15,000 pilots over the next five years.

ATP AMEL Airmen with Valid 1st Class Medicals by Age

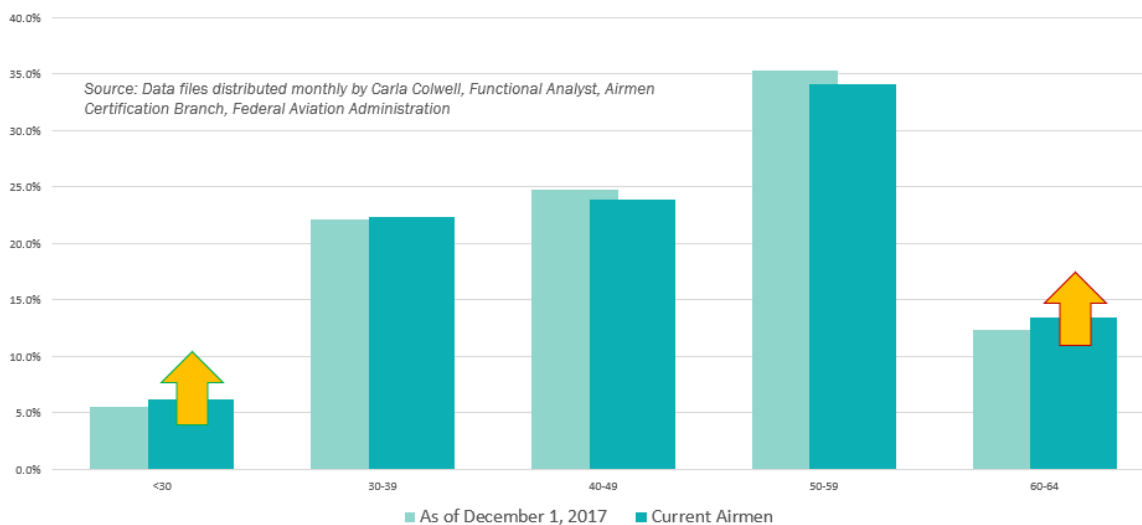
- 51,762 qualified airmen will reach mandatory retirement age within 15 years.
- 14,616 qualified airmen will reach mandatory retirement within 5 years.
- US Regional airlines employ about 17,000 actively flying pilots.



Source: Data files distributed monthly by Carla Colwell, Functional Analyst, Airmen Certification Branch, Federal Aviation Administration

While FAA data shows an uptick in new pilots entering the system, we are seeing an even larger uptick in pilots approaching mandatory retirement, showing that new pilots entering the system are still not keeping pace with retirements.

ATP AMEL Pilots with Valid 1st Class Medicals by Age



Even more critically, regional airline training departments were beginning to report that pilots entering initial training were not performing as well as they did in years past. From 2013-2018, these findings were confirmed by a series of academic studies detailing new hire training performance correlating with various pilot backgrounds. While these studies¹ merit review in full, each showed flight hours alone to be a poor predictor of pilot performance. In fact, data has shown that pilots with lower total flight time have a higher training completion rate and need less remedial training. We believe this is because pilots with lower flight time replaced unsupervised flight time with structured flight time and specific, structured training, incorporating academics, relevant practical experience, experience in a crew environment, flight instruction and other components of training and experience that are stronger predictors of pilot performance than hours alone.

With these factors in mind, Republic Airways made a substantial investment in pilot and technician training by creating our LIFT Academy. As LIFT Academy supports pilots from first flight to attaining 1,500 hours, we incorporate structure throughout and scaffold required flight time with important academic training. Our mission at LIFT Academy is to attract a new generation of aviators to

¹ <https://www.pilotsourcestudy.org/new-pss-2018>

flight by providing superior flight training, while addressing the economic and structural barriers to entry. Three barriers I will discuss today are the cost of training, training behaviors and technology.

LIFT Academy Mission

At Republic and at LIFT, a relentless focus on safety drives everything we do. Our flight crews and maintenance technicians are some of the most experienced and thoroughly trained in the entire airline industry and when we launched LIFT in the face of a growing pilot shortage, Republic Airways was meeting two related, but distinct, challenges. One objective was to expand the pool of qualified pilots. In recent years, fewer pilots have entered the workforce than needed to keep pace with those leaving the workforce due to mandatory age 65 retirements, let alone to accommodate growth in passenger demand. More importantly, while our recruiting departments were still attracting plenty of qualified candidates, Republic's training officials were finding that many of those candidates were qualified on paper but in fact were unable to meet Republic's rigorous training requirements, as detailed above. Considering this, Republic was not satisfied to simply expand the qualified pilot population but aimed instead to ensure an adequate supply of qualified pilots with the core competencies and skills relevant to the commercial flight deck.

Today, Part 121 professional pilots qualify through two types of pathways. In the first instance, a pilot trains to Commercial Pilot Certificate standards and then becomes eligible for Part 121 airline hire by assimilating additional hours in flight until the pilot has attained a total of 1,500 hours. These pilots enter airline initial training programs with an unrestricted Air Transport Pilot (ATP) certificate. The second is where a pilot receives rigorous, highly structured, aviation-related academic training alongside their flight training. This training is focused on the scenarios and tasks the pilot will be presented with in the commercial flight deck. When students in these programs graduate from training, they meet the eligibility criteria for a Restricted Air Transport Pilot (R-ATP) certificate. Republic found that newly hired pilots from these structured training programs were consistently outperforming their counterparts who followed a predominantly hours-based background, where the latter need more remedial training and fail to complete training more often. While candidates coming from hours-based qualification pathways can certainly succeed in initial training and many go on to become competent and valued pilots, this qualification pathway does not provide the hiring carrier with a real sense of where and how the aviator has spent that time. Unfortunately, structured training pathways, traditionally offered by institutions of

higher education and the military, are limited in number and other ways that constrain aspiring pilots' access to them.

Considering this, and to meet the anticipated shortfall of *suitable* pilots, Republic Airways clearly identified the need to ensure a supply of highly trained pilots with a solid background of academics and flight training that would reflect the airline's requirements for a pilot flying under Part 121 regulations. By creating the LIFT Academy, Republic took a unique, proactive approach to addressing the growing shortage of suitably trained pilots, by becoming the only regional airline to operate its own training academy specifically designed to create a direct-to-hire path for its graduates. Students train on state-of-the-art, eco-friendly single and multi-engine training aircraft. This training is supplemented with high-fidelity flight simulators, which are built to achieve the most realistic flight deck environment. Our training aircraft are equipped with state-of-the-art technologies, such as glass cockpits and Full Authority Digital Engine Control (FADEC), that seamlessly transfer learning to the regional jet aircraft flight deck. Our program provides LIFT students with the skills and the commercial airline professionalism required of Republic Airways pilots.

Technology

Technology advancements in today's commercial aircraft require pilots to learn additional technical skills and behave differently. Stick and rudder or pure hand-flying skills remain critical, but flight deck management skills and pilot decision making skills are also required to complete the framework of a well-educated pilot. Recognizing this, we determined that state-of-the-art training facilities and equipment would be required to take the aspiring pilot to the educational and skill level required to enter regional airline initial first officer training. Consequently, a LIFT Academy student trains in Diamond single and multi-engine aircraft, which are state-of-the-art training aircraft designed to give the student exposure to modern technology in the flight deck. For example, the Diamond aircraft are equipped with Garmin G1000NXI avionics. This next-generation flight deck technology provides multi-function information, navigational and instrumentation displays that are increasingly being incorporated into regional and major operators' airliners. The displays can show aircraft position on taxiways and runways and other aircraft converging on one's present position in the air. The synthetic vision technology capability creates a "virtual reality" database landscape with similar terrain, obstacle, flight plan routes, weather, airports and other important details displayed on the Primary Flight Displays.

With color coded terrain and WAAS-GPS based precision landing approach guidance, LIFT Academy students train using the highest level of technology in general aviation preparing them for the technology required in passenger aircraft.

Training Behaviors

In the classroom environment, LIFT Academy is developing training material using virtual reality simulation to enhance procedural learning for both flight students and aviation maintenance technician apprentices. In addition to the equipment, the training program incorporates the best practices of the airlines in using documentation that replicates airline checklist and briefing materials and incorporates Threat and Error Management and Crew Resource Management principles in a crew concept program.

Once students complete their training as a Commercial pilot, LIFT trains them to become Certificated Flight Instructors. From that time until they achieve their required 1,500 hours and may enter the Republic New Hire First Officer training program, LIFT students are flying and training other students in an academic, structured training environment. Every lesson taught by an instructor incorporates LIFT Academy syllabus requirements. As instructors teach and critique lessons, they continue to perfect their flying ability and knowledge. Additionally, LIFT Academy students perform training in Class Charlie (controlled) airspace in and around airline traffic and we have specifically created procedures for our students to fly arrivals imitating the FAA arrivals surrounding the Indianapolis International Airport. In this way, students are gaining real world experience in a Part 141 environment under both visual flight rules and instrument flight rules while they instruct at LIFT Academy.

Additionally, flight training in the aircraft allows for controlled simulated system failures and simulated abnormal weather conditions. Examples include partial panel flying, flight instrument failures, aircraft systems failure, unusual attitude recoveries, stall recoveries, emergency assistance, missed approach procedures, wind shear, complicated or sidestep approach maneuvers, approach guidance failures, emergency approach procedures, and more. Flight training in the flight simulation training device (simulator) allows for actual system failures and weather-induced scenario flying. Aircraft, electrical and engine malfunctions, as well as smoke and fire emergency procedures are also incorporated throughout the training syllabus. Simulation training of abnormal and emergency

malfunctions promote excellent safety practices, building competence and confidence. Where a pilot accumulating flight time on his or her own will rarely if ever encounter or gain skills on emergency procedures or relevant commercial airline behaviors, at LIFT these are core curriculum components, leaving nothing to chance.

Barrier to Entry: Career Awareness

As this Subcommittee knows, one of the most important aspects of strengthening and diversifying the aviation workforce takes place through outreach. At LIFT, we have built outreach into our program through partnerships and direct actions to appeal to and support a broad complement of potential pilots and technicians. One element showing strong success is the LIFT Lab, which travels to K-12 schools, recruiting events, air shows, STEM fairs, Girl Scouts and Boy Scouts events and provides everyone the ability to ‘experience flight’ using virtual reality. The LIFT Lab also provides the ability for offsite applicant testing; traveling to cities outside of Indianapolis to interview and test applicants increases outreach.

LIFT Academy is also specifically targeting underrepresented demographics through our outreach activities and have taken the following steps to encourage and support such applicants. Today, about 20 percent of the applications LIFT Academy attracts come from women and about 8 percent of our total enrollees are women. LIFT competes for enrollees with other academies, including those offered by mainline air carriers, as well as other STEM professions and some women enroll elsewhere. However, we are constantly scrutinizing our data to identify bias, or unique circumstances that might be preventing women from enrolling in the numbers we want to see. For example, studies² have found small, if any, differences in academic and cognitive abilities between genders. Yet high school course selections vary between boys and girls, measuring different academic performances. We believe these facts may influence scoring on our screening tests and are consistently evaluating more appropriate ways to weigh varying criteria in our selection process.

Drawing on my experience in pilot training and education, I know how important it is to get in front of girls at a young age, to successfully encourage them toward a career in aviation. In order to

² <https://courses.lumenlearning.com/suny-educationalpsychology/chapter/gender-differences-in-the-classroom/>

close the gender gap in aviation, we instituted programs such as career days, STEM events, and aviation camps for K-12 girls to help them prepare for training at LIFT Academy. Presently, LIFT partners with dozens of organizations to expand our reach. The Girl Scouts and Boy Scouts of Indiana, Project Lead the Way, Junior Achievement, the Indiana Black Expo, Diversity in Aviation, the Organization of Black Aerospace Professionals, and the Latino Education Summit are just a few examples of how we are reaching new candidates, including those who may not have had many prior aviation experiences.

Barrier to Entry: Cost of Training

Pilot career path inaccessibility is a policy problem undermining the effectiveness of workforce outreach programs. Pilot education and training costs associated with flight education degrees at institutions of higher education dramatically exceed Federal student loan caps. Subsidized and Unsubsidized Aggregate Loan Limits for Independent Students is \$57,500 for a four-year degree program and \$20,000 for a two-year degree program but the total degree costs for a bachelor's degree, alongside the added expense of flight training, can often exceed \$200,000. To bridge this substantial funding shortfall, students or their parents must apply for personal loans to make up the funding shortfall, yet not every family has the financial background or credit scores needed to access these loans. This is even more true among the underrepresented minority population in aviation. Today, students do not have equal access to pilot training; those without wealth or access to capital are often barred from the career path because they cannot raise or borrow the funds needed for training. According to a 2018 Government Accountability Office report surveying collegiate aviation schools, the high cost of flight education degrees presented one of the primary challenges to recruiting and retaining students. In my experience, this remains a significant barrier of entry today.

LIFT has been working to address this. As a vocational program, the cost of qualifying for an Air Transport Pilot Certificate through LIFT Academy is substantially lower than the cost of a two- or four-year aviation flight education degree program. The cost to a student training at LIFT Academy is \$65,000, after a \$20,000 per student tuition subsidy from Republic Airways. This subsidy is the only one of its kind offered by a US airline to flight-training candidates. Republic additionally offers graduates who work for Republic for five years another \$15,000 in loan forgiveness. With a guaranteed job at Republic for all graduates, and competitive pay for Flight Instruction during the course of the program,

these combined supports make the LIFT Academy one of the most affordable and accessible pilot training programs in the nation.

Unfortunately, most pilots who train outside of two- and four-year degree programs – even at highly-structured programs such as LIFT – have no access to Title IV Federal student financial aid at all. While such funding is available for other vocational training, the process for accreditation of highly structured programs like LIFT can be difficult, and accreditation is a required component of Title IV funding. LIFT plans to commence the accreditation process that will allow our students to qualify for Title IV in September 2020. In the interim, we help students address this challenge by working with private lenders to help students fund flight training and establish payback options that align with their career progression. Students who successfully complete our training program are guaranteed a job that will allow them to comfortably repay their loan obligations. Moreover, a Brown Aviation Lease review of career earnings data from the Bureau of Labor Statistics, Embry-Riddle Aeronautical University, Association of American Medical Colleges and the American Bar Association found that the Return on a pilot’s training investment exceeds those of doctors and lawyers.



Through subsidized training, reduced-cost training, loan forgiveness and tuition assistance, LIFT Academy is making a true investment in a young person’s future. Doing so has opened new opportunities for students from diverse backgrounds who could not otherwise have attained training

and will have a guaranteed Republic pilot job waiting for them when they graduate from the program. At LIFT we understand, despite our best screening and up-front testing, some students will simply not make it. Unlike some “for profit” flight training institutions who will continue to provide training as long as the student continues to pay, LIFT seeks to quickly identify individuals who do not show long term potential and remove them from the training programs quickly so that they do not needlessly waste their resources. Considering this, loans obtained by LIFT students today are “money good;” yet, about 25 percent of LIFT Academy candidates who pass initial screening cannot obtain these private loans, even with support from LIFT. This is not surprising, because LIFT outreach programs reach talented candidates with high aptitude, but who may have been exposed to life circumstances that have impacted their ability to maintain the necessary credit scores.

One of the first applicants who was accepted to LIFT Academy has been unable to secure the loan needed to cover funding. This applicant had been living with limited means for some time and could not get his credit score up despite taking advantage of credit counseling from our lender. This talented student, from an underrepresented demographic, wants to become a pilot and has the drive to do so. He passed our initial screenings comfortably. The only thing standing between him and a life-changing career in aviation is a credit score that has blocked his education financing. If LIFT Academy students like this had access to Title IV Funding, otherwise known as guaranteed student loans, we could help these candidates overcome the financial barricades that block this career.

Maintenance Technician Program

In addition to reducing barriers of entry for aspiring pilots, LIFT Academy has expanded its focus on aviation maintenance technicians, another profession in short supply. In fact, the Aviation Technician Education Council (ATEC) projects that the mechanic population will decrease by 5 percent in the next 15 years and indicates 30 percent of the workforce is at or near retirement age. Forecasts by the U.S. government and Boeing project a need for thousands of additional mechanics in the next 10-20 years. ATEC tells us that some of the toughest challenges to growing the maintenance technician pipeline include maintaining qualified instructors, testing costs, lack of mechanic examiners, and a lack of awareness of the career path or its advantages.

To help attract candidates, LIFT Academy works closely with Indiana high schools and career

technology centers by presenting students with alternative training pathways, such as LIFT Academy's Aviation Maintenance Technician Apprenticeship program. The "earn and learn" model helps students with various financial backgrounds, because they are paid for their training and receive an industry recognized certification upon successful completion of the program.

Moreover, the Department of Labor has approved two LIFT Academy apprenticeship programs, the Aviation Maintenance Technician Apprenticeship Program and the Airline Transport Pilot Apprenticeship Program. Each provides apprentices with a high-quality career pathway using the earn and learn model. Technician apprentices gain paid work experience alongside licensed Airframe & Powerplant (A&P) professionals while they receive classroom instruction preparing them to obtain industry-recognized credentials. During the program, apprentices gain experience working on LIFT's fleet of Diamond single- and multi-engine DA40 and DA42 aircraft and Republic's Embraer 170/175 jets. Upon completion of the 30-month program, graduates will benefit from job offers at Republic Airways as an aviation maintenance technician.

Recommended Policy Actions

By removing the barriers to flight training and offering industry recognized apprenticeship programs, LIFT Academy is helping Republic Airways develop their future workforce. We additionally have recommendations for policymakers that would empower programs like LIFT to do even more to strengthen tomorrow's pilot and technician workforce.

Expanding the Title IV Federal financial aid program will ensure students can cover additional flight training costs associated with flight education degrees. While the LIFT program represents an excellent alternative for students, as an industry, we are committed to dramatically increasing the supply of pilots from all sources, including degree programs at institutions of higher learning. Next, Congress can encourage the Federal Aviation Administration to update the Part 147 curriculum so that mechanics are prepared to work on technologically advanced commercial aircraft. We applaud Rep. Young (R-AK) for introducing legislation directing FAA to issue a performance-based regulation and ensure that FAA incorporates Department of Education expertise. Next, we need to make it easier for America's veterans to use their GI Bill benefits to pay for flight training, including their private pilot's license. These are high demand jobs and America's veterans are among the most deserving and should

be able to fully benefit from their promised benefits on educational financial assistance. Lastly, I have personally seen the difference that a structured pilot training pathway makes for pilot performance when compared with pilots who have simply accumulated unstructured, fair-weather flying hours on their own. While structured training pathways offered by traditional providers such as military and institutions of higher education produce strong candidates, many aspiring pilots cannot access these pathways and will instead qualify through unstructured flying time. Others will be deterred from the career path altogether. Institutions like the LIFT Academy have stepped up by creating additional, highly structured pilot training pathways and would be able to further improve access to workforce training if our potential students could realize Federal funding support. This is especially true if we want to expand the underrepresented demographics in the flight deck of tomorrow. We understand Title IV funding mechanisms are relatively fixed; but we encourage Congress to think creatively about assisting our students and *potential* students, who cannot access funding today but would enroll tomorrow if they could access guaranteed student loans or similar supports. As we request these considerations, LIFT and Republic will continue to do our part so more students can access high quality structured training.

Conclusion

Chairman Larsen, Ranking Member Graves, and members of the Subcommittee, thank you for taking the time to hold this hearing and making workforce development a priority. It is a privilege to testify today, and I welcome any questions you may have.