

Grow the Biotech Workforce in North Texas to Meet Emerging Skill Needs via a Collaborative Partnership – Project Narrative

Section 1: Project Description and Overview

Section 1a: Executive Summary

Grow the Biotech Workforce in North Texas to Meet Emerging Skill Needs via a Collaborative Partnership will create a regional biotechnology training ecosystem to meet the current needs of North Texas employers while creating future employment opportunities for workers in resilient, high-demand, high-wage jobs. Dallas College, a majority-minority institution, and the largest community college in Texas, will serve as the backbone organization for the sectoral partnership and, the North Central Texas Council of Governments will serve as the regional workforce training system. The Project will utilize Economic Development Administration funding to establish an employer-led biotechnology advisory council, conduct a regional analysis of existing education gaps and identify future opportunities for curriculum and program design, create a regional career pathway model in biotechnology, market employment and educational opportunities in biotechnology and provide outreach to recruit historically underserved populations, implement training programs created by the biotechnology advisory council, and provide wrap-around services to training participants to ensure successful program completion. A recent survey of North Texas biotech employers identified a lack of robust talent supply in entry-level biotechnology skills. To address this gap, the partnership will create an introductory boot camp, BioWorks for North Texas, to train 800 participants for entry-level biotechnology employment and will build a career pathway model in biotechnology across all education levels to provide future career growth opportunities. The industry-led program will address critical employer talent shortages in biotechnology while providing historically underserved residents of North Texas a pathway to good jobs in a growing industry sector.

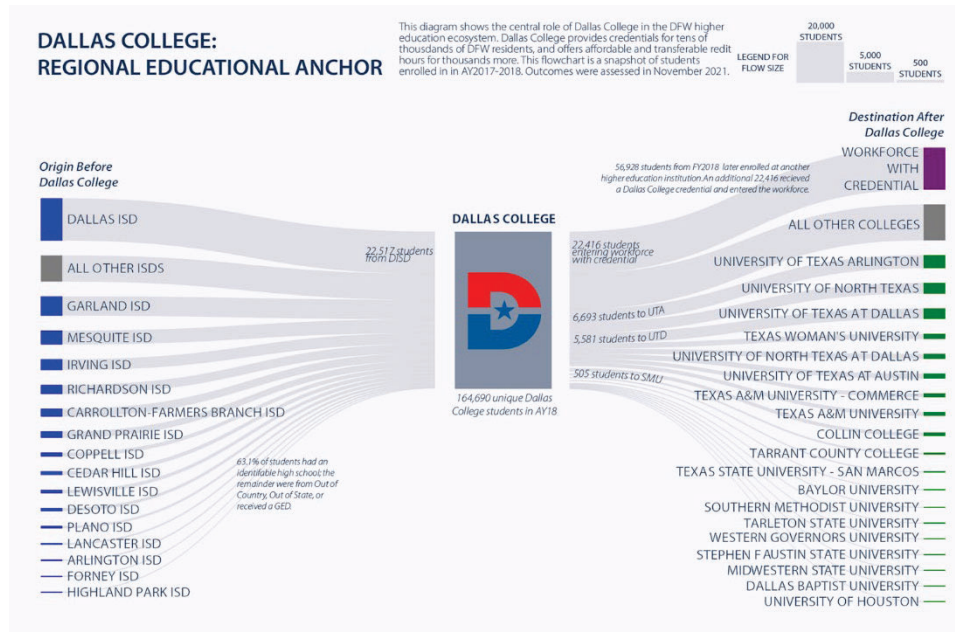
Section 1b: Backbone Organization

Dallas College will serve as the backbone organization for the Project. Founded in 1965, Dallas College offers more than 300 academic and technical degrees, certificates, and workforce development opportunities. Serving more than 100,000 students annually, Dallas College is the largest community college in Texas. Dallas College has **a track record of success** leading projects that coordinate across sectors and currently manages 119 grant projects valuing \$299M. Dallas College has experience in convening industry-focused programs to respond to employer needs. In 2019, Dallas College was awarded \$12M from the Department of Labor (DOL) to scale healthcare apprenticeships and will train 7,500 apprentices by mid-2023. In 2020, Dallas College was awarded an additional \$10M from DOL to leverage resources and training to narrow the skills gap and create opportunities for unemployed, underemployed, and incumbent workers to upskill and reskill into specialized career paths. Dallas College has served as a leading organization in regional economic and workforce development through strategic partnerships and programming by convening educational institutions, industry partners and organizations, workforce development and community support organizations to collaborate and implement projects that support the regional economy and workforce. Dallas College will build on the partnerships established through these and similar projects to lead this Project to **convene the necessary stakeholders**.

Dallas College has established strong partnerships with other institutions of higher education. Dallas College, Tarrant County College, and Paris Junior College recently received \$2M from the Texas Higher Education Coordinating Board to collaborate on information technology pathways, curriculum, and programs. Dallas College is also one of twelve higher education

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members of the Dallas County Promise, led by the Commit Partnership, that addresses the equity gap in higher education completion. Through Dallas County Promise, the partner institutions commit to collaboration and coordinated efforts to help students complete college, transfer into four-year programs, and begin their careers. Dallas College helped lead the state in establishing Texas Reskilling & Upskilling through Education (TRUE) Pathways created in partnership with local technology employers to train candidates for positions in high demand occupations. The Project is designed using the TRUE Pathways framework which begins with a fast-track continuing education certificate tied directly to employment and transfer to credit certificates and degrees.



Dallas College is a designated Hispanic Serving Institution that has a history of success in **reaching underserved workers** through education, training, and support services to transition into high-wage career pathways. The WorkReadyU Program offers adult education programming at no cost to participants, including ESL classes, high school equivalency (GED) preparation, and free career training programs in health care, manufacturing, technology, and other high-demand industries. In 2021, the WorkReadyU program served over 4,500 students of diverse backgrounds: 74% Hispanic, 18% Black, 4% Asian, and 4% White. The program serves more females (78%) than males (22%). Additionally, WorkReadyU targets non-traditional students; the majority (63%) of participants are between the ages of 25-44 and only 35% of the participants have previously completed high school.

Section 2: Partnerships

Section 2a: Employer Leadership and Commitments

Twelve employers in the biotech and health sciences industry were surveyed as part of the grant writing process. Without exception, the employers said they would contribute their expertise to an Industry Advisory Council to assist with curriculum development, candidate recruitment and job placement. Many employers currently offer on-site training to supplement the program developed by the partners. Many of the employers, including hospital systems, offer tuition assistance for employees who wish to continue their education and pursue a degree.

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Additionally, Children’s Health Medical Center, Evolve Biologics, McKesson, Medical City-HCA Healthcare, Tenet Health, Texas Health Resources, and UT Southwestern Medical Center have committed to hiring a combined total of 1,100 entry-level biotech workers trained through this sectoral partnership, providing above-living wages of at least \$15/hour and as well as healthcare, retirement, and other employee benefits.

The partnership will identify additional employer members by activating the healthcare and IT sector networks led by the Dallas Regional Chamber, conducting outreach through Dallas College’s nonprofit coalition and employer outreach programs, partnering with economic development corporations throughout the North Texas Region, and utilizing the networks of existing partnership members to recruit additional employer partners. The Dallas-Fort Worth Hospital Council Education and Research Foundation and BioNTX will also engage in outreach activities within their existing employer networks as well as expanding their reach to engage new employers in the Project. The Industry Advisory Council will serve as the primary mechanism for gaining employer input on the activities of the Project, curriculum development, and future training and education needs.

Absent a strong union presence in Texas, the Texas Workforce Commission and its network of regional Workforce Development Boards often fill the role of representing the worker perspective. All three of the Workforce Development Boards in North Texas have provided letters of support for this Project. Community colleges in Texas maintain strong relationships with the Texas Workforce Commission and its commissioners, including Julian Alvarez III, the Commissioner Representing Labor.

The Project will utilize existing community relationships to provide **skills-based hiring training** for biotechnology employers. The United Way of Metropolitan Dallas’ skills-based training curriculum *Pathways to Work: Skills-based Hiring Lab* provides hands-on training for employers. The United Way and the Dallas Regional Chamber have previously collaborated on delivering this training to Dallas employers through IT industry partnership convenings.

Section 2b: Other Stakeholders and Partnerships

Dallas College will serve as the Backbone Organization for this Sectoral Partnership and will train 500 participants. The key and supporting partners have decades of experience in collaborating to convene industry sector partnerships, coordinate regional workforce and economic development efforts, and reach underserved populations. Key partners include:

- *Collin College*: Community college in Collin County that serves 59,000 credit and continuing education students annually. Will implement biotechnology programs and train 100 participants through the BioWorks for North Texas program, industry-recognized certifications, credit certificates and degrees, and incumbent worker training. Assist in curriculum development and revision, job placement, and industry engagement.
- *Tarrant County College*: Community college in Tarrant County that serves over 46,000 credit students annually. Will implement biotechnology programs and train 100 participants through the Bio Works for North Texas program, industry-recognized certifications, credit certificates and degrees, and incumbent worker training. Assist in curriculum development and revision, job placement, and industry engagement.
- *University of Texas at Arlington*: Carnegie Research 1 institution that serves more than 60,000 students annually in undergraduate and graduate programs. Will implement biotechnology programs and train 100 participants through the BioWorks for North Texas

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program, industry-recognized certifications, credit certificates and degrees, and incumbent worker curriculum. Assist in curriculum development and revision, job placement, and industry engagement.

- *BioNorthTexas (BioNTX)*: Non-profit organization established in 2014 to provide a collaborative forum for the biotechnology community. Will establish and lead the Industry Advisory Committee focused on biomanufacturing and bioinformatics. Will coordinate, recruit, and engage employers in discussions regarding workforce needs, curriculum, and emerging trends. Will collect and share data regarding the biotechnology industry.
- *Dallas-Fort Worth Hospital Council Education and Research Foundation (DFWHCF)*: Non-profit organization that has a unique relationship with more than 90 hospitals and healthcare organizations. DFWHCF works to advance the quality of healthcare in the North Texas Region and will assist with the Industry Advisory Committee with a focus on healthcare employers and clinical lab technician occupations. Will coordinate, recruit, and engage employers in discussions regarding workforce needs, curriculum, and trends and will help promote the program to employers.
- *North Central Texas Council of Governments*: Administrator of the Economic Development District and manages the Comprehensive Economic Development Strategy for the region. Dallas College's Associate Vice Chancellor for Economic Development, Ben Magill, sits on the North Central Texas Economic Development District Board.

These partners will provide targeted support for the Project (see attached **letters of support**):

- *Workforce Solutions for Greater Dallas, Workforce Solutions for North Central Texas, and Workforce Solutions for Tarrant County* will promote the training programs to displaced workers, provide supportive services such as childcare and food assistance to eligible participants, and assist with job placement. The Workforce Boards will represent and advocate for workers to ensure programming meets the needs of the population.
- *Cities of Arlington, Dallas, Farmers Branch, Fort Worth, and Lancaster* will provide support through economic development programs, including providing guidance, technical support, marketing to potential employers and trainees, and publicity/public relations.
- *Dallas Independent School District* will incorporate the BioWorks for North Texas training program into its existing collaboration with Dallas College to make the program accessible to students in the Pathways in Technology Early College High School programs.
- *Dallas Regional Chamber, Garland Chamber of Commerce, North Texas Commission, and United Way of Metropolitan Dallas*: Local organizations that will support the Project by marketing and outreach to employers and potential program participants.
- *Commit Partnership, Communities Foundation of Texas, Educate Texas, Last Mile Education Fund, Lyda Hill Philanthropies, and Tech Titans*: Local organizations that will provide financial assistance, tuition assistance, and other supportive services to trainees and participants in biotechnology programs.
- *National Center for Therapeutics Manufacturing, University of Texas at Dallas*: Institutions of higher education and affiliated centers that will support the Project through educational pathway alignment and development of articulation agreements for biotechnology programs.

Section 3: Regional Description

The region consists of the sixteen counties in the North Central Texas Region economic development district: Collin, Dallas, Denton, Ellis, Erath, Hood, Hunt, Johnson, Kaufman, Navarro, Palo Pinto, Parker, Rockwall, Somervell, Tarrant, and Wise County. Due to existing

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development activity in the biotechnology industry, this Project will focus on Collin, Dallas, and Tarrant Counties as the geographic core of the Project. These three counties represent the highest concentration of existing biotechnology companies and innovation, and approximately $\frac{3}{4}$ of the region's total population. The partners will seek opportunities to expand the BioWorks for North Texas Program through partnership with rural community colleges and employers in those communities once the program is established. The North Texas Region is made up of more than 7.3 million people and the region's civilian labor force is just over half of that at 3.8 million, with a labor force participation rate of 68.8%. The region is growing by approximately 130,200 people each year.

The largest sector in the North Texas Region is Health Care and Social Assistance, employing around 431,000 workers. Of that, more than 129,000 are biotechnology-related occupations that require less than an associate degree, where over 20,000 are medical assistants, more than 12,180 are medical and clinical technologists or technicians, and nearly 3,500 are phlebotomists. In areas where a bachelor's degree is required, 10,000 DFW employees make up natural science managers of some kind within the biotechnology sector. The next largest sectors after Health Care and Social Assistance include Retail Trade (about 383,000 workers), and Professional, Scientific, and Technical Services (about 308,000 workers).

Over the next three years, employment in DFW is projected to expand by approximately 193,300 jobs. Health Care and Social Assistance is expected to be the fastest growing industry sector with a +7.5% growth rate or more than 33,200 jobs, and Healthcare Support Occupations within the Health Care and Social Assistance industry are expected to grow by +9.6%. In the past 12 months, employers have advertised more than 1.4 million jobs in DFW. The industry with the largest need, Health Care and Social Assistance, made up 203,000 of those job postings.

To assess interest in an entry-level biotechnology training program, our Project team surveyed 12 biotechnology employers in North Texas (see table below), including academic medical centers, hospital and healthcare systems, pharmaceutical companies, and life science startups. Employer responses revealed a current demand for entry-level workers in 3 key areas: Clinical Lab Technician (including Medical Lab Technician, Medical Technologist, Surgical Technicians, Imaging Technicians, Research Associate, Research Technician and related occupations); Bioinformatics (including Data Analyst, Data Entry, Database Management and related occupations); and Biomanufacturing (Pharmaceutical Manufacturing Operator, Quality Manager, Biomanufacturing Technician and related occupations). These positions require a high school diploma, but none require a post-secondary degree for an entry-level role. The employers stressed the importance of training that leads to a certificate demonstrating skills mastery.

The employer surveys also revealed that the entry-level positions offer stable, good-paying jobs with all positions starting at an hourly rate at or above \$15/hour, with most in the range of \$30,000-\$60,000 annually. Benefits including paid health insurance and a 401k retirement plan are available to full-time employees, along with opportunities for internal career growth and promotion. Many of the employers offer tuition reimbursement or student loan repayment for employees who wish to pursue additional training that leads to a degree.

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Employer Survey Results			
Employer	Commitment to Hiring	Hiring Needs (next 3 years)	Job Title and Yearly Salary
HCA	400-500	~3,186	Respiratory Therapist: \$52,852-\$84,269 / Medical Lab Technician: \$52,000-\$81,120 / Medical Technologist: \$41,600-\$61,500 / Phlebotomist: \$31,969-\$43,761 / Operating Room Technician: \$49,920-\$68,640 + Benefits, including choice of healthcare, dental, and vision plans; short-term disability coverage; life insurance; 401(k); flexible spending account, tuition reimbursement; student loan forgiveness; legal benefits; pet insurance
UT Southwestern	100	~6,000	Minimum of \$15/hour for entry-level Clinical Lab Assistants, Medical Office Assistants, Medical Technologists, Medical Technicians, Animal Care Attendants, Clinic Staff Assistants, Phlebotomists, Research Associates, and Research Technicians + Full benefits package, including free health insurance
Tenet Health	400	~4,500	Market midpoint rates for Clinical Assistants, Medical Equipment Technicians, and other non-nursing categories + Full benefits package
Texas Health Resources	100	~947	Lab Technician, Medical Assistant, Patient Care Technician: \$31,200+ / Certified Sterile Processing Technician: \$33,467+ / Certified Surgical Technician: \$48,068 + Full benefits package and student loan repayment program
McKesson	100	~500	\$33,000-\$70,000 for Data Science, Clinical Programs Coordination, Clinical Research, Health Services, Biomed Technician + Paid health insurance, matching 401k retirement plan, paid time off, tuition reimbursement
Children's Health	TBD	~200	Lab support specialists: \$41,600 annually Med Tech Lab Scientist: \$53,851-\$86,153 + Full benefits package, health insurance, retirement account, tuition reimbursements, employee assistance program
Evolve Biologics	-	~150	~\$41,600 annually for biomanufacturing technicians, operators, production, and quality control entry-level positions + Paid health insurance, 401(k) retirement plan, bonus
Confidential Response	-	~10	\$60,000+ for entry-level biotech positions + Benefits package, including paid health insurance and 401(k) plan
Confidential Response	-	~8	Scientist: \$75,000 annually / Research Associate: \$40,000 annually Full benefits
Confidential Response	-	~150	\$25-50/hour for Pharmaceutical manufacturing operators, Warehouse managers, Quality managers, Lab technicians + Health insurance
Confidential Response	-	~5	\$60,000-\$85,000 annually for research scientist, chemist, biology researcher + Bonus, stock options
Confidential Response	-	~100	No entry level roles; \$50,000-\$60,000 annually for regulatory affairs, project management, and clinical experts + Health insurance, dental, vision, 401K (match up to 3%), 160 hours of vacation, 11 holidays (currently also have a holiday shutdown), additional leaves
TOTAL	1,100-1,200	~15,756	

The survey found enthusiastic support from the 7 identified employers, who collectively have **signed letters of commitment to hire 1,100-1,200 graduates of the BioWorks for North Texas Program** during a 3-year period. The Project will gain additional hiring commitments from North Texas biotechnology employers throughout the three-year grant period.

The strategic direction set in the **Comprehensive Economic Development Strategy (CEDS)** by the North Central Texas Economic Development District identifies healthcare, high technology, and manufacturing as industry sectors of importance to the region. The Project supports the CEDS goals and objectives for the region and aligns primarily with Goal 1, “Develop a globally competitive skilled workforce that encourages businesses to start, locate, and expand in the North Texas Region” and Goal 2, “Enhances the North Central Texas region’s economic competitiveness.” The Project aligns by designing industry-led training programs to train existing and future workers for a more competitive economic environment, supporting the development of innovation-based industry clusters that create high-wage jobs, and establishing industry-led focus groups to validate career pathways and required certifications and credentials. The Project will provide a workforce talent pipeline that will attract companies looking to relocate to or expand within to the North Texas Region. The talent pipeline is currently the biggest missing piece of the biotechnology industry cluster in North Texas. The region is missing out on job creation opportunities due to the lack of skilled talent required to fill these jobs.

Section 4: Impacts of Regional Workforce Training System

Section 4a: Program Design and Program Implementation

The *Grow a Biotech Workforce in North Texas to Meet Emerging Skill Needs via a Collaborative Partnership* Project will include both **Program Design** and **Program Implementation** phases. The overall goal of the Project and related activity is to build the capacity of the region to quickly transition individuals into good jobs in the biotechnology industry. The North Texas Region experiences extreme inequity in educational attainment and workforce opportunity across underrepresented groups and populations. This Project seeks to address systemic barriers to academic and workforce access and success by engaging partners that have not previously collaborated on this scale to create targeted biotechnology training and employment opportunities. The region has strong players in all areas of economic development, workforce development, and community service with strong histories of success. The Project will create a mechanism and model for coordination and deployment of these resources in support of an emerging industry. The biotechnology industry in North Texas is anchored by key employers such as McKesson, UT Southwestern, Texas Health Resources, and many others. Local investment funded the creation of Pegasus Park, a state-of-the-art research complex focused on innovation and entrepreneurship in biotechnology. The Project seeks to capitalize on the momentum in the biotechnology industry in North Texas as it is currently supported by key philanthropic interests as well as economic and workforce development organizations.

The North Texas Region benefits from an existing and robust workforce training system anchored by key organizations such as the North Central Texas Council of Governments, Workforce Solutions for Greater Dallas, Workforce Solutions for North Central Texas, Workforce Solutions for Tarrant County, community service organizations such as United Way, and a wide array of strong institutions of higher education that provide access to workforce development and educational programming from community colleges through post-doctoral education. Those institutions are represented in this Project by key partners including Dallas College, Collin College, Tarrant County College, University of Texas at Arlington, University of Texas at Dallas, and the University of Texas Southwestern Medical Center. Together these educational institutions and other organizations collaborate to support the economic and workforce development efforts in the North Texas Region.

The key activities in the Program Design and Program Implementation phases include development of an Industry Advisory Committee, Marketing and Community Outreach, Training and Certification Programs, Wraparound Service Platform, Educational Pathway Mapping and Alignment, and Needs Assessment that supports these activities. The timeline below indicates the quarters during which activities will be conducted for both phases.

BioWorks for North Texas Key Activity Timeline

	Year 1				Year 2				Year 3			
	Q1	Q2	Q3	Q4	Q1	Q2	Q3	Q4	Q1	Q2	Q3	Q4
Marketing/Community Outreach												
Training & Certification Programs												
Additive Wrap-Around Services												
Educational Pathways												
Needs Assessment (Gap Analysis)												
Industry Advisory Committee												
Program Design Phase	Program Implementation Phase											

Industry Advisory Committee (IAC): BioNTX and DFWHCF will create a collaborative partnership to engage with biotechnology companies or companies with a significant number of employees in biotechnology occupations. BioNTX will focus primarily on recruiting and engaging employers in the biomanufacturing and bioinformatics sectors of the industry while the DFWHCF will focus primarily on employers in the healthcare sector of biotechnology. BioNTX will create an Industry Advisory Committee (IAC) consisting of the employer partners that have committed to supporting the Project who will meet on a quarterly basis throughout the Project. The DFWHCF will utilize its existing network of healthcare providers to convene meetings and roundtable discussions, encouraging employers to join the IAC or otherwise participate in the IAC. BioNTX will facilitate quarterly meetings to focus on identifying immediate training and hiring needs, career advancement and pathway opportunities, and long-term workforce needs as well as assist in defining eligibility requirements for biotechnology programs. The IAC will continue to meet quarterly or more frequently as needed throughout the Project implementation period to ensure the training curriculum, educational programs, and pathways are developed in alignment with industry needs. At least annually, the IAC and other members of the DFWHCF will convene jointly to discuss emerging or existing needs across the industry. A key responsibility of the IAC and the DFWHCF network is to provide feedback on the BioWorks for North Texas Program after it is implemented to refine the curriculum. These efforts will provide a mechanism for industry to communicate future needs for workforce and educational development to the educational institutions in the region. BioNTX and DFWHCF will meet regularly to share best practices, discuss industry updates, and work collaboratively to scale the reach of the IAC to support the biotechnology industry in the region.

Marketing and Community Outreach: Using a competitive procurement process after the grant is awarded, Dallas College will contract with a marketing firm to identify and implement best practices in communicating information regarding opportunities in biotechnology careers, training, and educational opportunities to underrepresented groups. Through this process, the firm will conduct an analysis and needs assessment to determine the most effective and appropriate strategies for reaching historically underserved populations and communities. The marketing firm will develop and coordinate a marketing and outreach strategy that includes consistent messaging across partners and will increase awareness of biotechnology career opportunities and recruit participants for the continuing education workforce program. The initial phases of recruitment and outreach will begin during the Program Design phase to support launch of the BioWorks for North Texas Program.

Training and Certification Programs: Biotechnology is an emerging industry, and the Project partners recognize that the skills, knowledge, competencies, and certifications needed are still largely undefined. To ensure the Project can adapt to the needs as they are identified, the Project proposes a flexible solution including but not limited to (1) development and implementation of a continuing education workforce program called BioWorks for North Texas that prepares individuals for successful employment in entry-level biotechnology occupations, (2) adoption and deployment of the Biotechnician Assistant Certification Exam credential, (3) development and implementation of incumbent worker training for those already employed in biotechnology fields but seeking career advancement, and (4) identification and adoption of other industry-recognized credentials that can be offered as stand-alone components or integrated into other programs, certificates, and degrees. The IAC will guide the process of curriculum development, identification of training needs, and identification of additional industry-recognized credentials to ensure that key competencies, skills, and knowledge are addressed.

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The BioWorks for North Texas Program will feature a standard curriculum that will be implemented across the higher education partners. In the first 12 months of the Project, Dallas College, Collin College, Tarrant County College, and the University of Texas at Arlington will collaborate with the IAC to develop curriculum for this boot-camp style training program, BioWorks for North Texas. Additional revisions and updates to the program will occur throughout the rest of the Project period to ensure that the program is responsive and accurately addresses the key needs of industry partners. The partner institutions of higher education will work collaboratively to integrate opportunities to apply credit for prior learning for the BioWorks for North Texas Program with the goal that the program would count for credit toward completion of a Level I Certificate or Associate degree in a biotechnology-related field.

Wraparound Service Platform: A review of support services offered by the key partners, community partners, and other organizations revealed that the region benefits from an extensive menu of existing support services. However, most individuals are unaware of the services available and accessible to them. Dallas College has contracted with and utilizes FindHelp.Org as a platform to connect individuals directly with those services. The platform is accessible without a login from any browser. Individuals can search for services by type of service or zip code and find up-to-date information on where services can be accessed, how to access the service, and how to contact the organization for more information. In the first 12 months of the Project, Dallas College will lead the rollout and expansion of this platform through the activities of a new Outreach Coordinator position and through case management services provided by a grant-funded Success Coach. Dallas College will also expand the FindHelp.Org resource and case management to its partner counties if not already in use or available.

Educational Pathway Mapping and Alignment: In the first 18 months of the Project, the partner institutions of higher education will assess existing program offerings, credentials, and degrees to identify current gaps in the existing academic transfer and career development pathways. This assessment will review how individuals at all levels can move through the pathway from entry-level through post-doctoral learning. Employer input will guide and assist in identification of missing steps, entry points, exit points, and credentials. Additionally, the needs assessment will designate gaps in articulation agreements and identify opportunities for the partner institutions to award credit for prior learning.

Section 4b: Alignment with EDA's Recovery and Resilience Investment Priority

Recovery and Resilience: This Project will build economic resilience and reduce the negative impact of future economic shocks by upskilling underserved workers that are vulnerable to future economic downturns and help them transition to stable, higher-wage jobs with more options for mobility within the economy. The investment in biotechnology represented by this Project and the other efforts of organizations in North Texas will further promote the diversification of the local economy and provide a pathway into good jobs in biotechnology.

Equity: COVID-19 negatively impacted Black and Latino populations in North Texas more severely than any other population. This Project will target underserved populations in Dallas, Collin, and Tarrant Counties. The marketing and recruitment efforts will be focused on zip codes in the target counties with a high concentration of underserved populations. Dallas County is 40.8% Hispanic and 23.6% Black. Tarrant County is 29.5% Hispanic and 17.9% Black and Collin County is 15.5% Hispanic and 10.9% Black. Examples of targeted zip codes in Dallas

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County are 75215, 75212 and 75203. Further, a case management strategy will be used to ensure participants are connected with available support services to address barriers to completion.

Workforce Development: The cornerstone of this Project is workforce education and skills training designed in collaboration with employers with commitments from employers to hire. The IAC will provide input and direction on the development of training and education programs, provide feedback on the implementation of those programs, and continue to advise on emerging industry needs to ensure programming remains relevant and responsive.

Technology-Based Economic Development: A highly skilled biotechnology workforce is an integral part of the regional knowledge ecosystem. An educated workforce is necessary to encourage the commercialization of new technologies, patent development, and innovation that lead to a vibrant and innovative economy.

Section 4c: Jobs Available

Twelve employers in North Texas, including academic medical centers, hospital systems and pharmaceutical companies, were surveyed for this grant application. The employer survey identified skill needs in clinical laboratory technician, bioinformatics, and biomanufacturing, requiring more than a high school diploma but less than a 2 or 4-year degree, and expressed a need for individuals trained in essential skills such as communication and teamwork, as well as specialized industry certifications. Collectively, these organizations anticipate hiring thousands of entry-level biotech workers in the next 3 years and have committed to filling 1,100 positions with graduates of the BioWorks for North Texas training program. We anticipate that all 800 graduates of the program over the 3-year grant period will have a job available upon completion of the program. The Project partners will explore the expansion of the BioWorks for North Texas training program to additional community colleges, particularly in rural communities, and continuing education programs in North Texas to meet the growing employer demand.

Strong demand for qualified workers to fill these roles already exists and will continue to grow as the healthcare systems and biotechnology companies in North Texas expand. The demand is reflected in the projected starting salaries, all of which are above the Dallas living wage of \$15/hour, with some starting at \$60,000/year. Employers also offer full-time employees paid health insurance and a 401k retirement plan.

The Project partners have identified **existing and potential leveraged resources** to support the success of the Project, the participants, and the employers. Existing resources include those available through the Adult Education and Literacy programs at the three partner community colleges which provide basic education such as high school equivalency exam preparation or English as a Second Language, supportive services including case management, and tuition assistance. Further, the Project is maximizing existing supportive services offered by the partnering institutions of higher education and community partners by implementing case management that will proactively connect participants with available support services. Potential leveraged resources that could support the work of the Project after the grant period ends include funding for incumbent worker training through the Texas Workforce Commission Skills Development Fund, Workforce Innovation and Opportunity Act training funds for dislocated workers, and employer tuition assistance programs. Dallas College will explore opportunities to support participants and employers through earn-and-learn models including paid internships and apprenticeship programs in the future. Dallas College has demonstrated an ability to secure and manage grant funds and is managing 119 active private and public grant projects with a

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cumulative value of \$299M. The Dallas College Division of Sponsored Programs and Dallas College Foundation will continue to seek opportunities for future funds to support the work of the Project. Dallas College has committed to forgoing indirect costs for this Project to ensure that funding goes directly to the Project for the benefit of participants and employers, an estimated value of \$1,823,445. Lyda Hill Philanthropies has committed \$75,000 to support the Project.

The Project has been carefully designed to target the areas of highest need and greatest potential impact identified in the regional description. A short-term workforce program that is aligned directly with industry needs will allow individuals to quickly train and transition into entry level employment in biotechnology. Partners will develop a pathway for individuals to advance their career once they are employed in the industry. The Project will target recruitment and outreach activities to the most vulnerable and underrepresented groups and communities in the region and provide case management so participants can access the services that will support their success.

Section 4d: Partnership Model

This Project builds on the existing partnerships, organizations, services, and capacity that exists in the North Texas Region and will provide a framework and infrastructure for collaboration, communication, and coordination in a way that is both sustainable and replicable across other industry sectors. The design of this Project adopts and adapts best practices from similar models and efforts across the country such as the National Center for the Biotechnology Workforce in Winston-Salem, North Carolina as well as Texas A&M's National Center for Therapeutics Manufacturing. These examples demonstrate the power and impact of strong and sustainable workforce training ecosystems that leverage public and private resources for the benefit of the region. Other examples of successful Partnership Models in North Texas include the Dallas Thrives initiative as well as the DFW Regional Aerospace Consortium.

Section 4e: Target Demographics of Participants

Much like the rest of the U.S., people of color in North Texas are more likely to be impoverished and are disproportionately employed in the service sector, leaving them vulnerable to future economic downturns. We have taken a data-driven approach to identify the neighborhoods and the participants that could benefit the most from the proposed training Program and collaboration; those potential participants are exactly the customers we serve every day as workforce training providers in North Texas.

Dallas College, Collin College, Tarrant County College, and the University of Texas at Arlington serve a diverse and rapidly growing population with high rates of poverty, low educational attainment, and growing workforce needs. The partners are uniquely positioned to serve this historically underserved population by removing barriers to access and offering successful pathways to community members, including our prospective and current students, and alumni. Over the past two years, Dallas College has significantly invested in new research capabilities to study the barriers that impact our students. The data available includes longitudinal student data, labor market data from BLS and private providers, Census data, property appraisal data, and more. Analytical tools already in use include SPSS, R, Python, PowerBI, and GIS (Geographic Information Systems) from ESRI. Dallas College will continue to deploy its powerful data capabilities to ensure the Project is serving high-poverty, low-resourced zip codes and share findings with partner institutions.

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Utilizing data findings, the Project will target high-poverty, historically underserved zip codes in Dallas, Tarrant, and Collin counties through a variety of community outreach and engagement methods to promote biotechnology as high-wage career pathway with future growth opportunity in North Texas. While the program will be open to any person interested in pursuing a career in biotechnology, we have identified the following target populations to serve through the BioWorks for North Texas Program:

Demographic	Participation Target %
Persons of color	65%
Women	60%
Currently unemployed / out of school	15%
No college degree	92%
Veteran or military spouse	7%
Live in household receiving social assistance	24%

North Texas has a history of economic development that unevenly distributed wealth across the region. Particularly, economic development potential has been stunted by discriminatory housing, education, and environmental policy. Dallas College has conducted in-depth research into the economic conditions in the neighborhoods where our students live. Many students face high housing costs, lengthy commutes to work, limited access to childcare and public transportation, and less access to health care. In the spring of 2020, Dallas College partnered with the Federal Reserve Bank of Dallas to study the impact of occupational segregation in the Dallas-Fort Worth labor market. Through the Dallas Thrives Initiative, Dallas College has worked to develop a systematic approach to double living wage attainment in a single generation. Dallas College aims to address the disparities that impact our students by creating pathways to good jobs and investing in the communities where our students live.

Outcomes of the Project will include the following:

- A total of **800 participants will be enrolled in biotechnology programs** including the BioWorks for North Texas Program, industry-recognized certifications, degrees and certificates in biotechnology fields, and incumbent worker training.
- At least 85% or **680 of the participants who enroll will complete a program**, earning a certificate of completion, industry-recognized credential, and/or degree or certificate.
- At least 95% or **646 of those who complete the program will be employed** or enrolled in further educational programs within 6 months of program completion.
- **Employers have committed to hire 1,100 individuals** into good jobs. The Project team recognizes that there are more jobs available than the partner institutions currently have capacity to educate. The Project partners will make every effort possible to exceed these training targets, increase capacity, and place more individuals in good jobs in biotechnology.
- Project completers should **earn wages of at least \$15 per hour** after obtaining employment
- The training cost per worker is estimated **at \$3,500 per participant**. The Project will use case management to leverage existing available support services.

Section 5: Funding Request and Program Design and Implementation

Section 5a: Funding Request

Dallas College and the key partners in the *Grow the Biotech Workforce in North Texas to Meet Emerging Skill Needs via a Collaborative Partnership* are requesting **\$8,760,995** to implement the Project activities and achieve the deliverables as proposed to support the transition of individuals into high-wage, good jobs in the biotechnology industry in North Texas. Where possible, Dallas College and the key partners have identified **existing or anticipated local leveraged resources** to support the overall success of the Project, the participants, and the biotechnology industry in the region. The requested funding represents gaps in existing funding as well as costs needed to launch new activities in the three-year grant period. The Project was designed to support scalability and sustainability of activities, programs, and initiatives.

Section 5b: Program Design and Program Implementation Project Budget

The project budget will support the six key Project elements throughout the Project Design and Project Implementation phases as well as provide staffing for management of the grant Project.

Staffing Plan: The Project will be implemented with Dallas College as the backbone organization under the leadership of Dr. Pyeper Wilkins, Vice Chancellor of Workforce and Advancement, and Ben Magill, Associate Vice Chancellor for Economic Opportunity. The following staff positions will be grant-funded and hired after the beginning of the Project period:

- 1) Project Director (key personnel): provide project management, budget management, and achievement of activities and deliverables. The Project Director will report directly to Ben Magill and supervise all other grant-funded Dallas College Project staff.
- 2) Project/Partnership Assistant Director: lead data collection and reporting activities and coordinate with the subrecipients/key partners.
- 3) Success Coach: provide case management and support for trainees in biotechnology programs at Dallas College, provide regular check-ins with trainees, and connect participants to Dallas College and other community support service providers for needed support. Will also connect trainees with academic support services to promote equity and success.
- 4) Outreach Coordinator: outreach to community and other partners that provide support services. Coordinate with existing and recruit additional partners. Assist with recruitment of program participants.
- 5) CE (Continuing Education) & Workforce Coordinator: provide day-to-day coordination and support of BioWorks for North Texas programs at Dallas College locations.

To support the activity of the partner organizations in executing the activities of the grant, at least one grant-funded staff position is requested for BioNTX, Collin College, University of Texas at Arlington, and Tarrant County College. DFWHCF has dedicated part-time efforts for 3 key staff for the same purpose. The key partners will meet regularly throughout the Project period to ensure coordination, collaboration, and successful achievement of deliverables.

Marketing & Community Outreach: The Project will secure a contract with marketing specialist(s) via competitive procurement processes to conduct a market needs assessment and design a marketing strategy to reach the underserved target populations through innovative strategies. Funding is requested for the market analysis, development of the marketing strategy, design of materials, and implementation of the marketing plan. Further, the Project is requesting funding for a Community Outreach Coordinator to be hired by Dallas College to coordinate with

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existing partners and recruit new community or other organizations that provide support services. The Project will maximize recruitment of participants through the innovative marketing strategies developed, the combined efforts of community partners in a referral network, and direct recruitment activities conducted in the targeted zip codes.

Training and Certification Programs: The Project will implement multiple entry points for individuals to access the biotechnology career path including the BioWorks for North Texas Program, the Biotechnology Assistant Credentialing Exam certification, incumbent worker training, credit certificates and degrees, and other industry credentials. Funding is requested to support the training and tuition costs associated with these training, academic, and certification programs. The BioWorks for North Texas Program will be the key mechanism for quickly transitioning individuals into good jobs in the biotechnology industry. The Project partners are requesting funding to support curriculum development for this program as well as other training and educational needs that may be identified by the IAC utilizing faculty expertise at the partner institutions as well as through external subject-matter experts. Curriculum development costs include initial development of curriculum as well as establishing a feedback and revision process as industry needs shift. Additional funding is requested for each institution of higher education to purchase instructional supplies and materials to start the program and for a coordinator at each college to manage the program day-to-day and provide logistical support.

Wrap-Around Services: Dallas College is requesting funding to hire a Success Coach to provide case management services for the trainees in the BioWorks for North Texas and other biotechnology programs. The Success Coach will provide regular check-ins to proactively engage with program participants and connect them with services they may need. Dallas College will utilize its existing wrap-around service platform, FindHelp.Org, as a resource to connect individuals with support services. Individuals can search the platform for services by service type or location and find up-to-date information on how to access existing services in the community.

Educational Pathways: Dallas College and the Project partners recognize that a true good job involves opportunities for individuals to learn, grow, and advance along a career pathway. To support the community, the target population, and the biotechnology industry, the partners will participate in a gap analysis process to identify the existing training programs, certifications, degrees, and other professional development opportunities in areas that support the biotechnology industry. The gap analysis will identify any points at which the pathway is not supported by programming, any barriers to students transferring between institutions or programs, and opportunities for providing credit for prior learning or experiences. This work will be led by the Project Director and Program/Partnership Assistant Director at Dallas College, but it will be supported by existing institutional resources including academic and student service leaders at all partner institutions with the goal of creating a seamless educational pathway.

Needs Assessment: The costs associated with conducting the needs assessment component have been integrated into the activities; the Project Director will play an integral role in coordinating these efforts and ensuring the Project remains on track in understanding the needs, gaps, and opportunities for growth to support the target population and biotechnology workforce.

Industry Advisory Committee: The Industry Advisory Committee (IAC) will provide the main pathway for recruiting and engaging industry partners in the Project and curriculum design process. Because biotechnology spans multiple sub-industries, including healthcare, biomanufacturing, and bioinformatics, the IAC will be managed primarily by BioNTX with

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support from the DFWHCF. These two subawardees are requesting funding for staff, travel, and costs associated with hosting the quarterly IAC meetings.

Data Collection and Reporting: The Project/Partnership Assistant Director will take the lead in ensuring the Project staff and partners are actively collecting the required data, tracking students, and reporting on the key metrics as well as progress in implementing the Project. Dallas College has invested heavily in a customer relationship management platform that will be utilized for participant tracking and reporting; no grant funds are requested as this platform exists already. The Project Director will ensure all financial, performance, and impact reports are submitted at least semi-annually and more frequently as required.

Section 5c: Barriers

The Project partners recognize that the needs of the community and training participants will not end when the grant funding does. Therefore, the strategy for wrap-around services was carefully designed to maximize resources, build a sustainable network for referral, address any gaps where services are not already available, and increase awareness of and access to those that are available. The delivery of these services will be leveraged and not charged to the grant Project. Some of those existing resources include transportation passes for students, tuition assistance, food pantries available on campuses and in the community, professional or other clothes closets, childcare assistance, and health services such as low-cost dental clinics, mental health providers, and community health clinics. Existing partnerships with organizations like the North Texas Food Bank, Dallas Area Rapid Transit, City Square, Metro Dallas Homeless Alliance, Metrocrest Services, Catholic Charities of Fort Worth, and the Bezos Academy can be leveraged and expanded to provide support to participants throughout the region.

To improve access to good jobs in the biotechnology industry, Dallas College, Collin College, Tarrant County College, and University of North Texas will explore opportunities to use non-traditional scheduling methods for the BioWorks for North Texas Programs. Options may include night or weekend offerings, online or hybrid courses, classes offered at partner employer locations, and classes offered at various locations in the community. Further, the Project partners will seek other avenues to continue to offset the cost of training and education after the grant period ends such as using Workforce Innovation and Opportunity Act funds to help displaced workers retrain into biotechnology, using the Texas Workforce Commission Skills Development Fund grant to provide incumbent worker training, using Federal Financial Aid for credit programs and certificates, and promoting the use of employer tuition assistance programs for individuals seeking to advance in the career field.