COVER SHEET FOR PROPOSAL TO THE NATIONAL SCIENCE FOUNDATION

PROGRAM ANNOUNCEMENT/SOLICITATION NO./DUE DATE
NSF 21-598 10/05/2023

☐ Special Exception to Deadline Date Policy

FOR NSF USE ONLY
NSF PROPOSAL NUMBER
2400478

FOR CONSIDERATION BY NSF ORGANIZATION UNIT(S) (Indicate the most specific unit known, i.e. program, division, etc.)
DUE - ATE-Small Projects

DATE RECEIVED	NUMBER OF COPIES	DIVISION ASSIGNED	FUND CODE	UEI(Unique Entity Identifier)	FILE LOCATION
10/03/2023	1	11040000 DUE	7412	JMANAG5N2UR9	

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941637174

SHOW PREVIOUS AWARD NO. IF THIS IS
☐ A RENEWAL
☐ AN ACCOMPLISHMENT-BASED RENEWAL

IS THIS PROPOSAL BEING SUBMITTED TO ANOTHER FEDERAL AGENCY? YES ☐ NO ☒ IF YES, LIST ACRONYM(S)

NAME OF ORGANIZATION TO WHICH AWARD SHOULD BE MADE
BUTTE-GLENN COMMUNITY COLLEGE DISTRICT

ADDRESS OF AWARDEE ORGANIZATION, INCLUDING 9 DIGIT ZIP CODE
3536 BUTTE CAMPUS DR
OROVILLE,CA 95965-8303 US

AWARDEE ORGANIZATION CODE (IF KNOWN)

NAME OF PRIMARY PLACE OF PERF
Butte-Glenn Community College District

ADDRESS OF PRIMARY PLACE OF PERF, INCLUDING 9 DIGIT ZIP CODE
3536 BUTTE CAMPUS DR
OROVILLE,CA 95965-8303 US

IS AWARDEE ORGANIZATION (CheckAll ThatApply)
☐ SMALL BUSINESS
☐ FOR-PROFIT ORGANIZATION
☐ MINORITY BUSINESS
☐ WOMAN-OWNED BUSINESS

☐ IF THIS IS A PRELIMINARY PROPOSAL THEN CHECK HERE

TITLE OF PROPOSED PROJECT
SwifTECH

SHOW LETTER OF INTENT ID IF APPLICABLE

REQUESTED AMOUNT	PROPOSED DURATION (1-60 MONTHS)	REQUESTED STARTING DATE	SHOW RELATED PRELIMINARY PROPOSAL NO. IF APPLICABLE
$ 350,000	36 months	07/01/2024	

THIS PROPOSAL INCLUDES ANY OF THE ITEMS LISTED BELOW

☒ TYPE OF PROPOSAL **Research**
◉ COLLABORATIVE STATUS **Non-Collaborative**
☐ BEGINNING INVESTIGATOR
☐ DISCLOSURE OF LOBBYING ACTIVITIES
☐ PROPRIETARY & PRIVILEGED INFORMATION
☐ HISTORIC PLACES
☐ LIVE VERTEBRATE ANIMALS IACUC App. Date _____
PHS AnimalWelfareAssurance Number _____

☒ HUMAN SUBJECTS Human Subjects Assurance Number _____
Exemption Subsection _____ or IRB App. Date **pending**
☐ FUNDING OF INT'L BRANCH CAMPUS OF U.S IHE
☐ FUNDING OF FOREIGN ORGANIZATION OR FOREIGN INDIVIDUAL
☐ INTERNATIONAL ACTIVITIES: COUNTRY/COUNTRIES INVOLVED
☐ POTENTIAL LIFE SCIENCES DUAL USE RESEARCH OF CONCERN
☐ OFF-CAMPUS OR OFF-SITE RESEARCH

PI/PD DEPARTMENT
Industrial Technology

PI/PD POSTAL ADDRESS
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CO-PI/PD				
CO-PI/PD				
CO-PI/PD				

CERTIFICATION PAGE

Certification for Authorized Organizational Representative(or Equivalent)
By electronically signing and submitting this proposal, the Authorized Organizational Representative(AOR) is:(1)certifying that statements made here in are true and complete to the best of the individual's knowledge; and(2)agreeing to accept the obligation to comply with NSF award terms and conditions if an award is made as a result of this proposal. Further, the proposer is hereby providing certifications regarding conflict of interest, flood hazard insurance, responsible and ethical conduct of research, organizational support,and safe and inclusive working environments for off-campus or off-site research, as set forth in the NSF Proposal & Award Policies & Procedures Guide(PAPPG).Willful provision of false information in this application and its supporting documents or in reports required under an ensuing award is a criminal offense(U.S.Code,Title 18,Section §1001).

Certification Regarding Conflict of Interest
The AOR is required to complete certifications stating that the organization has implemented and is enforcing a written policy on conflicts of interest (COI), consistent with the provisions of PAPPG Chapter IX.A; and that, to the best of the individual's knowledge, all financial disclosures required by the conflict of interest policy were made; and that conflicts of interest, if any, were, or prior to the organization's expenditure of any funds under the award, will be, satisfactorily managed, reduced or eliminated in accordance with the organization's conflict of interest policy. Conflicts that cannot be satisfactorily managed, reduced or eliminated and research that proceeds without the imposition of conditions or restrictions when a conflict of interest exists, must be disclosed to NSF via use of the Notifications and Requests module with Research.gov

Certification Regarding Flood Hazard Insurance
Two sections of the National Flood Insurance Act of 1968 (42 USC §4012a and §4106) bar Federal agencies from giving financial assistance for acquisition or construction purposes in any area identified by the Federal Emergency Management Agency (FEMA) as having special flood hazards unless the:
(1) community in which that area is located participates in the national flood insurance program; and
(2) building (and any related equipment) is covered by adequate flood insurance.

By electronically signing the Certification Pages, the Authorized Organizational Representative (or equivalent) located in FEMA-designated special flood hazard areas is certifying that adequate flood insurance has been or will be obtained in the following situations:
(1) for NSF awards for the construction of a building or facility, regardless of the dollar amount of the award; and

(2) for other NSF awards when more than $25,000 has been budgeted in the proposal for repair, alteration or improvement (construction) of a building or facility.

Certification Regarding Responsible and Ethical Conduct of Research (RECR)
(This Certification applies to proposals submitted prior to July 31, 2023, and is not applicable to proposals for conferences, symposia, and workshops.)
By electronically signing the Certification Pages, the Authorized Organizational Representative is certifying that, in accordance with the NSF Proposal & Award Policies & Procedures Guide, Chapter IX.B., the institution has a plan in place to provide appropriate training and oversight in the responsible and ethical conduct of research to undergraduates, graduate students and postdoctoral researchers who will be supported by NSF to conduct research. The AOR shall require that the language of this certification be included in any award documents for all subawards at all tiers.

Certification Regarding Responsible and Ethical Conduct of Research (RECR)
(This Certification applies to proposals submitted on or after July 31, 2023, and is not applicable to proposals for conferences, symposia, and workshops.)
By electronically signing the Certification Pages, the Authorized Organizational Representative is certifying that, in accordance with the NSF Proposal & Award Policies and Procedures Guide, Chapter IX.B., the institution has a plan in place to provide appropriate training and oversight in the responsible and ethical conduct of research to undergraduate students, graduate students, postdoctoral researchers, faculty, and other senior personnel who will be supported by NSF to conduct research. As required by Section 7009 of the America Creating Opportunities to Meaningfully Promote Excellence in Technology, Education, and Science (COMPETES) Act (42 USC 1862o– 1), as amended, the training addresses mentor training and mentorship.The AOR shall require that the language of this certification be included in any award documents for all subawards at all tiers.

Certification Regarding Organizational Support
By electronically signing the Certification Pages, the Authorized Organizational Representative (or equivalent) is certifying that there is organizational support for the proposal as required by Section 526 of the America COMPETES Reauthorization Act of 2010. This support extends to the portion of the proposal developed to satisfy the Broader Impacts Review Criterion as well as the Intellectual Merit Review Criterion, and any additional review criteria specified in the solicitation. Organizational support will be made available, as described in the proposal, in order to address the broader impacts and intellectual merit activities to be undertaken.

Certification Regarding Dual Use Research of Concern
By electronically signing the certification pages, the Authorized Organizational Representative is certifying that the organization will be or is in compliance with all aspects of the United States Government Policy for Institutional Oversight of Life Sciences Dual Use Research of Concern.

Certification Requirement Specified in the William M.(Mac)Thornberry National Defense Authorization Act for Fiscal Year 2021, Section 223(a)(1) (42 USC 6605(a)(1))
By electronically signing the Certification Pages, the Authorized Organizational Representative is certifying that each individual employed by the organization and identified on the proposal as senior personnel has been made aware of the certification requirements identified in the William M.(Mac) Thornberry National Defense Authorization Act for Fiscal Year 2021, Section 223(a)(1) (42 USC 6605(a)(1)).

Certification Regarding Safe and Inclusive Working Environments for Off-Campus or Off-Site Research
(This certification applies only to proposals in which data/information/samples are being collected off-campus or off-site, such as fieldwork and research activities on vessels and aircraft.)
By electronically signing the Certification Pages, the Authorized Organizational Representative is certifying that, in accordance with the NSF Proposal & Award Policies and Procedures Guide, Chapter II.E.9, the organization has a plan in place **for this proposal** regarding safe and inclusive working environments.

AUTHORIZED ORGANIZATIONAL REPRESENTATIVE	SIGNATURE	DATE
NAME **Cheryl A Taylor**	**Electronic Signature**	**Oct 03 2023 06:27 PM**

TELEPHONE NUMBER	EMAIL ADDRESS	FAX NUMBER
530-895-2513	**taylorch@butte.edu**	

Division of Undergraduate Education

Project Data Form

Project Information

Name of Principal Investigator/Project Director: **John Dahlgren**

Name of Primary Organization: **Butte-Glenn Community College District**

SAM Legal Business Name: **BUTTE-GLENN COMMUNITY COLLEGE DISTRICT**

Program Information

Program-track to which the proposal is submitted: **ATE-Small Projects**

Category: **Project--Research on Technician Education (R)**

Prime Organization Information

Highest Degree: **Associate (A)**

Institution Type: **Public (PUBL)**

Project Data

1. Discipline: **Engineering**

   Subdiscipline: **Engineering Technology**

2. Discipline:

   Subdiscipline:

3. Discipline:

   Subdiscipline:

4. Discipline:

   Subdiscipline:

5. Discipline:

   Subdiscipline:

Primary Academic Focus Level: **Lower Division Undergraduate (LO)**

Private Sector Participation: **Yes. The proposed project will have private sector participation (PS).**

Audience(s):

1. **Faculty Professional Development (F)**
2. **Technicians and Technologists (H)**
3. **Underrepresented Minorities (M)**
4.
5.
6.
7.
8.

Strategic Area:

Project Feature(s):

1. **Connections with Business and Industry (5)**
2. **Educational Uses of Technology (3)**
3. **Field Experiences (4)**
4.
5.

Estimated Number of Individuals Involved

Estimated number of individuals in each of the following categories to be directly affected by the activities of the project during its operation:

PreK-12 Students: **0**

PreK-12 Teachers: **0**

Undergraduate Students: **40**

Graduate Students: **0**

Postdoctoral Fellows: **0**

Higher Education Faculty: **7**

Other Organizations

Other Organizations involved in the project's operation:

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PROJECT SUMMARY - *SwifTECH* - Engineering Support Technician Certification Project

Butte College, Butte-Glenn Community College District

NSF-ATE – New to ATE #21-598

Overview

Butte College's *SwifTECH* Engineering Technician Program (henceforth *SwifTECH*) is a New-to-ATE proposal. The goal of *SwifTECH* is to launch a workforce technician education program of stackable credentials in Engineering Support Technician (EST) that supports industry-recognized EST tool certifications with cooperative work-based learning opportunities. Engineering Support Technicians (EST) serve a variety of industries using very sophisticated processing equipment. Employing Engineering Support Technicians (EST) allows directed attention to more important tasks that include autonomous, predictive, and preventive maintenance. *SwifTECH* is a middle-skilled technician workforce program to provide an accessible, affordable, and efficient career pathway for students to become qualified and successful engineering support technicians. The following *SwifTECH* project goals will be pursued:

Goal #1: Formalize and create credit-bearing engineering support technician (EST) certificate program that meets industry expectations.

Goal #2: Prepare students to meet available industry openings through completion of EST certificate program.

SwifTECH will target recruitment and support underserved and underrepresented students, reskilling/upskilling students from industry and military veterans. Project faculty will network with business and industry advisors including those affiliated with the Grow Manufacturing Initiative (GMI) whose purpose is to align and empower companies directed at advanced manufacturing growth, technology advancement and job creation and retention. GMI will facilitate alignment with Butte College while the college will respond with adjustments to curriculum and the hands-on lab learning foundation, support internships and career services, and evaluate the project to inform post-award sustainability.

Intellectual Merit

To advance knowledge in this area, students will have the opportunity to achieve essential technical skills and become Engineering Support Technicians (EST). Because experts from differing industries will be advisors and reviewers of the EST program and its curriculum, this New-to-ATE program is a proof-of-concept providing specialized knowledge, skills, and abilities necessary to prepare students for the demands of the mid-level technical skills workforce necessary in the local food and beverage and distribution industries. At the heart of *SwifTECH* is its engine in experiential internships within affiliated local companies mentored and guided by qualified Internship Mentor Coaches (IMC).

Broader Impacts

Butte College will be the first community college with a dedicated program conferring Engineering Support Technician (EST) postsecondary credentials in Northern California. The supply of technicians *SwifTECH* creates will support businesses to implement EST. *SwifTECH* will pave the way for other colleges to develop similar rapid, industry-informed workforce training programs that emphasize hands-on, workplace-focused lab learning experiences. Students acquiring these credentials and industry-recognized certifications will be prepared to enter a high-wage career with high demand and high projected growth. This will make an important impact on students, the regional economy, and beyond.

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For font size and page formatting specifications, see PAPPG section II.B.2.

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Table of Contents	1	
Project Description (Including Results from Prior NSF Support) (not to exceed 15 pages) **(Exceed only if allowed by a specific program announcement/solicitation or if approved in advance by the appropriate NSF Assistant Director or designee)**	15	
References Cited	2	
Biographical Sketches (Not to exceed 3 pages each)	6	
Budget (Plus up to 5 pages of budget justification. For proposals that contain subaward(s), each subaward must include a separate budget justification of no more than 5 pages)	7	
Current and Pending Support	4	
Facilities, Equipment and Other Resources	1	
Special Information/Supplementary Documents (Data Management Plan, Mentoring Plan and Other Supplementary Documents)	7	
Appendix (List below.) **(Include only if allowed by a specific program announcement/solicitation or if approved in advance by the appropriate NSF Assistant Director or designee)**		
Appendix Items:		

*Proposers may select any numbering mechanism for the proposal. The entire proposal however, must be paginated. Complete both columns only if the proposal is numbered consecutively.

PROJECT DESCRIPTION: *SwifTECH* - Engineering Support Technician Certification Project

Butte College, Butte-Glenn Community College District

NSF-ATE – New to ATE #21-598

I. RESULTS OF PRIOR SUPPORT

SwifTECH Principal Investigator (PI) John Dahlgren and Co-Principal Investigator (Co-PI) Jennifer Bryant are members of Cohort 11 of Mentor-Connect. They have no prior NSF support to report and are applying for a Small Project for Institutions New to ATE.

II. OVERVIEW

The *SwifTECH* Program will establish a new career pathway for students at Butte College (BC), Butte-Glenn Community College District, in emerging and high demand industries. This program will prepare a new mid-level, qualified technician, an Engineering Support Technician (EST). These ESTs will replace the aging maintenance support workforce including millwrights who are retiring at a rate exceeding the rate of succession *(10)*. The EST program will be a combination of BC courses (existing and newly created) and a hands-on internship experience in a real-time industrial employer with an outcome of a certificate of achievement granted by the College, and preparation to take certifications from industry-recognized Manufacturing Skills Standards Council (MSSC) *(17)*. MSSC is an industry recognized organization which specializes in training standards for different technical industries. *SwifTECH* will develop the first EST workforce program in Northern California that will provide technician education through an accessible, affordable, and efficient pathway. The *SwifTECH* EST career pathway will consist of stackable courses and credit-bearing technician education credentials that teach critical skills and prepare students for industry recognized certification exams and employment.

The target of *SwifTECH* is regional manufacturing including agricultural processing, agricultural machinery, and finished food and beverage companies. Today's manufacturing is in dire need of a mid-level technical workforce with qualified knowledge, skills and abilities in mechatronics including mechanical, electrical, and fluid technologies. Many of these technologies are automated, incorporating a need for skills in automation including sensor technologies, programmable logic controllers (PLC) and data transmission and incorporation in enterprise resource planning systems in high intensity supply chain fulfillment. Such technologies streamline and automate repetitive enterprise operations that must be maintained and refined after installation to assure an effective economic value to their companies and product value in the marketplace. The employers of ESTs in today's industrial world do not demand physical strength but technical knowledge. This knowledge allows workflow to be automated, reduces business costs, and provides additional time for technicians to perform more important and complex work.

What We're Doing Now

The BC *SwifTECH* team currently collaborates with industry representatives who are working with the College at a training level, namely the Training Place. The Training Place has two non-credit offerings for local industrial training: Miniskills and The Upskill Academy.

- Miniskills consists of 8 hours of training in mechanical, electrical, shop mathematics applications and blueprint reading. These training courses are aimed at individuals who may have less than 90 days (about 3 months) of experience with their employer, and who need entry level skills training, locally referred to a "Level 1" training. The Miniskills sessions are instructor-led in a classroom environment at the BC's Training Place Center. These sessions are not generally marketed to a public offering but to employers directly and offered twice per year without synchronizing with academic semester offerings.
- The Upskill Academy is targeted training in three offerings: Mechanical Skills, Electrical Skills, and Fluid (hydraulic and pneumatic) Skills. Training is offered to employee cohorts after direct marketing to local industrial employers. The curriculum for the Upskill Academy is taken directly from a comprehensive affiliation with Amatrol eLearning *(1)*. Amatrol eLearning has over 2,500 modules of training in categories including mechanical, electrical, and electronic and fluid technology. Training is delivered in an instructor-led method in a classroom environment at the

Training Place Center. Each area of training is individuated learning through an Amatrol learning management system. A minimum competence level at 80% is required and each segment is 32 hours. Participants have a minimum number of modules to complete.

SwifTECH will leverage the experiences from Upskill Academy's long-standing collaboration with Amatrol by embedding Amatrol modules where appropriate to the certificate course development. Additional content from other curriculum sources such as Net Labs and the National Center for Supply Chain Automation at Norco Community College will be considered for incorporation into our EST program *(8,11,13)*.

Moving Forward with SwifTECH

A persistent call for Miniskills trainings and the Upskill Academy by its participants is: "What else does Butte College offer and do I get college credit for this training?" The answer is that BC has many offerings, but mid-level technical skills base and training are currently non-credit bearing. ***SwifTECH* will change that answer!** A valued and essential part of the *SwifTECH* program, Amatrol eLearning content of the Upskill Academy and the purchase of the simulation equipment will be required for students in a credit-bearing course only available through the *SwifTECH* EST program *(16)*.

At the heart of *SwifTECH* is the industry collaboration using the facilities of our local industry collaborators as the "laboratory." Our primary objective is to establish a cohort of industry-qualified internship mentor-coach (IMC) candidates from host companies to join the *SwifTECH* team. Characteristics and minimum qualifications will be established, and IMC applicants will be interviewed and qualified. Additionally, National Occupational Competency Testing Institute (NOCTI) standards for education professionals will be used to certify IMC applicants, we assure that *SwifTECH* IMCs will have the skills to lead their interns to success. Recognized in over 45 states, NOCTI certified instructors play an essential role in assisting learners in exploring career paths and developing skills to enhance their future. The level one credential is intended for new CTE instructors with two years or less of experience and will be used to qualify the IMCs. The credential topics include student management, instructional delivery, student assessment, employer relationships, and instructional improvement *(14)*.

The basis for the success of *SwifTECH* lies within the nucleus of activities at the host companies together with their IMCs. The outcomes for establishing NOCTI-certified IMCs include successful completion by a minimum of two IMCs at each host company wherein an IMC may be assigned up to two interns for a total of four interns per host company.

As enrolled students in the *SwifTECH* program, they will learn the technical essentials of the EST field and become certification-ready with MSSC-Certified Production Technician (CPT) certification (CPT) ® 4.0 and CPT+ Skill Boss) *(9)*. After completing the technician education program, *SwifTECH* EST completers will be well-positioned for high-wage jobs in a range of industries in the greater Northern California area known as the "North Valley." *SwifTECH* ESTs can enter this lucrative field with less than a bachelor's or associate degree with credible, community college pathway credit AND have access to industry-driven competency-based certifications. While there are efforts at other universities and community colleges in California, there is no college or university in Northern California currently offering a workforce program that fully prepares ESTs to earn industry-recognized certifications and enter the workforce.

About our Institution: Butte-Glenn Community College District

Butte College is a student-ready, rural community college that provides high-quality, accessible education and support. Our career and transfer pathways cultivate curiosity and critical thinking through instruction, workforce training, and the achievement of associate degrees and certificates. Butte College is a Hispanic-Serving Institution (HSI) that affirms its commitment to equity for the diverse, intersectional communities we serve. Located in Oroville, California, in a rural area known as the North Valley, BC serves a two-county service area including Butte and Glenn counties with a combined population of approximately 240,000 residents. Butte College has a primary campus in Oroville with two additional centers 20 miles north in the City of Chico and a third center 40 miles from Oroville in the city of Orland.

Butte College serves a body ethnic diversity of approximately 12,500 full and part-time students. A breakdown of ethnicities that the college serves can be seen in Figure 1 *(7)*.

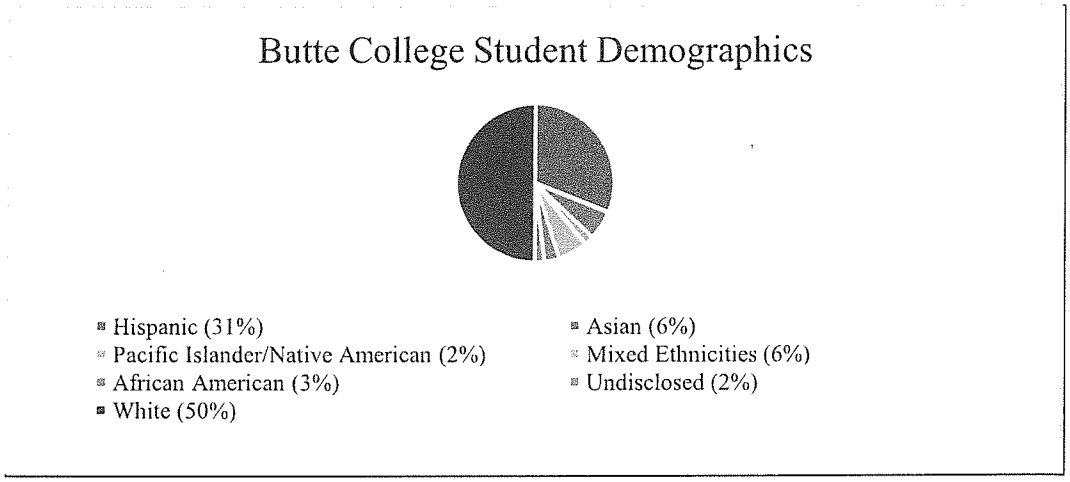


Figure 1 - Butte College Student Demographics

A breakdown of other student and characteristics of Butte and Glenn counties can be seen in Table 1.

Table 1: Student and County (Butte and Glenn) Characteristics *(4,7)*	
Geographical area served	65% Butte County 20% Adjacent and other CA counties 8% Glenn County 1% from outside of CA/International students
Student genders	56% Female 42% Male 2% Non-binary/undisclosed
Student ages	40% 19 years old or younger 29% - 25-49 years old 28% - 20-24 years old 4% - above 49 years old
Median household income	$57,000 per year
Butte/Glenn Co. poverty rate	34% higher than CA average; 29% higher than US average
GDP value for two-county area	$17.2 billon
# of agricultural and associated processing manufacturing jobs	15% of local jobs
Population density	20 persons per square mile (22 minute average commute time)

The significance of the demographic profile of Butte and Glenn Counties is to realize that there is an extremely low-density population. Less than 75 people per square mile in Butte and Glenn Counties combined *(3,4)* exhibit significant commitment to travel to get to work or to school. Many residents of the two-county area live over 20 miles one-way to work or school. Advancing oneself through higher education takes deliberate action and planning. Median income and poverty numbers show that local employers do not typically recruit from out of area for workforce talent. Instead, employers take action to reward loyalty first in wages and the technical skills are amassed from various experiences. Simply put, local employers have very loyal employees without the skills needed to keep pace with the technology requirements in their manufacturing and processing facilities resulting in a mid-level technology technician labor shortage. *SwifTECH* will work with industry to address this shortage.

III. INTELLECTUAL MERIT

Completing this program, students will have the opportunity to acquire essential technical skills and become ESTs. Because experts from a variety of industries will be advisors and reviewers of the EST program and its curriculum, this new program will provide specialized knowledge, skills, and abilities necessary to prepare students for the demands of the mid-level technical skills workforce.

This program will be delivered in modes and via schedules that are accessible to traditional and nontraditional students, including employed students seeking to reskill/upskill into a career in this innovative, advanced technology. At the heart of *SwifTECH* is its engine in experiential internships within affiliated local companies mentored and guided by qualified IMCs.

SwifTECH students will arrive via multiple entry points. Principally they will be students enrolled at BC who finds themselves confronted by "life gets in the way" or disillusioned with the economic drain/difficulty of a lengthy path to a bachelor's degree but find continued passion in technical work. Local industries have historically grown through a loyal workforce's willingness to learn on the job. Such loyalty is novel but is not keeping pace with the levels of sophistication in today's technology-driven manufacturing, processing, and logistics environments. Today's needs demand such technologies to be maintained and optimized in multidisciplinary needs of mechanical, electrical, and fluid technologies. Gone are the days of such loyal millwrights in favor of ESTs educated, coached, and work-ready in an industry-education collaborations, where the demands of mid-level technical work are valued, inclusive, and equitably disseminated.

The BC campus and community's understanding of the great need for workforce development in the mid-level technical skills workforce will be enriched with outreach, media, and public workshops to support the emergent EST workforce. Educators' knowledge and skills will be broadened significantly to incorporate this emerging automation technology. The College has affiliation with Amatrol, a world-recognized leader in multi-industry eLearning and hands-on BC competency-based equipment for entry skill and mid-level technical workforce. In addition, the value of the stackable credentials achieved by the student will be increased with affiliation with MSSC whose testing standards will be used to assure students meet the rigors and demands of industry. Both offer educational materials to be incorporated into the *SwifTECH* offerings at BC. Local industry will be the nucleus of the *SwifTECH* program partnering with BC to establish facilitated and mentored internships. Such internships will demand mentoring and coaching from industry professionals who have the necessary skills to undertake such important work with the students. BC *SwifTECH* will affiliate with NOCTI whose professional educator curriculum and certification will be used to assure that every IMC will be properly equipped to mentor and coach individuals. Students from multiple generations, ethnicities, and experiences, are all coming from a place where guidance is needed most: critical thinking, problem solving and confidence building.

Through presentations at the College and at different venues in the surrounding area, *SwifTECH* information will be distributed to students, the general BC community, and the broader educational and ATE communities. The message will be clear: Success comes from preparation for mid-level technical work where the economic value is measured in the achievement of meaningful work and does not demand high levels of education to enter or succeed.

IV. BROADER IMPACTS

Butte College will be the first community college with a dedicated program conferring EST postsecondary credentials in Northern California. The supply of technicians *SwifTECH* creates will support more small businesses (and businesses of any size) to implement EST. *SwifTECH* will pave the way for other colleges to develop similar rapid, industry-informed workforce training programs that emphasize hands-on, workplace-focused lab learning experiences. Students completing these credentials and industry-recognized certifications will be prepared to enter a high-wage career with high demand and high projected growth and improve career readiness effectiveness. This will make an important impact on students, the regional economy, and beyond. Career readiness is a foundation from which to demonstrate requisite core competencies that broadly prepare the college educated for success in the workplace and lifelong career management (NACE) *(12)* At the conclusion of the project, the team will mentor other North State colleges which may have a similar workforce need. The intent of the *SwifTECH* project is to develop a program that can be replicated across many other disciplines; and, the internship model built into the curriculum, can be integrated in different technician-level disciplines.

V. MOTIVATING RATIONALE

In the two-county service area served by BC, there are multiple employers in the food and beverage business from almonds to walnuts to rice, fruit juices along with beer, wine, and spirits. Each has unique production, processing, manufacturing, and distribution. Growth in each of these areas is often inhibited by a lack of skilled technical workforce and there is a significant need for workers such as machinery maintenance technicians or millwrights.

In 2022, the North-Far North Regional Consortium CA Community College Chancellor's Office identified almost 2,900 jobs in the "middle skill level" (mid-level technical skills) in Northern California matching the middle technical skills needed *(5)*. The report also found over 12,000 EST-related job openings in the US in the past year. Seven out of ten openings have gone unfilled OR are filled by "overskilling" with bachelors degreed engineers. Among companies supporting technician-level work, multiple reports found many of our local companies have operations requiring the exact same skills in our local area compared to the whole of Northern CA.

Figure 2 - Employment by Occupations and Middle Skill Openings (5)

Exhibit A1. Advanced Manufacturing

NFN Sector Employment, 2021	59,544
Annual Middle-Skill Job Openings (2021–26)	2,896
Student Enrollment, 3-Year Average (2018/19–2020/21)	3,098
Average Annual Awards Conferred (2019/20–2021/22)	451

Priority middle-skill occupations:

- 49-9041.00—Industrial Machinery Mechanics
- 17-3023.00—Electrical and Electronic Engineering Technologists and Technicians
- 49-9012.00—Control and Valve Installers and Repairers, Except Mechanical Door
- 17-3029.00—Engineering Technologists and Technicians, Except Drafters, All Other
- 51-9011.00—Chemical Equipment Operators and Tenders
- 49-9044.00—Millwrights
- 49-2094.00—Electrical and Electronics Repairers, Commercial and Industrial Equipment
- 49-9043.00—Maintenance Workers, Machinery
- 17-3013.00—Mechanical Drafters
- 17-3012.00—Electrical and Electronics Drafters

Accelerated learning creates a very focused approach to instruction and is the basis for the *SwifTECH* project. The *SwifTECH* project will prove that students introduced to problem solving and critical thinking will have built confidence in themselves and that they indeed seek to become certified as ESTs. These completers will be prepared to meet the needs of employers in the BC two-county service area and Northern California at large. *SwifTECH* collaborations are based on the latest successful learning research. Hands-on simulation, eLearning, MSSC and NOCTI, along with high-quality academic materials, will be provided in a flexible, multi-modal format to assure comprehension and success.

At this time, there are no certificate, two-year, or four-year programs in far Northern California dedicated to EST education. As a result, when employers are recruiting for entry level positions, they accept far less than they expect in knowledge, skills and abilities and will develop ad-hoc training methods from within. On-the-job or probationary period trainings are common, and phrases like "ability to acquire skills for automation maintenance, PLC, electrical troubleshooting" along with broad qualification statements (degrees OR certifications OR similar experience) indicate that employers must cast a very wide net to fill jobs with specific technical skills *(15)*.

Students with specialized technical skills who obtain industry-recognized certification alone can fill a variety of positions without a bachelor's or associate degree. However, many workers surveyed in the field have a strong desire to leverage their professional achievements with the addition of college coursework. *SwifTECH* targets an educational outcome that will be valuable if the student desires to

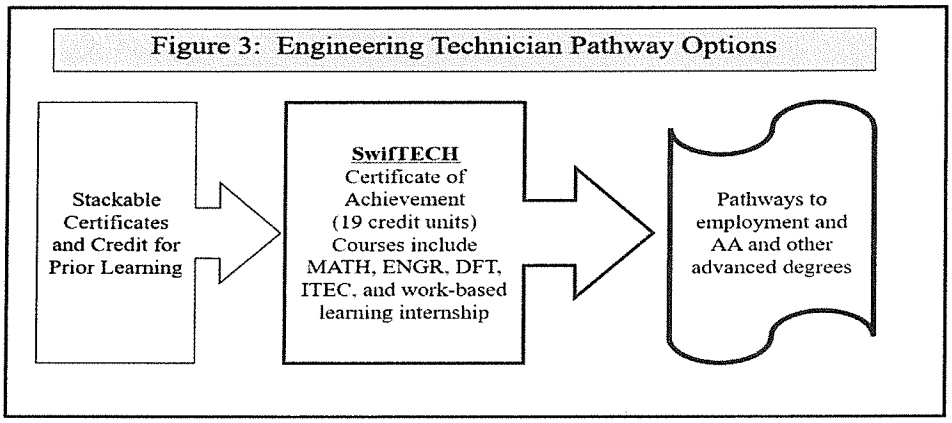
return to school and complete a wider array of degree or transfer options. This is of great value in program recruitment and sustainability. Entry-level base salaries average $45,000 - $50,000 with median salaries at $65,422 and senior-level at $85,877 respectively *(15)*.

The intersection of these circumstances offers the opportunity for *SwifTECH* to emerge with a new model. By leveraging the power of industry collaboration with the resources of identified industrial settings, students will be immersed in an internship opportunity that provides mentoring and coaching. Students will work with an assigned Internship Mentor Coach (IMC) to maximize a hands-on experience that cannot be duplicated in a classroom. This new certificate will meet the demands of the technical, the social and emotional adjustment in today's workforce identified as important by employers for the success and achievement of mid-level technical workers. Educating students using industry settings to solve problems and normalize work expectations in this important field will impact both the students, the workforce, and the community. *SwifTECH* and BC will support students through the education program, facilitate access to industry-recognized certification, and provide career services to connect new EST technicians to the employers who need them.

VI. PROJECT VISION, GOALS, OBJECTIVES, ACTIVITIES, AND OUTCOMES

The vision of the *SwifTECH* project: *SwifTECH is a collaboration of local and regional manufacturing and supply chain industries and community college providing state-of-the-industry learning both in the classroom and in actual work environments.*

This collaborative effort equips the student to meet the industries' need for middle-level technical jobs requiring hands-on mechatronic, mechanical, electrical, and fluid technologies through a certificate program and industry-endorsed certifications. The *SwifTECH* project will develop a workforce program of stackable credentials that encourages industry-recognized certifications and utilizes cooperative work-based learning experiences leading to industry-recognized certification. BC faculty will prepare a credit-bearing college workforce certificate of completion of 19 for-credit units to be completed in two semesters that is stackable to an enhanced Certificate of Achievement that is achievable in one additional, or three total, semesters net of internship duration.



This new-to-ATE funded project will give BC the capacity to deepen its development of college curriculum to align existing STEM and CTE courses with both Amatrol and MSSC learning materials, thereby facilitating certification testing and internship readiness. Additional Butte College faculty from their respective disciplines will aid in the evaluation of courses and changes to curriculum to include credit for prior learning evaluation. Courses will be taught in different modalities (classroom, synchronous or asynchronous Internet, and hybrid) and at convenient times to accommodate traditional (recent high school graduates) and nontraditional students (ages 25+, reskilling or upskilling adults).

Butte College will maximize its reach through local and regional collaborations and workforce investment boards. The project will also leverage potential workforce programs to attract displaced

industry workers. It is important to point out geographic distance, time to complete, and competency-based success will be addressed. Table 2 outlines the goals for the *SwifTECH* program.

Overarching project purpose: Create and implement a certificate program for the EST pathway to meet industry demand for engineering technicians in manufacturing and supply chain industries.

Table 2: *SwifTECH* Goals, Objectives, Activities and Measurable Outcomes		
Goal #1: Formalize and create credit-bearing EST certificate program that meets industry expectations.		
Objectives	**Activities**	**Measurable Outcome**
1.1 Expand existing UpSkill Academy training opportunities by developing a formal college credit bearing EST certificate program.	1.1a: Create one new course, modify existing curriculum, and submit new EST program to college for approval. 1.1b: Integrate MSSC eLearning platform and secure training equipment. 1.1c: Promote the EST Certificate Program.	*Offer BC approved, credit bearing EST certificate program for students by start of Year Two of grant period.*
1.2: Obtain industry recognized certifications that allow BC to offer industry certification exams.	1.2a: Faculty complete MSSC certification training. 1.2b: BC obtains MSSC clearance to provide certification preparation training in: i. Foundational-Level Certified Logistics Associate 4.0 (CLA 4.0) ® Certificate ii. Certified Production Technician (CPT) ® 4.0	
1.3: Qualify a minimum of five (5) industry partner facilities for formal hands-on work-based learning internships.	1.3a: Formalize industry/employer locations and qualify to district expectations where each becomes a member of advising program activities. 1.3b: BC Faculty complete required NOCTI certification training. 1.3c: Select IMCs in collaboration w industry partners. 1.3d: Certify IMCs utilizing NOCTI for education professionals.	
Goal #2: Prepare students to meet available industry openings by completion of EST certificate program.		
Objectives	**Activities**	**Measurable Outcome**
2.1: Outreach to BC students and industry community to participate in and complete the EST program.	2.1a: Create and disseminate EST outreach materials. 2.1b: Conduct outreach events to potential EST students to include BC students and surrounding industry employees including underrepresented, underserved populations. 2.1c: Enroll BC Students and industry incumbent workers. 2.1d: Facilitate internship opportunities and industry recognized MSSC certification. 2.1e: Monitor and advise students for progress in the certificate path. 2.1f: Career/employment skills preparation 2.1g: Disseminate project outcomes.	*a. Enroll a minimum of 20 qualified industry employees and 20 BC students of which 30 are recruited from underrepresented and underserved populations; b. By the end of the grant period, 75% of the students will complete the EST program and be awarded the certificate of achievement.*
Project Overarching Outcome: At the conclusion of the grant, 100% of the students who complete the program will be prepared to take the MSSC certification. Seventy-five percent of EST program completers will be awarded the new EST certificate of achievement.		

The logic model shown on the following page illustrates the demonstration of rationale for the proposed *SwifTECH* project activities and implementation strategies as well as relevant outcomes.

TABLE 3: Butte College SwifTECH Engineering Support Technician Logic Model

Goals: 1) Formalize and create credit-bearing EST certificate program that meets industry expectations., and 2) Prepare students to meet available industry openings through completion of EST certificate program.

Inputs	Strategies/Activities	Outputs	Short Term Midterm Outcomes	Long Term Outcomes
• SwifTECH Project Team • Industry Partners • Faculty /Staff • Facilities • Technology • Funding • BC Training Place • Institutional Research • BC Public Relations Dept. • External Evaluator	• Create new curriculum/certificate program and submit for approval. • Create and disseminate EST outreach materials. • Promote the EST Certificate Program. • Integrate eLearning platform; secure/install simulation equipment. • Faculty complete MSSC/NOCTI training and facilitate Butte College as a site to offer certification exams. • Formalize industry partnerships and student internship locations. • Train industry IMC's utilizing NOCTI certification training. • Recruit/enroll Butte College students and industry incumbent workers. • Facilitate internship opportunities and industry recognized MSSC certification exams. • Monitor and advise students for progress in the certificate path. • Conduct formative and summative evaluations. • Career/employment skills preparation. • Disseminate project outcomes.	• New EST curriculum/ certificate developed & approved • EST outreach materials developed and disseminated • eLearning platform integrated/equipment installed and tested • Faculty certified as MSSC trainers/ • Faculty and IMCs NOCTI trained • BC designated MSSC test site • Train 5 industry professionals to be IMC's for student interns. • Attend/facilitate recruitment events. • Advisory Committee/ • Industry partners meets once per semester • Enroll 20 students in yr. 2 & 20 in yr. 3. • Eval. reports inform improvement	• Increased awareness of new program opportunities for STEM based students and incumbent workers. • Increased number of students completing BC EST for credit certificate program • Increased knowledge of technician education opportunities by students and industry • Increased connections with local employers/industries • Incumbent workers educated within their companies allows for professional advancement. • Industry IMC's educated and provided professional development. • Increase in student success on MSSC exam	**Outcome 1**: Offer BC approved credit bearing EST certificate program for students by start of Year 2 of grant period. **Outcome. 2a**: By the end of the grant period enroll a minimum of 20 qualified industry employees and 20 BC students, 30 are recruited from underrepresented and underserved populations. **Outcome. 2b:** 75% of the students will complete the EST program and be awarded the certificate of achievement.

Assumptions & Contextual Factors

✓Butte College's IT and Public Relations Department will support the EST Certificate Program.

✓Formative and summative evaluation supports continual quality improvement.

VII. TARGET AUDIENCE AND RECRUITMENT

The *SwifTECH* project will be open to all but will target recruitment strategies to support underserved and underrepresented students specifically Latinx/Hispanic students and veterans who represent 31% and 2%, respectively, of our student population *(3)*. Figures 4 and 5 show the ethnic and veteran populations in the two-county service area. These populations may be first-time-in-college or possibly upskilling/reskilling students returning or enrolling from industry positions locally. The project team will collaborate with MESA (Math, Engineering and Science and Achievement), CASA (Center for Access, Success, and Achievement), TRIO Support Services and Veteran's Services Office, which are Campus programs that prioritize underrepresented and underserved students. Recruitment will occur quarterly by holding informational meetings in and disseminating brochures to those student spaces.

Figure 4: Hispanic/Latino – Not Hispanic/Latino Population - Butte and Glenn Counties *(4)*	
Ethnicity	**Two County Total Population**
Not Hispanic or Latino	186,264
Hispanic Latino	50,720
Total	**236,984**
Figure 5: Veteran Population – Butte and Glenn Counties (4)	
War/Action	**Two County Veteran Population**
WWII, Korea, Vietnam, Gulf War I and II	12,231

Incumbent industry employees who have already completed the Miniskills and Upskill Academies through the Training Place will be recruited to continue with their technician education by way of enrolling in the EST certificate program. This recruitment will be completed by discussing the new credit bearing technician certificate with each cohort that completes through the Training Place as well as directly with their employers.

The *SwifTECH* program will be accessible regardless of student/family income. The students enrolled in the EST program will have the same opportunity as all BC students with access to the Butte College Promise Grant and scholarships through the Butte College Foundation. Access to the selected eLearning platform and equipment will be covered by the *SwifTECH* program. The *SwifTECH* project will cover the cost of the MSSC certificate exam for up to 16 students. Taking the exam is optional and not required for the certificate offered by the College, so it is assumed that not all students will want to take the exam.

By incorporating the industry internship into the curriculum, the students see the direct correlation between the education they are receiving and how it translates to the workplace. This model will encourage students to continue and complete the certificate program and possibly give them encouragement to continue their education further. For BC students who do not come from the industry, the internship will give them the opportunity to network with potential future employers. In terms of retention, the very nature of the intended program is built to retain students and bring them to completion.

While progressing through the program, students will be required to meet with faculty members to discuss their progress and keep them on track. *SwifTECH* will have a dedicated study space on campus to create a collaborative environment and a sense of belonging.

VIII. TIMELINE AND COLLABORATIONS

The project team has identified a timeline that the key activities should follow in order to meet the objectives and goals of the proposed *SwifTECH* project. The timeline is shown in Figure 6 below.

Figure 6: SwifTECH Implementation Timeline									
Goals, Objectives and Activities	Year 1			Year 2			Year 3		
	Su	Fa	Sp	Su	Fa	Sp	Su	Fa	Sp
GOAL 1: Formalize EST program that is relevant and of interest to students and meets industry expectations									
Objective 1.1: Expand UpSkill Academy training to create EST certificate program									
1.1.a. Create/modify ATE curriculum; obtain approval	●	●							
1.1.b. Integrate MSSC eLearning platform; secure equipment		●							
1.1.c. Promote EST Certificate Program		●	●	●	●	●	●	●	●
Objective 1.2: Obtain industry recognized certifications to will allow Butte College to offer industry certification exams.									
1.2.a. Faculty complete MSSC training and certifications	●	●							
1.2.b. Butte College obtains MSSC clearance		●							
1.2.b.i. - Offer Foundational-Level Certified Logistics Associate 4.0 (CLA 4.0) Certificate		●				●	●	●	●
1.2.b.ii. - Offer Certified Production Technician (CPT) 4.0		●				●	●	●	●
Objective 1.3: Minimum of five (5) industry partner facilities qualify for hands-on work-based learning internships of a minimum of 240 hours.									
1.3.a. Formalize industry employer locations and qualify to college and district expectations		●	●		●				
1.3.b. Butte College Faculty complete required NOCTI certification training.	●	●							
1.3.c. In collaboration with industry partner companies, select IMC's		●	●			●	●		
1.3.d. Certify IMC applicants utilizing NOCTI for education professionals.		●	●	●	●				
Goal #2: Prepare engineering support technicians to meet industry and workforce needs.									
Objective 2.1: Outreach to Butte College students and industry community to participate in and complete the engineering support technician program.									
2.1.a. Create and disseminate EST outreach materials			●	●	●	●	●	●	●
2.1.b. Conduct outreach to potential students including HS, Butte College and industry employees			●	●	●	●	●	●	●
2.1.c. Enroll 20 Butte College Students and 20 industry partner employees				●	●	●	●	●	●
2.1.d. Facilitate internship opportunities and industry-recognized MSSC certification				●	●	●	●	●	●
2.1.e. Monitor advise students for progress in the certificate path.					●	●	●	●	●
2.1.f. Disseminate project outcomes							●	●	●

SwifTECH Letters of Commitment

Letters of commitment have been received from the following educational and industry partners:

Table 4: *SwifTECH* Letters of Commitment	
Educational and Industry Partners	
Superintendent/President, Butte College	Lundberg Family Farms
The Training Place, Butte College	Andersen & Sons Shelling
Grow Manufacturing Initiative (GMI)	

***SwifTECH* Collaborators and Advisory Committee:** *SwifTECH* will have several collaborators in the form of industry representatives, advisors, and educational partners. The BILT (Business & Industry Leadership Team) model and resources will be used to facilitate industry meetings and to obtain feedback from those collaborators *(6)*. The *SwifTECH* Advisory Committee (SAC) will meet at minimum once per semester and will be comprised of the following individuals shown in the table below. SAC will serve as experts in their respective specialties and will conduct the following: facilitation of effective communication of project goals and activities; reviewing reports/evaluation data; recommending

programmatic adjustments; reviewing/recommending changes in budgets and expenditures and helping to identify additional needed resources.

Table 5: *SwifTECH* Advisory Committee and Collaborators	
Organization	**Project Role**
North/Far North Consortium	Educational research; program review and feasibility recommendations
The Training Place, Butte College	BC training facility: Miniskills and Upskill Academy – recruitment into new credit bearing certificate program
Klein Education	Equipment and eLearning provider
Grow Manufacturing Initiative (GMI)	Manufacturing industry advocacy and program dissemination
Carriere Family Farms, Lundberg Family Farms, Sun West Milling, Anderson & Sons Shelling, Cal-Olive	Hosts for interns, technical and program direction

IX. MANAGEMENT PLAN

The project will be designed and implemented by the Principal Investigator, John Dahlgren, and the Co-Principal Investigator, Jennifer Bryant.

- *SwifTECH* personnel will meet at least bi-weekly for the duration of the project.
- Faculty will meet once a semester with the industry employers to review program successes and areas of improvement. The project team will be implementing the BILT model for facilitating the industry collaboration. Both the PI and Co-PI will enroll in the 2024 session of the Working Partners Workshops to learn best practices of building industry partnerships *(18)*.
- The external evaluator will meet with and provide feedback to *SwifTECH* personnel at least once each semester.

X. ROLES AND RESPONSIBILITIES OF PI, CO-PI'S, AND SENIOR PERSONNEL

PRINCIPAL INVESTIGATOR: John Dahlgren is full-time, tenured faculty at BC in the STEM and CTE areas. In addition to teaching, he is a trainer for the BC Training Place (Contract Education). A manufacturing and mechanical engineer by education and industry experience, John spent 25 years industry in various capacities. He is a lead faculty for Drafting and CAD Technology with over 14 years combined part-time and full-time teaching experience in the program. John comes to BC with over 30 years of manufacturing, construction and small business experience and has been a part of the BC faculty since 1999. John also serves as one of four curriculum specialists for the Butte Glenn Career Pathway Consortium in Engineering and Architecture. In addition, John is coordinator for CTE Transitions Program for Drafting Technology at five area high schools. John has served as an advisor and mentor for MESA (Math Engineering Science Achievement) program at BC and as an advisor and sponsor for FIRST Robotics for Butte Built Bots. He is a board member of IronCAL, the non-profit supporting Butte Built Bots. John has served as a principal investigator for numerous grants including multiple Environmental Protection Agency P3 Competition grants, and US Department of Transportation Dwight D. Eisenhower Transportation Fellowships.

As PI for the *SwifTECH* project, he will direct the academic and curricular components as well as establish and oversee the advisory committee. In particular, he will: lead the project team to implement all objectives, establish an engaged advisory committee, develop the *SwifTECH* project curriculum; secure approvals from college, state, and accreditation authorities; and teach EST courses and labs, supervise onboarding and coordination of internships for students and IMC training oversight, and support the external evaluation of the project and implement refinements based on that evaluation.

CO-PRINCIPAL INVESTIGATOR: Jennifer Bryant, MS, PE, is full-time, tenured faculty in the Engineering Department. She has taught general engineering courses at BC for five years. Prior to teaching, she was a project manager for a civil construction management firm. Her educational degrees

include a bachelor's in civil engineering and a master's in civil engineering: construction. She has experience in curriculum development and working through the program approval process at the College.

As Co-PI, Jennifer will assist the PI in: facilitating meetings with industry partners, aid in the curriculum development and approval process, provide oversight to the project coordinator, share the program with local entities, assist in data collection for evaluations and oversee fiscal and program reporting, with budget oversight.

SENIOR PERSONNEL: Dr. Robert White is the Dean of Instruction for STEM and Guided Pathways. Dr. White is a proud BC alumnus. He holds a Ph.D. in physics from the University of Illinois at Urbana-Champaign, as well as a Master of Science in physics and a Bachelor of Science in both physics and mathematics from California State University, Chico. After completing a prestigious National Science Foundation post-doctoral fellowship at The Scripps Research Institute, where he developed a method to harvest useful information about protein-protein interactions from large genomic databases, Dr. White returned to BC as a physics and engineering instructor and served in that role for 14 years.

As the Dean of Instruction for STEM, Dr. White will supervise *SwifTECH* program personnel during the curriculum development process to include assisting in curriculum committee meetings.

PROJECT COORDINATOR: Upon award notification, the Dean of Instruction will work with other Campus leadership to identify an individual to serve as the project coordinator for the *SwifTECH* project.

Qualifications will include Associates degree or equivalent; three years of experience closely related to the duties and responsibilities; proficiency in Microsoft Office; and experience in working with grant funded projects. Duties include: assisting with outreach and recruiting; disseminating project information to internal BC offices/programs and local high schools; assisting in required reporting duties, data collection, budget support and record keeping; and other duties as assigned by the PI and Co-PI.

XI. PLAN FOR INSTITUTIONAL SUSTAINABILITY

At the conclusion of the grant, approximately 40 students will have completed the *SwifTECH* program. It is expected that eighty percent of those will pass the industry-recognized certification exams. At the conclusion of the grant period and first students completing, the program will be reviewed and refined to facilitate additional course offerings or more internships within the program. The continued level of interest from current and new industry partners will be discussed by the PI, Co-PI and assigned instructors and will have bearing on the scalability of the program (i.e., curriculum, offering more spots to students, additional internship sites, etc.).

The long-term goal of the project is to create an EST associate of science (AS) degree. The funding of this current New to ATE grant to develop the *SwifTECH* certificate program will be the first building block for this AS. The anticipated AS program will include additional coursework and training modules. The development of the new AS will be guided by the findings and ongoing success of this certificate program. Butte College is pursuing the Guided Pathways framework and this technician pathway aligns with the overall vision of creating different pathways for students within the STEM sphere.

XII. EVALUATOR AND EVALUATION PLAN

Evaluator: Upon award notification, the PI will initiate the procurement process for the external evaluator, with support from the Co-PI and Dean of Instruction. At the time of this proposal submission, the team has identified an external evaluator for the project and will need to initiate district procurement processes to secure services. BC procurement procedures meet all Uniform Guidance requirements. The BC Grants Compliance Officer will ensure compliance with any NSF requirements, terms, or conditions. The external evaluator will be responsible for conducting interviews, designing surveys, analyzing data, and providing a comprehensive report for project leadership. The evaluator will assess the achievement of

the objectives, progress towards institutionalization and grant management performance. The following chart details qualifications as well as role and responsibilities of the external evaluator.

Table 6: External Evaluator Qualifications; *SwifTECH* Roles and Responsibilities
Qualifications:
• Experienced with grant evaluation, written formative, and summative reports. • An advanced degree indicating knowledge of higher education leadership, program evaluation, information technology, or another applicable discipline. • Five or more years' experience in program evaluation, using qualitative and quantitative measures. • Evidence of detailed, well-written evaluation reports. • Meets state and local eligibility to become a vendor/contractor for BC; and • One or more references from a comparable client.
***SwifTECH* Role and Responsibilities:**
• Provide feedback on the project's development cycle which includes piloting activities, formative evaluation, modification, implementation, and institutionalization (formative evaluation). • Results documented; data analysis informs decisions/ adjustments. • Complete all formative and summative evaluations as required by internal and external audiences.

The project coordinator, PI, and Co-PI will support the evaluator by supplying project data and coordinating data collection activities with Institutional Research. The external evaluator will meet formally with the PI and Co-PI a minimum of once per semester and will present a mid-year progress report and a year-end report. Focus group, individual interviews and surveys will be developed by the external evaluator.

Evaluation Plan:

The purpose of the evaluation is to give the project team and administration the information necessary to ensure the *SwifTECH* program is an effective workforce technician education program that addresses the needs of the local employers and their current and prospective employees. The external evaluator will be tasked with evaluating whether the program meets its goals and objectives, using both qualitative and quantitative methods. The evaluation will generate findings to 1) support continuous program improvement and 2) examine comprehensive summative results of project outputs and outcomes. Preliminary data will be reviewed at team meetings and modifications made as needed. Evaluation results and reports inform project faculty on need for improvement. The PI will incorporate updates into project plans as needed. At a minimum, evaluation will document and assess planning and implementation of proposed project activities including the following questions:

Table 7: Proposed Evaluation Questions, Indicators, Source, Methods, Timing and Analysis			
Evaluation Question: What is the evidence that a new EST certificate program has been established and implemented at Butte College?			
Indicator	**Data Source/Collection Method**	**Timing**	**Analysis**
Courses reviewed, industry feedback gathered/ incorporated into curriculum, EST Certificate created/approved.	PI/Co-PI provides: Document course review, industry feedback (i.e., meetings with date, attendees and affiliation, minutes reflecting actions); curriculum approval.	Annual review of documentation.	Quantitative comparison of target metric to actual outcomes.
Courses and Certificate are listed in college catalog; courses scheduled by term.	Documentation of course creation in Canvas, courses & certificate inclusion in catalog.	By end of Year 1	Quantitative analysis of course and certificate approval status.

Course content is created and offered in Canvas (BC course management system, supports online learning and teaching).	Documentation of # of students enrolled.	Surveys administered/ data collected via in-person meetings or e-mail.	Qualitative assessment of curricular improvements.
BC becomes MSSC Certification Test Site.	Documentation of # of certificates conferred.	Data collection each semester	Quantitative analysis of certification status
20 students recruited into the first cohort.	Documentation of enrollment.	Data collection begins Yr 2	Quantitative analysis of enrollment data
80% of students enrolled in EST successfully complete.	Evaluator conducts faculty and focus group/individual interviews.	Data collection at end of FA24	Quantitative analysis of completion data.
80% pass MSSC certification	Documentation of # of MSSC certifications achieved.	Data collection at cert. completions	Quantitative analysis of completion data.
Evaluation Question: To what extent does the EST Certificate project result in a successful talent pipeline for technician education from Butte College to Industry?			
Indicator	**Data Source/Collection Method**	**Timing**	**Analysis**
Coordinator (15%) to support recruitment and retention of EST students.	PI/Co-PI provides: Evidence that coordinator is hired and trained. Coordinate and communicate with Evaluator.	By Fall 2024	Qualitative analysis of recruiting / training effectiveness.
Industry Mentor Coaches Identified and Onboarded	Documentation of number and sponsors for industry internships created.	IMC interviews/surveys by semester.	Qualitative assessment of IMC model.
Internship opportunities are available to student	Copies of recruiting materials/websites developed; dissemination channels utilized.	Student interviews/surveys by semester.	Qualitative assessment of Industry Internships.
Recruiting materials developed and implemented	List of events (career fairs, etc.) where EST is promoted, sign-in sheets type of participants (e.g., student, parent, teacher).	Data collection each semester.	Quantitative analysis of enrollment data.
Incoming and current students are recruited into EST program	Evaluator interviews with coordinator, students, and IMCs.	Data collection each semester.	Quantitative analysis of enrollment data
75% of enrolled students are underrepresented	Student ID# compared with institutional records.	Data collection each semester.	Quantitative analysis of enrollment data
Evaluation Question: In what ways and to what extent is curriculum enhanced by offering hands-on industry internships education? What is the impact of hands-on industry internships on student learning and workforce readiness?			
Indicator	**Data Source/Collection Method**	**Timing**	**Analysis**
New simulation equipment (i.e., Skill Boss and eLearning software and equipment) is purchased, setup and tested.	Evaluator site visits, observation, and photography.	Minimum once yearly site visit	Qualitative assessment of curricular improvements and student engagement.
Dissemination by PI/Co-PI	ATE PI Conference, Washington DC	Annual travel to conference	Dissemination discussions and presentation feedback
Faculty trained on Skill Boss and eLearning platform.	Evaluator interviews of faculty and student users.	Student/faculty interviews/surveys each semester.	Qualitative analysis of surveys/ interviews.

Students are proficient with equipment and education when entering the workforce.	Industry/employer surveys or interviews to assess student proficiency and workforce readiness.	Annual industry/employer surveys or interviews.	Qualitative analysis of surveys/ interviews.
Certifications awarded or other asmts. completed demonstrating competencies.	PI/Co-PI provides evidence of education and certificates awarded or other proficiency measures.	Data collection by semester.	Quantitative analysis. Annual progress/ outcomes report.

XIII. DISSEMINATION PLAN

Local Audience: At the local level, the *SwifTECH* team will share their project plan and results with neighboring colleges and industry organizations. The College's Public Relations Office will assist in the development and dissemination of project outreach and recruitment materials including use of appropriate social media sites. Project information will also be shared with incoming students during Orientation as well as included in the College's Guided Pathways framework within the STEM area.
National Audience: On the national level, the team will attend the ATE PI Conference and will share all information to include, but not limited to: final curriculum, industry internship structuring, program literature, and results of student progress and completion. Program PI's will also attend the annual HI-TEC conference in years 2 and 3 of the grant to share the program and report out progress results. All project information will be shared with ATE Central. A project website will be developed utilizing ATE Central's Microsite Service. The website will be updated at least monthly by the project coordinator with project information and progress. ATE Central will also be a resource on further ideas for outreach and dissemination of the project as it develops. At the conclusion of the project, the project team will write and publish an article for the Journal of Advanced Technological Education (J ATE) to share findings of the project's outcome.

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Butte College, Butte-Glenn Community College District
NSF-ATE – New to ATE #21-598

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SUMMARY PROPOSAL BUDGET

YEAR 1

FOR NSF USE ONLY		
PROPOSAL NO.	DURATION (months)	
	Proposed	Granted
AWARD NO.		

ORGANIZATION: Butte-Glenn Community College District

PRINCIPAL INVESTIGATOR / PROJECT DIRECTOR: John Dahlgren

A. SENIOR PERSONNEL: PI/PD, Co-PI's, Faculty and Other Senior Associates (List each separately with title, A.7. show number in brackets)	NSF Funded Person-months CAL	ACAD	SUMR	Funds Requested By proposer	Funds granted by NSF (if different)
1. John Dahlgren - Principal Inv	1.3			16,827	
2. Jennifer Bryant	1.3			14,795	
3.					
4.					
5.					
6. ( ) OTHERS (LIST INDIVIDUALLY ON BUDGET JUSTIFICATION PAGE)	0.0			0	
7. (2) TOTAL SENIOR PERSONNEL (1 - 6)	2.6			31,622	
B. OTHER PERSONNEL (SHOW NUMBERS IN BRACKETS)					
1. (0) POST DOCTORAL SCHOLARS	0.0			0	
2. (5) OTHER PROFESSIONALS (TECHNICIAN, PROGRAMMER, ETC.)	1.25			10,000	
3. (0) GRADUATE STUDENTS				0	
4. (0) UNDERGRADUATE STUDENTS				0	
5. (1) SECRETARIAL - CLERICAL (IF CHARGED DIRECTLY)				11,509	
6. (0) OTHER				0	
TOTAL SALARIES AND WAGES (A + B)				53,131	
C. FRINGE BENEFITS (IF CHARGED AS DIRECT COSTS)				22,194	
TOTAL SALARIES, WAGES AND FRINGE BENEFITS (A + B + C)				75,325	
D. EQUIPMENT (LIST ITEM AND DOLLAR AMOUNT FOR EACH ITEM EXCEEDING $5,000.) SkillBoss $ 28069					
TOTAL EQUIPMENT				28,069	
E. TRAVEL 1. DOMESTIC (INCL. U.S. POSSESSIONS)				6,590	
2. INTERNATIONAL				0	
F. PARTICIPANT SUPPORT COSTS					
1. STIPENDS $ 0					
2. TRAVEL 0					
3. SUBSISTENCE 0					
4. OTHER 0					
TOTAL NUMBER OF PARTICIPANTS (0) TOTAL PARTICIPANT COSTS				0	
G. OTHER DIRECT COSTS					
1. MATERIALS AND SUPPLIES				674	
2. PUBLICATION COSTS/DOCUMENTATION/DISSEMINATION				0	
3. CONSULTANT SERVICES				7,000	
4. COMPUTER SERVICES				0	
5. SUBAWARDS				0	
6. OTHER				0	
TOTAL OTHER DIRECT COSTS				7,674	
H. TOTAL DIRECT COSTS (A THROUGH G)				117,658	
I. INDIRECT COSTS (F&A)(SPECIFY RATE AND BASE) Salary and Fringe Benefits (Rate: 23.9, Base:75325)					
TOTAL INDIRECT COSTS (F&A)				18,003	
J. TOTAL DIRECT AND INDIRECT COSTS (H + I)				135,661	
K. FEE				0	
L. AMOUNT OF THIS REQUEST (J) OR (J MINUS K)				135,661	

M. COST SHARING PROPOSED LEVEL $ 0 AGREED LEVEL IF DIFFERENT $

PI/PD NAME: John Dahlgren

ORG. REP. NAME*: Cheryl A Taylor

FOR NSF USE ONLY		
INDIRECT COST RATE VERIFICATION		
Date Checked	Date Of Rate Sheet	Initials - ORG

*ELECTRONIC SIGNATURES REQUIRED FOR REVISED BUDGET

SUMMARY PROPOSAL BUDGET

YEAR 2

FOR NSF USE ONLY		
PROPOSAL NO.	DURATION (months)	
	Proposed	Granted
AWARD NO.		

ORGANIZATION: Butte-Glenn Community College District

PRINCIPAL INVESTIGATOR / PROJECT DIRECTOR: John Dahlgren

A. SENIOR PERSONNEL: PI/PD, Co-PI's, Faculty and Other Senior Associates (List each separately with title, A.7. show number in brackets)	NSF Funded Person-months CAL	ACAD	SUMR	Funds Requested By proposer	Funds granted by NSF (if different)
1. John Dahlgren - Principal Inv	1.3			17,669	
2. Jennifer Bryant	1.3			15,534	
3.					
4.					
5.					
6. ( ) OTHERS (LIST INDIVIDUALLY ON BUDGET JUSTIFICATION PAGE)	0.0			0	
7. (2) TOTAL SENIOR PERSONNEL (1 - 6)	2.6			33,203	
B. OTHER PERSONNEL (SHOW NUMBERS IN BRACKETS)					
1. (0) POST DOCTORAL SCHOLARS	0.0			0	
2. (0) OTHER PROFESSIONALS (TECHNICIAN, PROGRAMMER, ETC.)	0.0			0	
3. (0) GRADUATE STUDENTS				0	
4. (0) UNDERGRADUATE STUDENTS				0	
5. (1) SECRETARIAL - CLERICAL (IF CHARGED DIRECTLY)				12,326	
6. (0) OTHER				0	
TOTAL SALARIES AND WAGES (A + B)				45,529	
C. FRINGE BENEFITS (IF CHARGED AS DIRECT COSTS)				21,240	
TOTAL SALARIES, WAGES AND FRINGE BENEFITS (A + B + C)				66,769	
D. EQUIPMENT (LIST ITEM AND DOLLAR AMOUNT FOR EACH ITEM EXCEEDING $5,000.) SkillBoss $ 0					
TOTAL EQUIPMENT				0	
E. TRAVEL 1. DOMESTIC (INCL. U.S. POSSESSIONS)				7,891	
2. INTERNATIONAL				0	
F. PARTICIPANT SUPPORT COSTS					
1. STIPENDS $ 0					
2. TRAVEL 0					
3. SUBSISTENCE 0					
4. OTHER 2,000					
TOTAL NUMBER OF PARTICIPANTS (10) TOTAL PARTICIPANT COSTS				2,000	
G. OTHER DIRECT COSTS					
1. MATERIALS AND SUPPLIES				1,250	
2. PUBLICATION COSTS/DOCUMENTATION/DISSEMINATION				575	
3. CONSULTANT SERVICES				9,000	
4. COMPUTER SERVICES				0	
5. SUBAWARDS				0	
6. OTHER				0	
TOTAL OTHER DIRECT COSTS				10,825	
H. TOTAL DIRECT COSTS (A THROUGH G)				87,485	
I. INDIRECT COSTS (F&A)(SPECIFY RATE AND BASE) Salary and Fringe Benefits (Rate: 23.9, Base:66769)					
TOTAL INDIRECT COSTS (F&A)				15,958	
J. TOTAL DIRECT AND INDIRECT COSTS (H + I)				103,443	
K. FEE				0	
L. AMOUNT OF THIS REQUEST (J) OR (J MINUS K)				103,443	

M. COST SHARING PROPOSED LEVEL $ 0 AGREED LEVEL IF DIFFERENT $

PI/PD NAME: John Dahlgren

ORG. REP. NAME*: Cheryl A Taylor

FOR NSF USE ONLY		
INDIRECT COST RATE VERIFICATION		
Date Checked	Date Of Rate Sheet	Initials - ORG

*ELECTRONIC SIGNATURES REQUIRED FOR REVISED BUDGET

SUMMARY PROPOSAL BUDGET

YEAR 3

ORGANIZATION	FOR NSF USE ONLY		
Butte-Glenn Community College District	PROPOSAL NO. 2400478	DURATION (months) Proposed	Granted
PRINCIPAL INVESTIGATOR / PROJECT DIRECTOR John Dahlgren	AWARD NO.		

A. SENIOR PERSONNEL: PI/PD, Co-PI's, Faculty and Other Senior Associates (List each separately with title, A.7. show number in brackets)	NSF Funded Person-months CAL	ACAD	SUMR	Funds Requested By proposer	Funds granted by NSF (if different)
1. John Dahlgren - Principal Inv	1.3			18,552	
2. Jennifer Bryant	1.3			16,311	
3.					
4.					
5.					
6. ( ) OTHERS (LIST INDIVIDUALLY ON BUDGET JUSTIFICATION PAGE)	0.0			0	
7. (2) TOTAL SENIOR PERSONNEL (1 - 6)	2.6			34,863	
B. OTHER PERSONNEL (SHOW NUMBERS IN BRACKETS)					
1. (0) POST DOCTORAL SCHOLARS	0.0			0	
2. (0) OTHER PROFESSIONALS (TECHNICIAN, PROGRAMMER, ETC.)	0.0			0	
3. (0) GRADUATE STUDENTS				0	
4. (0) UNDERGRADUATE STUDENTS				0	
5. (1) SECRETARIAL - CLERICAL (IF CHARGED DIRECTLY)				13,201	
6. (0) OTHER				0	
TOTAL SALARIES AND WAGES (A + B)				48,064	
C. FRINGE BENEFITS (IF CHARGED AS DIRECT COSTS)				22,040	
TOTAL SALARIES, WAGES AND FRINGE BENEFITS (A + B + C)				70,104	
D. EQUIPMENT (LIST ITEM AND DOLLAR AMOUNT FOR EACH ITEM EXCEEDING $5,000.) SkillBoss $ 0					
TOTAL EQUIPMENT				0	
E. TRAVEL 1. DOMESTIC (INCL. U.S. POSSESSIONS)				8,212	
2. INTERNATIONAL				0	
F. PARTICIPANT SUPPORT COSTS					
1. STIPENDS $ 0					
2. TRAVEL 0					
3. SUBSISTENCE 0					
4. OTHER 2,000					
TOTAL NUMBER OF PARTICIPANTS (10) TOTAL PARTICIPANT COSTS				2,000	
G. OTHER DIRECT COSTS					
1. MATERIALS AND SUPPLIES				1,250	
2. PUBLICATION COSTS/DOCUMENTATION/DISSEMINATION				575	
3. CONSULTANT SERVICES				12,000	
4. COMPUTER SERVICES				0	
5. SUBAWARDS				0	
6. OTHER				0	
TOTAL OTHER DIRECT COSTS				13,825	
H. TOTAL DIRECT COSTS (A THROUGH G)				94,141	
I. INDIRECT COSTS (F&A)(SPECIFY RATE AND BASE) Salary and Fringe Benefits (Rate: 23.9, Base:70104)					
TOTAL INDIRECT COSTS (F&A)				16,755	
J. TOTAL DIRECT AND INDIRECT COSTS (H + I)				110,896	
K. FEE				0	
L. AMOUNT OF THIS REQUEST (J) OR (J MINUS K)				110,896	

M. COST SHARING PROPOSED LEVEL $ 0 AGREED LEVEL IF DIFFERENT $

PI/PD NAME	FOR NSF USE ONLY		
John Dahlgren	INDIRECT COST RATE VERIFICATION		
ORG. REP. NAME* Cheryl A Taylor	Date Checked	Date Of Rate Sheet	Initials - ORG

*ELECTRONIC SIGNATURES REQUIRED FOR REVISED BUDGET

SUMMARY PROPOSAL BUDGET

Cumulative

ORGANIZATION	FOR NSF USE ONLY		
Butte-Glenn Community College District	PROPOSAL NO. 2400478	DURATION (months) Proposed	Granted
PRINCIPAL INVESTIGATOR / PROJECT DIRECTOR: John Dahlgren	AWARD NO.		

A. SENIOR PERSONNEL: PI/PD, Co-PI's, Faculty and Other Senior Associates (List each separately with title, A.7. show number in brackets)	NSF Funded Person-months CAL	ACAD	SUMR	Funds Requested By proposer	Funds granted by NSF (if different)
1. John Dahlgren - Principal Inv	3.9			53,048	
2. Jennifer Bryant	3.9			46,640	
3.					
4.					
5.					
6. ( ) OTHERS (LIST INDIVIDUALLY ON BUDGET JUSTIFICATION PAGE)					
7. (2) TOTAL SENIOR PERSONNEL (1 - 6)	7.8			99,688	
B. OTHER PERSONNEL (SHOW NUMBERS IN BRACKETS)					
1. (0) POST DOCTORAL SCHOLARS	0.0			0	
2. (5) OTHER PROFESSIONALS (TECHNICIAN, PROGRAMMER, ETC.)	1.25			10,000	
3. (0) GRADUATE STUDENTS				0	
4. (0) UNDERGRADUATE STUDENTS				0	
5. (3) SECRETARIAL - CLERICAL (IF CHARGED DIRECTLY)				37,036	
6. (0) OTHER				0	
TOTAL SALARIES AND WAGES (A + B)				146,724	
C. FRINGE BENEFITS (IF CHARGED AS DIRECT COSTS)				65,474	
TOTAL SALARIES, WAGES AND FRINGE BENEFITS (A + B + C)				212,198	
D. EQUIPMENT (LIST ITEM AND DOLLAR AMOUNT FOR EACH ITEM EXCEEDING $5,000.)					
TOTAL EQUIPMENT				28,069	
E. TRAVEL 1. DOMESTIC (INCL. U.S. POSSESSIONS)				22,693	
2. INTERNATIONAL				0	
F. PARTICIPANT SUPPORT COSTS					
1. STIPENDS $ 0					
2. TRAVEL 0					
3. SUBSISTENCE 0					
4. OTHER 4,000					
TOTAL NUMBER OF PARTICIPANTS (20) TOTAL PARTICIPANT COSTS				4,000	
G. OTHER DIRECT COSTS					
1. MATERIALS AND SUPPLIES				3,174	
2. PUBLICATION COSTS/DOCUMENTATION/DISSEMINATION				1,150	
3. CONSULTANT SERVICES				28,000	
4. COMPUTER SERVICES				0	
5. SUBAWARDS				0	
6. OTHER				0	
TOTAL OTHER DIRECT COSTS				32,324	
H. TOTAL DIRECT COSTS (A THROUGH G)				299,284	
I. INDIRECT COSTS (F&A)(SPECIFY RATE AND BASE)					
TOTAL INDIRECT COSTS (F&A)				50,716	
J. TOTAL DIRECT AND INDIRECT COSTS (H + I)				350,000	
K. FEE				0	
L. AMOUNT OF THIS REQUEST (J) OR (J MINUS K)				350,000	

M. COST SHARING PROPOSED LEVEL $ 0 AGREED LEVEL IF DIFFERENT $

PI/PD NAME	FOR NSF USE ONLY		
John Dahlgren	INDIRECT COST RATE VERIFICATION		
ORG. REP. NAME* Cheryl A Taylor	Date Checked	Date Of Rate Sheet	Initials - ORG

*ELECTRONIC SIGNATURES REQUIRED FOR REVISED BUDGET

Budget Justification: *SwifTECH* – Engineering Support Technician Certification Project
Butte College, Butte-Glenn Community College District
NSF-ATE – New to ATE #21-598

Table A-C: Personnel	Year 1	Year 2	Year 3	Total
A. Senior Personnel		*5% COLA*	*5% COLA*	
PI – John Dahlgren, AY 10% of 10 mos.	$12,598	$13,228	$13,889	$39,715
Dahlgren – Summer @ 48 hrs.	$ 4,229	$ 4,441	$ 4,663	$13,333
Co-PI Jennifer Bryant, AY 10% of 10 mos.	$11,482	$12,056	$12,659	$36,197
Bryant – Summer @ 48 hrs.	$ 3,313	$3,478	$ 3,652	$10,443
B. Other Personnel				
Faculty: Curriculum Development/Redesign 5 faculty @ 40 hrs. @ $50/hr.	$10,000	$0	$0	$10,000
Project Coordinator (Yrs. 1- 3 @ 15%)	$11,509	$12,326	$ 13,201	$37,036
Sub-Total Personnel	**$53,131**	**$45,529**	**$48,064**	**$146,724**
C. Fringe Benefits				
PI – John Dahlgren (AY)	$ 5,246	$ 5,632	$ 5,784	$16,662
Dahlgren - Summer	$ 948	$ 996	$ 1,046	$ 2,990
Co-PI Jennifer Bryant (AY)	$ 4,990	$ 5,122	$ 5,260	$15,372
Bryant - Summer	$ 743	$ 779	$ 818	$ 2,340
Faculty – Curriculum Development	$ 2,355			$ 2,355
Project Coordinator	$ 7,912	$ 8,711	$ 9,132	$25,755
Sub-Total Fringe Benefits	**$22,194**	**$21,240**	**$22,040**	**$65,474**
Total Personnel (Salary & Fringe Benefits)	**$ 75,325**	**$66,769**	**$70,104**	**$212,198**

A. Senior Personnel -

John Dahlgren, Principal Investigator (effort-all Years: 1 academic months, .3 summer months). PI Dahlgren will direct the academic and curricular components of this project, as well as establish and oversee the advisory team. He will 1) lead the project team to implement all objectives; (2) provide onboarding and coordination of internships for students and IMC oversight; (3) develop the SwifTECH project curriculum; secure approvals from college, state, and accreditation authorities; and teach EST courses and labs; (4) establish an engaged advisory committee; and (5) facilitate the external evaluation of the project and implement refinements based on that evaluation.

Jennifer Bryant, MS, PE, Co-Investigator (effort-all Year: 1 academic months, .3 summer months). Co-PI Bryant will assist the PI in the following: (1) facilitating meetings with industry partners; (2) aiding in the curriculum development and approval process; (3) supervision of the project coordinator; (4) publicizing the program with local industries and agencies; (5) assisting in data collection for evaluations; and (6) overseeing fiscal and program management and reporting, with budget oversight.

B. Other Personnel -

Other Professionals:

Professional Faculty (TBD): (effort-Year 1 only: 1.25 months). In Year 1, five faculty from STEM disciplines will review existing curriculum of courses assigned to proposed EST certificate program and identify and determine credit for prior learning equivalents. Budget

calculated at 5 faculty @ 40 hrs. @ $50/hr.
Project Coordinator (TBD): (effort-Years 1-3: 15%). This individual will assist with recruitment and outreach, data collection and entry, and will provide administrative, budget, reporting and meeting support.

C. Fringe Benefits -
Fringe benefits include workers compensation, FICA, state unemployment insurance (all staff), plus health, dental, and vision insurances, and retirement benefits (professional staff only). For professional staff: WC/FICA/SUI/Other at 11.32%; STRS at 19.1%, PERS at 26.68%; and health insurance is $22,456 in 2023-24. A 5% COLA has been budgeted for Years 2 and 3.

D. Equipment – Funds are requested to purchase one simulation system such as the Skill Boss Manufacturing training and Assessment System for MSSC CPT Plus Certification (CPT+) manufactured by Amatrol, Inc. This assessment system is designed to meet MSSC standards and is a hands-on skill assessment system that integrates seamlessly into any manufacturing program. The Amatrol Skill Boss Model 95-MSB1 and Hand Tool Package Model 33934 including installation, freight, and tax ($28,069.30) will complement the selected e-Learning platform. It will provide hands-on trouble shooting and maintenance to assure the student understands and can demonstrate competence in the subject material. **Total Equipment: $28,069.30**

Total Equipment	Year 1	Year 2	Year 3	Total
Technician simulation equipment i.e., Skill boss	**$28,069**	**$0**	**$0**	**$28,069**

E. Travel (Domestic) - Travel funds are requested for the PI and Co-PI as follows:

- To attend the annual NSF-ATE project directors conference in WA, DC (Years 1-4), includes airfare ($600), hotel ($285/night), food per diem ($66/day), ground transportation (mileage, parking, taxi, etc.) ($240/trip). Note: AACC will cover the cost of registration and 2 nights lodging for PI and Co-PI to attend the annual NSF-ATE conference calculated at $1,389 per person – Years 1-3: $8,334.
- To attend the High Impact Technology Exchange (Hi-TEC) conference (Year 4) to disseminate project results includes Hi-TEC conference fees ($595), airfare ($600), hotel ($285/night), food per diem ($66/day), ground transportation (mileage, parking, taxi, etc.) ($240/trip) calculated at$2,203 per person - Year 3: $4,406.

Additional travel funds are budgeted for the PI to obtain two certifications necessary for project implementation and success:

- NOCTI (National Leader in CTE) Train the Trainer Certification (Year 1) to facilitate industry mentor coach (IMC) training includes NOCTI certification fees ($1,500), airfare ($600), hotel ($285 per night), food per diem ($66/day), ground transportation (mileage, parking, taxi, etc.) ($240/trip). Year 1: $3,460.
- Manufacturing Skill Standards Council (MSSC) (Year 2) to enable Butte College to apply to be a MSSC Assessment Center includes workshop/certification fee ($1,775), airfare ($600), hotel ($285/night), food per diem ($66/day), ground transportation (mileage, parking, taxi, etc.) ($240/trip). Year 2: $4,085.
  Total Conference travel Years 1-3: $20,285.
- Additionally – local mileage expenses are budgeted at $0.685/mi. to cover outreach and recruitment travel expenses to local high schools, employers, and agencies. Local mileage will also cover travel to partner industries to meet with Industry Mentor Coaches and

student participants during internship activities. Local mileage is as follows: Year 1: 515 mi. ($353); Year 2 and 3: 1,500mi./yr. ($1,028/year). **Total local travel Years 1-3: $2,408.**

Total Travel	Year 1	Year 2	Year 3	Total
Conference Travel and Local Mileage	$6,590	$7,891	$8,212	$22,693

F. Participant Support Costs

Registration fees for eight students to take MSSC Certification exam in Years 2 and 3 are included. This cost will cover students who do not have other funding sources to pay for the certification. Some students may opt out of the certification exam as it is not required to complete the EST program. **Total Participant Support Years 2-3: $4,000**

Total Participant Support Costs	Year 1	Year 2	Year 3	Total
MSSC Certification Exam Fee	$0	$2,000	$2,000	$4,000

G. Other Direct Costs

Other direct costs to support project implementation and activities include:

- Administrative/project supplies and dissemination materials. We project that results will be verifiable and provide data that will produce information which will be disseminated through conferences and publication in journals. Projected budget includes funding to cover journal page costs, production of posters for research meetings and dissemination at conferences.
- NOCTI Industry-Mentor Coach workshop materials
- Industry and Outreach Meeting Support

Total for Supplies, Materials, Dissemination and Meeting Support: Years 1-3: $4,324.

Evaluation - The PI will employ an external source to provide evaluation services and input to assure that all phases of grant administration are in accord and compliant with NSF ATE requirements including student and stakeholder input, budget, and dissemination as described in the project description. A budget of $28,000 has been allocated over the three project years to cover evaluation services. Annual budget for evaluation services is projected as follows: Year 1: $7,000, Year 2: $9,000; Year 3: $12,000. **Total Evaluation Years 1-3: $28,000.**

Total Other Direct Costs: $32,324.

Total Other Direct Costs	Year 1	Year 2	Year 3	Total
Administrative/project supplies	$424	$500	$500	$1,424
Dissemination Materials	$0	$575	$575	$1,150
NOCTI IMC workshop materials		$500	$500	$1,000
Industry and Outreach Meeting Support	$250	$250	$250	$750
Evaluation	$7,000	$9,000	$12,000	$28,000
TOTAL Other Direct Costs	$7,674	$10,825	$13,825	$32,324

	Year 1	Year 2	Year 3	Total
Total Direct Costs:	$117,658	$87,485	$94,141	$ 299,284
Total Indirect Costs: (Indirect Costs at 23.9% of salary and fringe benefits)	$18,003	$15,958	$16,755	$ 50,716
Total Costs:	$135,661	$103,443	$110,896	$ 350,000

FACILITIES, EQUIPMENT AND OTHER RESOURCES: *SwifTECH* – Engineering Support Technician Certification Project
Butte College, Butte-Glenn Community College District
NSF-ATE – New to ATE #21-598

FACILITIES:

Computer Lab Space: The *SwifTECH* program will utilize the computer lab (MC 124) in the Media Center building for dedicated class times. This lab houses 24 student workstations and a color printer. All existing courses required for students to complete through the *SwifTECH* program will utilize classrooms either at the Main Campus or the Chico Center Campus in their regularly scheduled rooms. Additionally, a room will be used within the Media Center building (MC 240) to house the technician simulation equipment (i.e., Skill boss).

Office: The principal and co-principal investigators have offices on Butte College's main campus in the Media Center Building (MC 241 and MC 153). They will have access to these offices the duration of the *SwifTECH* project and students of the *SwifTECH* program will be able to meet with them there as needed. There is also access to multiple printers in various rooms within the building. All other project personnel have dedicated office space to support their roles in the program. All project personnel have access to Internet service, e-mail, and telephones to conduct the business of the grant. Secure access to Campus servers is also available for work off site. Additional meeting and conference rooms are available by reservation in several Campus buildings to facilitate meetings with the industry partners/advisory board.

EQUIPMENT:

SwifTECH does require the use of specialized equipment (>$5000 or capitalized) in addition to the facilities, furnishings, and computer resources described above. The project will purchase technician simulation equipment (i.e., Skill boss) to incorporate into the program and course work. Purchase of this piece of simulation equipment is included in the project budget and budget justification.

OTHER RESOURCES:

- The College's Information Technology (IT) Services Department will support *SwifTECH*. BC IT employs specialists who maintain all college computers, keeping all hardware and software up to date and working properly. This includes specialized software installations by request. The IT specialists are available to all faculty, students, and staff through a work order request system. BC IT will provide all *SwifTECH*-required software installations and upgrades in classrooms, labs, library, and project personnel laptops.

Effective 01/30/2023 **NSF BIOGRAPHICAL SKETCH** **OMB-3145-0058**

*NAME John U.Dahlgren *Required fields

ORCID ID (Optional)

*POSITION TITLE CTE Faculty

*PRIMARY ORGANIZATION & LOCATION Butte Community College, Oroville, CA

***PROFESSIONAL PREPARATION - (see PAPPG Chapter II.D.2.h.i.a.3)**

PREVIOUS ORGANIZATION(S) & LOCATION(S)	DEGREE (if applicable)	RECEIPT DATE* (MM/YYYY)	FIELD OF STUDY
California State University, Chico Chico, CA	B.S.	06/1986	Industrial Technology and Manufacturing Engineering
Diablo Valley Community College		09/1981-06/1983	General and Technical Education

Note - For Fellowship applicants only, please include the start date of the Fellowship.

***APPOINTMENTS AND POSITIONS - (see PAPPG Chapter II.D.2.h.i.a.4)**

Start Date - End Date	Appointment or Position Title, Organization, and Location
2010-Present	Faculty, Tenured Butte Community College Industrial Technology Programs Oroville, CA
2015-Present	Trainer, Butte Community College Training Place Contract Education, Oroville, CA
2008-2010	Adjunct Faculty, CA State University Chico, Chico, CA Mechanical Engineering and Advanced Manufacturing
1999-2009	Associate Faculty, Butte Community College Industrial and Technology Programs, Oroville, CA
2009-2010	Trainer, Paton Professional, Chico, CA
2008-2009	Manufacturing Manager, ATK RCBS Manufacturing, Oroville, CA
2006-2008	Director of Regulatory Affairs and Quality Systems, Lares Research, Inc. Chico, CA
2005-2006	Division Construction Coordinator, Pacific Gas and Electric Company, Chico, CA
2002-2005	Director of Regulatory Affairs and Quality Systems, Lares Research, Inc. Chico, CA
2001-2002	Director of Non-Credit Programs, CA State University Chico Regional and Continuing Education, Chico, CA
1999-2001	Owner and Technical Director, Enterprise Technical Services, Chico, CA
1996-1999	Engineering Manager, Norfield Industries, Chico, CA
1991-1996	Product Development Manager, Fleetwood Enterprises, Riverside, CA
1985-1991	Production Supervisor, Fleetwood Motorhomes of CA, Chico, CA

***PRODUCTS - (see PAPPG Chapter II.D.2.h.i.a.5) Products Most Closely Related to the Proposed Project**

2022-2023 MESA Program Interim Director. Managed personnel activities and direct budget responsibilities in excess of $250,000.

2011-2022 Lead Faculty for Butte College MESA (Math Engineering Science Achievement) Program students including creation and development of supplement learning for STEM academic areas, project-based learning and internships and fellowships

2020 Creator of and Technical Trainer for Upskill Academy and MiniSkills Technical Training Programs for Butte College Contract Education

Other Significant Products, Whether or Not Related to the Proposed Project (see PAPPG Chapter II.D.2.h.i.a.5)

2018 Faculty Sustainability Award

2017 Visiting Faculty Internship, Lawrence Livermore National Laboratory, Livermore, CA

2015 Phi Theta Kappa Teacher of the Year Award

***Synergistic Activities - (see PAPPG Chapter II.D.2.h.(i)(a)(6))**

Title: Energy Generation through Gasification of Optimized Rice Hull Biomass
EPA Grant Number: SU836790
Investigators: Dahlgren, John
Institution: Butte College
EPA Project Officer: Page, Angela
Phase: I
Project Period: November 1, 2016 through October 31, 2017
Project Amount: $15,000
RFA: P3 Awards: A National Student Design Competition for Sustainability Focusing on People, Prosperity and the Planet (2016) RFA Text | Recipients Lists
Research Category: Sustainable and Healthy Communities , P3 Awards , P3 Challenge Area - Air Quality

Title: Conversion of Agricultural and Forestry Biomass Residues to Biochar for Carbon Sequestration and Soils
EPA Grant Number: SV839370
Investigators: Dahlgren, John
Institution: Butte College
EPA Project Officer: Page, Angela
Phase: II
Project Period: March 1, 2018 through February 29, 2020 (Extended to February 28, 2022)
Project Amount: $75,000
RFA: P3 Awards: A National Student Design Competition for Sustainability Focusing on People, Prosperity and the Planet - Phase 2 (2017) Recipients Lists
Research Category: P3 Awards

US Department of Transportation Dwight D. Eisenhower Transportation Fellowship Program
Grant Number: 693JJ32345095
Investigator: Dahlgren, John
Institution: Butte College
DOT Project Officer: Jones, LaToya
Project Period: July 2022 through June 2023
Research Category: Transportation Engineering

***Certification**:

When the individual signs the certification on behalf of themselves, they are certifying that the information is current, accurate, and complete. This includes, but is not limited to, information related to domestic and foreign appointments and positions. Misrepresentations and/or omissions may be subject to prosecution and liability pursuant to, but not limited to, 18 U.S.C. §§287, 1001, 1031 and 31 U.S.C. §§3729-3733 and 3802.

Signature
(Please type out full name): John U. Dahlgen Date: 09/24/2023

Effective 01/30/2023 **NSF BIOGRAPHICAL SKETCH** **OMB-3145-0058**

*NAME Jennifer L. Bryant *Required fields

ORCID ID (Optional)

*POSITION TITLE Engineering Faculty

*PRIMARY ORGANIZATION & LOCATION Butte Community College; Oroville, CA

***PROFESSIONAL PREPARATION - (see PAPPG Chapter II.D.2.h.i.a.3)**

PREVIOUS ORGANIZATION(S) & LOCATION(S)	DEGREE (if applicable)	RECEIPT DATE* (MM/YYYY)	FIELD OF STUDY
California State University, Chico Chico, CA	B.S.	06/2009	Civil Engineering
University of Washington Washington	M.S.	06/2015	Civil Engineering - Construction Engineering

Note - For Fellowship applicants only, please include the start date of the Fellowship.

***APPOINTMENTS AND POSITIONS - (see PAPPG Chapter II.D.2.h.i.a.4)**

Start Date - End Date	Appointment or Position Title, Organization, and Location
2019-Present	Engineering Faculty - Tenure Butte Community College Engineering Department Oroville, CA
2018-2019	Associate Faculty Butte Community College Engineering Department Oroville, CA

***PRODUCTS - (see PAPPG Chapter II.D.2.h.i.a.5) Products Most Closely Related to the Proposed Project**

N/A

Other Significant Products, Whether or Not Related to the Proposed Project (see PAPPG Chapter II.D.2.h.i.a.5)

N/A

***Synergistic Activities - (see PAPPG Chapter II.D.2.h.(i)(a)(6))**

2022 - Submitted revised engineering curriculum to Butte College Curriculum Committee for approval - approved

2022 - Submitted new engineering courses to Butte College Curriculum Committee for approval - approved

***Certification**:

When the individual signs the certification on behalf of themselves, they are certifying that the information is current, accurate, and complete. This includes, but is not limited to, information related to domestic and foreign appointments and positions. Misrepresentations and/or omissions may be subject to prosecution and liability pursuant to, but not limited to, 18 U.S.C. §§287, 1001, 1031 and 31 U.S.C. §§3729-3733 and 3802.

Signature
(Please type out full name): Jennifer L. Bryant Date: 02/20/2023

Other Personnel Biographical Information

Data Not Available

Effective 01/30/2023 NSF CURRENT AND PENDING (OTHER) SUPPORT OMB-3145-0058

*Name: John U. Dahlgren

ORCID ID (Optional):

*Position Title : Principal Investigator / Faculty

*Organization: Butte College, Butte-Glenn Community College District

*Location: Oroville, CA 95965

Certification:

When the individual signs the certification on behalf of themselves, they are certifying that the information is current, accurate, and complete. This includes, but is not limited to, information related to current, pending, and other support (both foreign and domestic) as defined in 42 U.S.C. §§6605. Misrepresentations and/or omissions may be subject to prosecution and liability pursuant to, but not limited to, 18 U.S.C. §§ 287, 1001, 1031 and 31 U.S.C. §§3729-3733 and 3802.

Signature
(Please type out full name): John Ulf Dahlgren Date: 09/15/2023

***Required fields**

Note: NSF has provided 15 project/proposal and 10 in-kind contribution entries for users to populate. Please leave any unused entries blank.

Projects/Proposals Section:

According to 42 U.S.C. §§ 6605, Current and Pending (Other) Support (A) means all resources made available, or expected to be made available, to an individual in support of the individual's research and development efforts, regardless of (i) whether the source of the resource is foreign or domestic; (ii) whether the resource is made available through the entity applying for a research and development award or directly to the individual; or (iii) whether the resource has monetary value; and (B) includes in-kind contributions requiring a commitment of time and directly supporting the individual's research and development efforts, such as the provision of office or laboratory space, equipment, supplies, employees, or students. If the time commitment or dollar value is not readily ascertainable, reasonable estimates should be provided.

Projects/Proposals

1.*Project/Proposal Title : SwifTECH

*Status of Support : ○ Current ◉ Pending

Proposal/Award Number (if available):

*Source of Support: National Science Foundation - New to ATE

*Primary Place of Performance : 3536 Butte Campus Dr., Oroville, CA 95965

*Project/Proposal Start Date (MM/YYYY) : 07/2024

*Project/Proposal End Date (MM/YYYY) : 06/2027

*Total Award Amount : $ 350,000.00

*Person-Month(s) (or Partial Person-Months) Per Year Committed to the Project

If the time commitment is not readily ascertainable, reasonable estimates should be provided.

*Year (YYYY)	*Person Months (##.##)	Year (YYYY)	Person Months (##.##)
1. 2024	1.30	4.	
2. 2025	1.30	5.	
3. 2026	1.30		

*Overall Objectives : The SwifTECH engineering support technician career pathway will consist of stackable courses and credit bearing technician education credentials that teach critical skills and prepare students for certification exams and employment or surety of continued employment.

*Statement of Potential Overlap :

Effective 01/30/2023 NSF CURRENT AND PENDING (OTHER) SUPPORT OMB-3145-0058

*Name: Jennifer L. Bryant

ORCID ID (Optional):

*Position Title : Co-Principal Investigator / Faculty

*Organization: Butte College, Butte-Glenn Community College District

*Location: Oroville, CA 95965

Certification:

When the individual signs the certification on behalf of themselves, they are certifying that the information is current, accurate, and complete. This includes, but is not limited to, information related to current, pending, and other support (both foreign and domestic) as defined in 42 U.S.C. §§6605. Misrepresentations and/or omissions may be subject to prosecution and liability pursuant to, but not limited to, 18 U.S.C. §§ 287, 1001, 1031 and 31 U.S.C. §§3729-3733 and 3802.

Signature
(Please type out full name): Jennifer L. Bryant Date: 08/22/2023

***Required fields**

Note: NSF has provided 15 project/proposal and 10 in-kind contribution entries for users to populate. Please leave any unused entries blank.

Projects/Proposals Section:

According to 42 U.S.C. §§ 6605, Current and Pending (Other) Support (A) means all resources made available, or expected to be made available, to an individual in support of the individual's research and development efforts, regardless of (i) whether the source of the resource is foreign or domestic; (ii) whether the resource is made available through the entity applying for a research and development award or directly to the individual; or (iii) whether the resource has monetary value; and (B) includes in-kind contributions requiring a commitment of time and directly supporting the individual's research and development efforts, such as the provision of office or laboratory space, equipment, supplies, employees, or students. If the time commitment or dollar value is not readily ascertainable, reasonable estimates should be provided.

Projects/Proposals

1.*Project/Proposal Title : SwifTECH Project

*Status of Support : ○ Current ◉ Pending

Proposal/Award Number (if available):

*Source of Support: National Science Foundation - New to ATE

*Primary Place of Performance : 3536 Butte Campus Dr., Oroville, CA 95965

*Project/Proposal Start Date (MM/YYYY) : 07/2024

*Project/Proposal End Date (MM/YYYY) : 06/2027

*Total Award Amount : $ 350,000.00

*Person-Month(s) (or Partial Person-Months) Per Year Committed to the Project

If the time commitment is not readily ascertainable, reasonable estimates should be provided.

*Year (YYYY)	*Person Months (##.##)	Year (YYYY)	Person Months (##.##)
1. 2024	1.30	4.	
2. 2025	1.30	5.	
3. 2026	1.30		

*Overall Objectives : The SwifTECH engineering support technician career pathway will consist of stackable courses and credit bearing technician education credentials that teach critical skills and prepare students for certification exams and employment or surety of continued employment.

*Statement of Potential Overlap :

Table 1

1	Your Name:	Your Organizational Affiliation(s), last 12 mo	Last Active Date
	Dahlgren, John U.	Butte College, Butte-Glenn Community College District, Oroville, CA	

Table 2

2	Name:	Type of Relationship	Optional (email, Department)	Last Active Date
R				

Table 3

3	Advisor/Advisee Name:	Organizational Affiliation	Optional (email, Department)
G			
T			

Table 4

4	Name:	Organizational Affiliation	Optional (email, Department)	Last Active Date
A				
C	Ms. LaToya Jones, Program Manager	US Department of Transportation	latoya.jones@dot.gov	01/03/23
C	Dr. Angela Page, Program Officer	US Environmental Protection Agency	page.angelad@epa.gov	06/30/23
C	Mr. Steven A. Feher, Technical Director	Butte College Contributor, US EPA P3 Grants	sifeher@scdinstitute.org	03/23/23

Table 5

5	Name:	Organizational Affiliation	Journal/Collection	Last Active Date
B				
E				

Table 1

1	Your Name:	Your Organizational Affiliation(s), last 12 mo	Last Active Date
	Bryant, Jennifer L.	Butte College, Butte-Glenn Community College District, Oroville, CA	

Table 2

2	Name:	Type of Relationship	Optional (email, Department)	Last Active Date
R				

Table 3

3	Advisor/Advisee Name:	Organizational Affiliation	Optional (email, Department)
G			
T			

Table 4

4	Name:	Organizational Affiliation	Optional (email, Department)	Last Active Date
A				
C				

Table 5

5	Name:	Organizational Affiliation	Journal/Collection	Last Active Date
B				
E				

Data Management Plan: *SwifTECH* - Engineering Support Technician Certification Project
Butte College, Butte-Glenn Community College District
NSF-ATE – New to ATE #21-598

Butte College, Butte-Glenn Community College District will conform to NSF's policy to disseminate and share results of the proposed project. The results will be archived at ATE Central. The following materials will be available for dissemination:

- The curriculum outline, case study materials, and datasets produced as part of the certificate program will be available in a secure project-assigned cloud server and will be managed by the Engineering Program and STEM area administration. All the datasets will be anonymized if not public before they can be disseminated.
- The project leaders will attend national and regional conferences such as HI-TEC Conference and ATE-PI Conference to present the results of the project.
- The data analysis modules created by the participant faculty will be open source and made available to the public online.
- All the training materials related to promotion, recruitment, and assessment tools will be disseminated at local and national conferences.
- The outline of the EST certificate program created based on the findings of this project and with input from the BILT will be available online.

The datasets used in the EST certificate internship case studies will include only public or anonymized data. They will be stored in a project-assigned cloud server and will be managed by the Engineering Program and STEM area administration. The data generated could be of various formats: binary, text, image, video, virtual machine image files. The nature of the project does not specify a specialized data type since it addresses analysis of unstructured big datasets of any format. The datasets will be stored along with its metadata that describe the data itself and how to utilize it. The Co-PI will be responsible for the representation of these datasets into the public. All the datasets and the software/algorithmic solutions generated by this project will be in the sole property of Butte-Glenn Community College District.

Any image, video or audio recording taken during this project will comply with the current Butte-Glenn Community College District Privacy Policy and IRB requirements.

Data collection will be done through surveys with students, participating faculty, and IMCs. Students' personal identifiable information will be protected, per FERPA regulations, and all reports will be done in aggregate. The collected data will be kept in encrypted USB as well as through a database on the secure project server maintained by the Co-PI. Data will be available only to the project personnel and the NSF. This will be done in compliance with the Butte-Glenn Community College District Board policies and procedures, Statement of Privacy, and IRB requirements. Once the IRB approval is obtained, it will be shared with NSF. The access to folders where the public datasets and project materials will be managed via user/group privileges and in compliance with IRB requirements. The data will be preserved for three years after the completion of the project and longer if the project is continued with another ATE grant.

The financial documentation will be maintained and secured by the Office of Business Services within Butte-Glenn Community College District.

BUTTE COLLEGE

September 25, 2023

John Dahlgren, PI/Jennifer Bryant Co-PI
NSF ATE Project
Butte College
3536 Butte Campus Dr.
Oroville, CA 95965

Dear John and Jennifer:

On behalf of Butte-Glenn Community College District, I am pleased to provide this letter of commitment to the application being prepared under the National Science Foundation's Advanced Technological Education (ATE) Program (NSF 21-598).

For more than fifty years, Butte College has been one of our area's leading sources of affordable quality postsecondary education for the communities we serve. As a designated Hispanic Serving Institution, Butte College is committed to expanding postsecondary educational opportunities and improving academic attainment not only for our Hispanic students, but for all underserved students.

Butte College is eager to implement all necessary activities detailed in its ATE application in support of our proposed project. I am confident that with this funding, our project will become a leader in the North State in preparing Engineering Support Technicians (EST) to enter or advance in high-demand industries. As you point out in your application, no such program exists in Northern California and is much needed to train the types of skilled employees our employer-partners require. Moreover, proposed activities will assist students to transfer and continue their education should that be their objective. I applaud the work you have done as part of ATE's Cohort 11 of Mentor-Connect.

As Superintendent/President, I commit to the following to support your work:

- Direct access to me for collaboration with you on programmatic needs
- Assignment of the Vice President for Instruction as direct supervisor and faculty liaison
- Access to my entire Leadership Team so they can provide needed support to this project.
- Full program status and rights
- Office facilities, classroom space, campus security and facilities support
- Data collection and analysis provided by Office of Institutional Research
- Ensuring the sustainability of the EST Certificate program beyond the grant award

Congratulations on your hard work to design and formulate a thorough plan resulting in an outstanding proposal on behalf of our students. I look forward to hearing that your efforts are successful.

Sincerely,

Virginia L. Guleff

Virginia L. Guleff
Superintendent/President

BUTTE COLLEGE

September 27, 2023

John Dahlgren, PI/Jennifer Bryant Co-PI
NSF ATE Project
Butte College
3536 Butte Campus Dr.
Oroville, CA 95965

Dear John and Jennifer:

I offer this letter of Butte College The Training Place's strong commitment to the development of an Engineering Support Technician (EST) project.

The mission of Butte College The Training Place is to respond to community needs by providing performance improvement solutions resulting in economic development, sustainability, and growth. For over fifteen years, we have demonstrated our commitment by listening to Manufacturing industry needs as a facilitator of the North Valley Lean Group, founding member of the Grow Manufacturing Student Employer Expo receiving the 2015 CALED Award of Excellence and providing rapid response and targeted employer training plans to meet workforce training needs. In partnership with the California Manufacturing Consulting Technology organization, Butte College The Training Place is one of nineteen Department of Commerce, Manufacturing Extension Partners (MEP) located in northern rural California serving small to medium-size manufacturers and food processing companies.

Our partnership with the UpSkill California Community College Workforce Training organization expands our manufacturing and food processing workforce by engaging local and regional employers to design, deliver, implement, and evaluate workforce training. Since 2013, our ETP network of employers have received 191,057 training hours for 49 employers with employees achieving a 90 day post-training retention and earning an average of $19.49 per hour.

Butte College The Training Place is pleased to build upon the The Training Place's Advanced Manufacturing UpSkill Academy and Mini Skills not-for-credit workforce training programs designed, implemented, and evaluated with local manufacturing and food processing employers. We will continue to provide performance consulting with our backbone manufacturers to identify 40 student trainees and provide training delivery services to evaluate curriculum according to employee performance. We will enhance the employer talent development training plans to integrate the Engineering Support Technician (EST) skills training supporting the employee career pathway.

3536 BUTTE CAMPUS DRIVE, OROVILLE, CALIFORNIA 95965 · (530) 895-2511

BUTTE COLLEGE

Butte College The Training Place Miniskills courses are designed to provide new employees, or those with less than 90 days experience, with basic skills in blueprint reading as well as mechanical, electrical, and shop mathematics. The Butte College Training Place Advance Manufacturing UpSkill Academy is poised to expand the Amatrol instructor certifications and current Amatrol mechanical, electrical, and fluid skills (both hydraulic and pneumatic) e-learning platform modules each holding a 32-hour segment. An 80% competency level is required for certification.

The National Science Foundation funds would contribute to Training Place staff engaging former UpSkill Academy alumni and employers to participate by informing and piloting the new EST Technician's Certificate curriculum offered by the college.

Thank you for developing this proposal to expand on an essential need for our students and employers. We have been an active partner in designing this project proposal and fully support the application. I very much look forward to our continued collaboration and the success of your proposal.

Sincerely,

Anne Marie Rafferty,
Director Contract Education Training and Development
Executive Committee Member, UpSkill California Community College Workforce Training

3536 BUTTE CAMPUS DRIVE, OROVILLE, CALIFORNIA 95965 · (530) 895-2511

ANDERSEN & SONS SHELLING

P.O. Box 100
Vina, CA 96092
Phone: (530) 839-2236
Fax: (530) 839-2502

9/26/23

Mr. John Dahlgren, Principal Investigator

SwifTECH Program
Butte-Glenn Community College
3536 Butte Campus Drive
Oroville, CA 95965

Dear John,

On behalf of Anderson and Sons Shelling, we enthusiastically support the efforts of Butte College to develop and provide an Engineering Support Technician (EST) certificate program within the National Science Foundation's Advanced Technological Education program. We find it is difficult to find qualified engineering technicians and skilled workers to fill our employee needs, especially in the areas of maintenance technicians and advanced operators. We believe there is a need for more technician-based education in northern California due to a general lack of technical skill set in our work area. The proposed EST project would be helpful to our company by providing education and training for current employees and by building skills needed to work in processing facilities more common in our communities.

We intend to support the Butte College EST program by committing to the following:

- Assigning Jason Costa, Director of Manufacturing as the EST contact person to serve as an industry expert resource to the EST project
- Providing recommendations and referrals of students and/or current employees
- Providing staff willing to be trained and to serve as Industry Mentor Coaches to students enrolled in the EST project
- Providing internship opportunities for EST college students
- Guaranteeing interviews for qualified EST graduates for hiring consideration
- Providing company and manufacturing/processing plant tours to project staff, instructors, and students to help them better understand Andersen and Sons and food manufacturing.
- Presenting information about career opportunities for EST students in Butte College classes and at the Butte College career center

We are excited about the opportunities that the SwifTECH EST project could provide to help increase the number and improve the depth of knowledge and skills of Engineering Support Technicians in the northern California region.

Sincerely,

Jason Costa
Director of Manufacturing

Sabrina Marquez
Outreach Coordinator
Grow Manufacturing Initiative
11 Ilahee Lane | Chico, CA 95973
www.growmanufacturing.com

September 28, 2023

Mr. John Dahlgren, Principal Investigator
SwifTECH Program
Butte-Glenn Community College
3536 Butte Campus Drive
Oroville, CA 95965

Dear John,

The Grow Manufacturing Initiative (GMI) supports the Butte College grant proposal to develop an Engineering Support Technician (EST) certificate program within the National Science Foundation's Advanced Technological Education program.

GMI is a collaboration of industry, workforce, and education. We are a no-cost association of manufacturers that aim to grow the industry in the North State. Through strategic partnerships, vocational training, and job placement initiatives, we are committed to empowering talent, nurturing skills, and connecting individuals with the pathways to success in the dynamic world of manufacturing.

We understand there is a need for more technician-based education in Northern California due to the growing demand for skilled workers in advanced manufacturing and technology sectors. This demand is driven by advancements in technology, automation, and the evolving landscape of the sector, making it essential to equip individuals with the specialized skills required for current opportunities. These industries are the backbone of our regional economy, and by providing specialized technician education, the EST project can empower individuals to access high-paying, sustainable careers while meeting the evolving needs of our local businesses and industries.

We will commit the following support to the *SwifTECH* EST project by:

- Promoting industry relevant internship opportunities for EST college students
- Providing letters of support in obtaining EST related equipment to Butte college if available
- Conducting mock interviews and assist in preparing the EST college students for live interviews
- Facilitating manufacturing/processing plant tours to project staff, instructors and students to help them better understand the industry
- Presenting information about industry related career opportunities for EST students in Butte College classes and at the Butte College career center

We are excited about the opportunities that the EST project could provide to help increase the number and improve the depth of knowledge and skills of Engineering Support Technicians in the northern California region.

Sincerely,

Sabrina Marquez, Outreach Coordinator
Grow Manufacturing Initiative of Northern California
www.growmanufacturing.com

LUNDBERG FAMILY FARMS
5311 Midway
P.O. Box 369
Richvale, CA 95974
530-538-3500
www.lundberg.com

9/28/2023

Mr. John Dahlgren, Principal Investigator
SwifTECH Program
Butte-Glenn Community College
3536 Butte Campus Drive
Oroville, CA 95965

Dear John,
Lundberg Family Farms supports the Butte College grant proposal to develop an Engineering Support Technician (EST) certificate program within the National Science Foundation's Advanced Technological Education program.

Lundberg Family founders started farming in California in the late 1930s, and their experience in Dust Bowl era Nebraska influenced their philosophy *"Leave the land better than when you found it"*. This philosophy was foundational for the four brothers who took over farming and started growing organic rice in the late 1960s; they developed organic rice farming practices from the ground up and helped set the standard by joining California Certified Organic Farmers, the first certifying body of its kind, three decades before the National Organic Program was implemented. Today, we grow, mill, package, and manufacture rice and rice products for the consumer goods industry.

We find it difficult to source qualified engineering technicians and skilled workers to meet our staffing needs, especially in the area of manufacturing. We believe there is a need for more technician-based education in northern California due to labor shortage and lack of formalized training programs. The proposed *SwifTECH* EST project would be helpful to our company by providing education and training for current employees as well as strengthening the pool of future applicants as openings occur.

We will commit the following support to the *SwifTECH* EST project:

- Providing an advisor to serve as an industry expert resource for the EST project
- Providing staff willing to be trained and to serve as Industry Mentor Coaches to students enrolled in the EST project
- Providing internship opportunities for EST college students
- Providing EST related equipment to Butte college, if available
- Interviewing qualified EST graduates for hiring consideration
- Providing company and manufacturing/processing plant tours to project staff, instructors and students to help them better understand Lundberg Family Farms operations.
- Presenting information about career opportunities for EST students in Butte College classes and at the Butte College career center

We are excited about the opportunities that the EST project could provide to help increase the number and improve the depth of knowledge and skills of Engineering Support Technicians in the northern California region.

Sincerely,
Renee Thresher
Vice President of Supply Chain & Operations

Nourishing, conserving, and innovating, for a healthier world.

List of Suggested Reviewers

Data Not Available

List of Reviewers Not to Include

Data Not Available