2019

Choose Ohio First

COMPUTER SCIENCE SPECIAL RFP

PROPOSAL SUMMARIES

Baldwin Wallace University

Proposed Program #1:

Affordable, Accessible, Career-ready Education in Computer Science and Related Areas at Baldwin Wallace University

Proposal Abstract:

The computing industry faces two well-documented challenges: a lack of qualified workers (refer to "State and Regional Computer Science Economic Needs" section of this proposal) and a lack of diversity in the field. Over the last decade (2009-2019), the Department of Computer Science at BW has striven to address these needs through an increased undergraduate enrollment of 172% (75 to 204 students). This growth was fueled and sustained by external demand for strong programmatic offerings, faculty commitment to academic rigor, teaching and learning, and practice of continuous improvement of academic programs.

BW Computer Science is well-positioned within the NEO region to address not just the workforce shortage but also the lack of diversity within the field. The proposed program focuses on attracting first-time, full-time students from traditionally underrepresented groups into the Computer Science, Software Engineering, Cybersecurity, and Interactive Design degree programs.
The stated goals of the BW Choose Ohio First STEMM Scholars program and the proposed program align with the mission and goals of the ODHE COF educational grant initiative. Further, the BW Strategic Plan, "Achievement through Collaborative Leadership", currently in the final stages of approval, will drive resource allocation and guide the University's focus on student learning, leadership development, and commitment to business and community partners.

To that end, the aligned goals and objectives of this proposed program are as follows:

Goal 1: Improve access and success rates for students from underrepresented groups
- Objective: 40% of entering FTFT BW COF Scholars in CS-related major will be women by 2024
- Objective: 37% of graduating FTFT BW COF Scholars in CS-related major will be women by 2024
- Objective: 43% of entering FTFT BW COF Scholars in CS-related major will be from underrepresented groups by 2024
- Objective: 40% of graduating FTFT BW COF Scholars in CS-related major will be from underrepresented groups by 2024

Goal 2: Increase awareness and participation in issues of professional, community, and diversity development
- Objective: 100% of BW COF Scholars in CS-related majors will participate in at least one workshop on diversity issues in the computing field.

Objective: 75% of COF computing students will participate in a CS Community outreach event focused on traditionally underrepresented populations.
Objective: 90% of COF computing students will participate in a CS-related professional society or professional development opportunity (ACM, ACM-W, OCWIC, etc.)

Goal 3: Increase opportunities in the NE Ohio healthcare sector for internships and employment
Objective: 100% of BW COF STEM Scholars in CS-related areas will complete a "Career Trek" involving at least one healthcare-related company.
Objective: Participation of BW COF STEM Scholars in healthcare-related opportunities (internships, capstone experiences, etc.) will be 20%.

Proposed Program #2:

Affordable Baccalaureate Completion in Computer Science and Related Areas

Proposal Abstract:

The computing industry faces two well-documented challenges: a lack of qualified workers (refer to "State and Regional Computer Science Economic Needs" section of this proposal) and a lack of diversity in the field. Over the last decade (2009-2019), the Department of Computer Science at BW has striven to address these needs through an increased undergraduate enrollment of 172% (75 to 204 students). This growth was fueled and sustained by external demand for strong programmatic offerings, faculty commitment to academic rigor, teaching and learning, and practice of continuous improvement of academic programs.

BW Computer Science is well-positioned within the NEO region to address not just the workforce shortage but also the lack of diversity within the field. The proposed program focuses on attracting first-time, full-time students from traditionally underrepresented groups into the Computer Science, Software Engineering, Cybersecurity, and Interactive Design degree programs.
The stated goals of the BW Choose Ohio First STEMM Scholars program and the proposed program align with the mission and goals of the ODHE COF educational grant initiative. Further, the BW Strategic Plan, "Achievement through Collaborative Leadership," currently in the final stages of approval, will drive resource allocation and guide the University's focus on student learning, leadership development, and commitment to business and community partners.

To that end, the aligned goals and objectives of this proposed program are as follows:

Goal 1: Improve access and success rates for students from underrepresented groups

Objective: 40% of entering transfer BW COF Scholars in CS-related major will be women by 2024
Objective: 37% of graduating transfer BW COF Scholars in CS-related major will be women by 2024
Objective: 43% of entering transfer BW COF Scholars in CS-related major will be from underrepresented groups by 2024
Objective: 40% of graduating transfer BW COF Scholars in CS-related major will be from underrepresented groups by 2024

Goal 2: Increase awareness and participation in issues of professional, community, and diversity development

Objective: 100% of BW COF Scholars in CS-related majors will participate in at least one workshop on diversity issues in the computing field.
Objective: 75% of COF computing students will participate in a CS Community outreach event focused on traditionally underrepresented populations.
Objective: 90% of COF computing students will participate in a CS-related professional society or professional development opportunity (ACM, ACM-W, OCWIC, etc.)

Goal 3: Increase opportunities in the NE Ohio healthcare sector for internships and employment

Objective: 100% of BW COF STEM Scholars in CS-related areas will complete a "Career Trek" involving at least one healthcare-related company.
Objective: Participation of BW COF STEM Scholars in healthcare-related opportunities (internships, capstone experiences, etc.) will be 20%.

Proposed Program #3:

Expanding Opportunity: Access and Baccalaureate Completion in Business Informatics at Baldwin Wallace University

Proposal Abstract:

The COF grant provides student scholarships to earn a bachelor's degree and gain computer skills to fill a shortage of skilled workers in high-demand, information technology fields. By providing scholarships to first-time, full-time (FTFT) students from underrepresented groups and facilitating degree completion from an associate to a bachelor degree, the grant helps students acquire life-long skills and a bachelor's degree in a high demand field, enhances employment, and provides I.T. skills to local businesses, which spurs Ohio's economic growth.

Goal 1: Improve access and success rates for students from underrepresented groups

Objective: 40% of entering FTFT COF BIS Scholars will be women by 2024

Objective: 40% of graduating FTFT COF BIS Scholars will be women by 2024

Objective: 40% of transfer COF BIS Scholars will be from underrepresented groups by 2024

Objective: 40% of graduating transfer COF BIS Scholars will be from underrepresented groups by 2024

Goal 2: Increase participation in the professional, community, and diversity development

Objective: 100% of COF Scholars in BIS majors will participate in one workshop/event on diversity issues in the computing field.

Objective: 100% of COF Scholars in BIS majors will participate in a community outreach event focused on underrepresented groups.

Objective: 75% of COF Scholars in BIS will participate in a CS-/BIS-related professional society or professional development opportunity (ACM, ACM-W, etc.)

Goal 3: Increase internships and employment opportunities in NE Ohio businesses

Objective: 100% of COF BIS Scholars will complete at least one experiential internship.

Scholarships will be awarded 50/50 to incoming FTFT and transfer students majoring in Business Information Systems (BIS). Recruitment efforts are expected to yield 10 new students in 2020 and 2021, and 20 per year thereafter. BW also has articulation pathways to encourage low-cost degree completion. Regionally accredited institution transfer articulations allow a student to transfer to BW as a junior for bachelor degree completion. In Ohio, BW has articulation agreements with Cuyahoga Community College (Tri-C) and Lorain County Community College (LCCC), and has developed an articulation plan for the BIS degree.

Graduates earn a BIS degree designed with input from international software and I.T. professionals. The curriculum unites business with systems analysis and design, data analytics and visualization, project management, cybersecurity governance and intelligent software engineering. Analytics courses instill knowledge of statistics, modeling, data security, business analytics, and data-mining.

Students use state-of-the-art technologies, work on real-world projects, and build a portfolio to showcase their I.T. skills. Graduates are employed as a business or systems analyst, account manager, software engineer, web developer, computer programmer, database designer, consultant, data analyst, I.T. project manager, or information security analyst.

Bowling Green State University

Proposed Program #1:

Choose Ohio First - Computers in Engineering Technology

Proposal Abstract:

The proposed Choose Ohio First (COF) program in the area of Computer and Electronics Engineering Technology [ECET] will have multiple societal impacts in various magnitude. It will primarily create a competent STEM workforce in ECET that is immensely needed in the northwest Ohio and other parts of the state. The northwest Ohio region is one of the state's manufacturing centers, with over 700 companies employing approximately 43,000 workers. Toledo, OH has been labeled the "Silicon Valley" of the manufacturing sector because of the presence of high-tech advanced manufacturing. A 2017 study by the Brookings Institution found the Toledo Region has over 2,374 industrial robots (an increase of 28% from 2010), which ranks 1st in the United States among the Top 100 metropolitan areas. This region is struggling to find the right workforce in advanced manufacturing that requires significant computer and electronic skills. For example, First Solar in Perrysburg, Ohio, recently broke grounds for a new plant that will hire 500 employees mostly advanced manufacturing jobs and according to WOTL, the company will have hard times to find the right people. Another story by New York Times reveals that APT Manufacturing Solutions in Ohio is struggling to find robotics (computer and electronics) professionals to fulfil their employment needs. Cybersecurity is another area where Ohio companies need more ECET graduates than the state produces. This scholarship program will attract a diverse student population and working professionals in the ECET program, which is ABET ETAC accredited, and address the workforce needs within the region and the state of Ohio.

The proposed COF program in the ECET is focused on recruiting female and underrepresented populations as incoming freshmen as well as transfer students. The department has a student organization named Women in Technology. This organization will be leveraged to recruit the targeted groups as current representation of minority and female students are very low. A further description of the demographics for the Department of Engineering Technologies is presented in the recruitment plan. The scholarships in this grant proposal will help target students with a good chance for success. The purpose of this program is to prepare students to enter the exciting new positions that involve high technology in the future of Ohio.

Various program activities that are designed as part of this proposed COF program are Participation in LSMRCE Activities, Participation in CURS Activities, Participation in AIMS Activities, Workshops on finding Ohio Co-op positions, and Targeted Advising for COF Students. The detail of these programs are described in Exclusive Programming section of this proposal. All these activities will prepare the COF scholarship recipients competent, well prepared, well informed, and ready to work at Ohio companies in the area of computer and electronic engineering technology.

Proposed Program #2:

Increasing Diversity in Computer Science and Software Engineering

Proposal Abstract:

Many students in the United States are facing challenges in gaining a viable education- some of challenges are beyond their control. Historically, underrepresented groups (e.g., females, African-American, Hispanic/Latin), in computer science (CS) fields face unique structural and social barriers, which create differences in opportunities to obtain education and pursue a career in this vital field. For example, the Bureau of Labor Statistics projects CS related jobs to grow much faster than those of other domains (e.g., 24% increase in software developer positions by 2026, resulting in approximately 1.4 million more software development jobs than applicants who can fill them in 2020). However, small percentages of CS bachelor's degrees in the United States are earned by underrepresented groups (e.g., women only earn 18% of CS bachelor's degrees). It is the similar case in Ohio, and at Bowling Green State University (BGSU), only about 11.93% and 12.23% of the computer science majors were female and non-white in 2018, respectively.

In an effort to increase the overall number of students pursuing a computer science (CS)/software engineering (SE) degree, and also increase the access to these programs for historically underrepresented populations, enabled by the Choose Ohio First (COF) scholarships, the Department of Computer Science at BGSU proposes to recruit high-achieving, underrepresented students and provide them with unique education and advising experience.

The PI, Co-PIs, and other support staff members at BGSU will provide the following set of unique educational experiences and support structures to the COF scholarship recipients:
(1) BGSU's Academic Investment in Math and Science (AIMS) program experience;
- Includes educationally intentional COF orientation program (prior to the start of school year), monthly peer-group meetings with cohorts, and Junior-year post-graduation planning workshop. (The primary purpose of AIMS is to increase the number of women and students of color who graduate from majors in STEM.)

(2) Advising and workshop sessions;
- One 1:1 advising session with the Director/Coordinator of AIMS each semester of enrollment.
- One group workshop with CS Chair and/or Undergraduate Coordinator per year for academic and career preparation.

(3) Workforce engagement experience;
- Engaging with an industry mentor at least once a year for advice meeting.
- Attending at least one IT guest speaker series, typically organized by the CS student organizations, per year.

(4) Co-op/Internship in the computer science/software engineering experience;
- Includes CS 2900 Co-op/Career preparation course and CS 3900 Internships in Computer Science.

The projects supported by the COF scholarships will significantly increase underrepresented

students majoring in CS/SE, and will provide various engagement opportunities for better academic and career success. It will ultimately increase the Information Technology (IT) workforce in Ohio.

Case Western Reserve University

Proposed Program:

Choose Ohio First in Computer Science at Case Western Reserve University

Propsal Abstract:

We are in the era of digital information and digital innovation. Computer Science has become pervasive throughout our society and computational applications can be found in every field imaginable: engineering, biology, medicine, finance, journalism, art, transportation. Computer science related job opportunities are abundant. According to the Bureau of Labor Statistics Employment Projection, 58% all new jobs in STEM are in computing. Furthermore, those are mostly high-paying jobs and they are projected to grow at twice of the rate of all other jobs. However, despite the increased enrollments in Computer Science in the last decade, there is still a big gap between the number of CS graduates and the number of available job openings.

Case Western Reserve University is the top ranked university in Ohio, according to the U.S. News & Report. The computer science program at Case is also a top ranked program in Ohio. At Case, Computer Science was originally a Division within the Department Electrical Engineering and Computer Science, part of the Case School of Engineering, for over twenty years. To capitalize the increasing opportunities in CS, Case recently established the Department of Computer and Data Sciences (CDS) in June 2019. The CDS department is the home of all computer science degree programs, which include Bachelor of Science (BS), Bachelor of Arts (BA), MS, and Ph.D., as well as a BS degree in Data Science and Analytics.

The project has four primary goals. First, by complimenting existing financial aids and scholarships, the COF scholarship will help to attract more Ohio residents into this exciting field. Second, the COF scholarship will help to attract internal transfer students. By better presenting computer science to students whose original interests may lie in other areas of Arts and Sciences, we expect to significantly increase our students in the BA program. Third, by targeted recruitment strategies, we plan to attract Ohio residents who finish colleges out of state to our graduate program. Finally, many of our recruitment strategies directly target female students and minority students. We expect the COF program will improve our diversity in our student body.

At Case Western Reserve University (CWRU), undergraduate admission is centrally managed by the Undergraduate Admission Office (UAO). Students are admitted to schools, not to departments or programs. UAO knows whether a student is likely to major in CS based on her/his self-selected program(s) of interests. Graduate admission is jointly managed by each department and the School of Graduate Studies (SGS). We develop a comprehensive strategy that spans multiple years and incorporates many different recruitment mechanisms. For the implementation of the plan, we will work together with our collogues on campus (UAO, SGS) to recruit new degree seeking students and internal transfer students for both undergraduate degrees and graduate degrees.

Cedarville University

Proposed Program:

Computer Science and Computer Engineering

Proposal Abstract:

The goal of Cedarville's Choose Ohio First program is to ATTRACT and RETAIN top-tier Ohio high school students who are pursuing baccalaureate degrees in computer science and computer engineering. This will significantly enhance our computer science and computer engineering programs by increasing the number of high-performing students enrolled in our programs. Ultimately, it will lead to more job placements in In-Demand Occupations in the state of Ohio.

How will we accomplish this goal?
To accomplish this goal we will strategically augment institutional scholarship dollars with COF scholarship dollars to maximally incentivize top recruits in these majors to matriculate at Cedarville and NOT at one of our competitors outside of the state Ohio. Due to Cedarville's niche in faith-based higher education, our main competitors are chiefly located in the states of Michigan, Indiana, and Pennsylvania.

How will the COF awards be structured?
COF award amounts will vary based on the student's total financial aid package, and will be leveraged to maximize the probability that the student will attend Cedarville University. All amounts awarded will comply with the state's annual minimum ($1,500 in 2019) and maximum ($7,995 in 2019) amounts. We are targeting an average award amount of $5,000 per year for 12 scholars.

What are the typical jobs for Cedarville grads in Computer Science and Computer Engineering?
The rigor of our programs has earned Cedarville a strong reputation among area employers. Our graduates are highly sought after for both internships as undergrads and for jobs after graduation. Our internship rates are 80% and our employment rates are 100%. The majority of our graduates accept jobs as Software Developers-Application, which is the 5th highest ranked Bachelor's degree In-Demand Occupation in Ohio.

Will awarded funds be reflected as "Choose Ohio First Scholarship" on each scholar's tuition bill?
Yes, we commit to reflect "Choose Ohio First Scholarship" on each scholar's tuition bill

What is the evaluation plan for documenting the scope and outcomes of the project?
Every year we will measure the enrollment, retention, graduation, and employment statistics for students designated as COF scholars. As we accumulate data and are able to draw conclusions, we will make necessary adjustments in our use of COF scholarships, being sure to stay within the bounds of the program restrictions (i.e., min and max per year awards). At the

conclusion of the 5 years, we will generate a report summarizing the overall impact of the program.

What is the plan for collecting required data from students and monitoring / reporting the employment and other success measures of graduates?
CU's Career Services already has a robust reporting program in place for tracking the employment and other success measures of our graduates. As necessary, we will augment this reporting program for our COF scholars to obtain whatever information is required from the state of Ohio.

Central State University

Proposed Program:

Choose Ohio First: Computer Science at Central State

Proposal Abstract:

Central State University (CSU), the only publicly funded Historically Black College and University (HBCU) in Ohio and an 1890 Land-grant institution in collaboration submits the Choose Ohio First Computer Science Program at Central State (COFCPS) proposal to the Ohio Department of Higher Education. The goal of COFCPS is to increase the number of students in our Computer Science Program by retaining currently enrolled students and increasing the new incoming students. Specifically, The COFCPS program will provide scholarships and other support programs to retain five current students and recruit eight high quality incoming freshmen during the five-year project period. The COFCPS team is requesting a total of 47 unique scholarships over the five year project period at $7,689 each, for a total of $ $361,383.

Minorities are under-represented in both educational and professional STEM and Ag fields; hence the COFCPS program is designed to address this disparity. A dominant majority (95%) of Central State students are African-American, 85% of whom are from low-income families. Students from low-income families are eight times less likely to graduate from college than students from upper-income families. The COFCPS Program will award scholarships to 8 high school graduates with a minimum GPA of 3.0 and demonstrated talent in college preparatory track science and mathematics courses. Additionally, scholarships will be awarded to five current to complete their undergraduate degree. COFCPS scholars must major in computer science or seek a certificate in cyber security.

The combination of Choose Ohio First scholarships and other institutional funds will enable us to offer these incoming students up to $10,000 per year excluding their other external grants and scholarships. Due to the CSU's relatively low tuition, COFCPS scholars will not have to pay tuition as long as they maintain a GPA of 3.0 and above and meet the other program requirements. Central State will enhance students' outside the classroom academic experience to ensure students success. The services will include tutoring and mentoring, personal development sessions, internships, and undergraduate research experiences.

Cleveland State University

Proposed Program:

Vikings of Tomorrow - Computer Science

Proposal Abstract:

With support from the Ohio Department of Higher Education, Cleveland State University seeks to establish a new Choose Ohio First Program that will educate the next generation of talent in the growing field of computer science and information technology. Each year, this program will provide scholarships and programmatic support for up to 30 Computer Science and Computer Engineering students and 40 teachers seeking a Computer Science license or endorsement.

Computing is pervasive; it is difficult to envision any job or persuasion these days that does not involve some form of computing activity deeply integrated in it. In fact, the demand for employees with degrees in Computer Science and Computer Engineering by industries is Ohio outpaces the number of graduates the state produces. Cleveland State University has the ability to impact this problem both by increasing the number of Computer Science and Computer Engineering graduates directly and by helping to increase the pipeline of students prepared to enter Computer fields by providing teachers the training necessary to teach K-12 students computer science skills.

Our new teacher preparation program specifically focused on preparing future computer science educators will seek to address an import and urgent need for the state of Ohio. These teachers will have a large economic impact over the next several decades as we prepare the next-generation workforce for Ohio. Recently, the Ohio Department of Education established the Computer Science K-12 Content Standards and Model Curriculum, and subsequent to that, the Ohio Department of Higher Education has established standards for the creation of a Computer Science Endorsement credential for teachers. Members of the COF PI team from CSU have served on committees that created both of these resources, and has in-depth knowledge of the frameworks as well as the underlying principles that guided these resources. This knowledge will serve the team very well as we administer the program for our COF scholars.

Scholarships ranging from $1,500 to $8,000 per year will be used to help recruit new and transfer students into Computer Science and Computer Engineering majors and encourage teachers to obtain a Computer Science endorsement. The scholarships will help with retention by reducing the financial burden on the students. In addition to financial support, this COF program also consists of cohort building activities based on our current Choose Ohio First program, which has demonstrated increased student retention and success. Experiential learning through paid co-ops or internships or through field experiences will provide our scholars work experience and connect them to potential permanent employers.

Columbus State Community College

Proposed Program:

Software Development, Cyber Security, Network Administration, Web Development

Proposal Abstract:

Each program year, Columbus State Community College will provide 24 full-time students with scholarships of at least $5,040 toward completion of an Associate in Applied Science in Software Development, Web Development, Network Administration, or Cybersecurity. After attending CSCC, they may transfer to any of the 4-year universities to continue their study, or enter the workforce. The College will target the following outcomes:
â€¢ 65% of full-time COF Computer Science scholars will complete their Associate of Applied Science degree within 3 years
â€¢ 50% of COF Computer Science scholars will participate in an internship, co-op, or work study program in the IT industry or IT-based occupation

This is an attainable goal. Columbus State has been part of the Choose Ohio First program since 2009, and of the 229 scholars accepted into the program between 2009 and 2017, 60% have graduated within three years, and 71% have transferred to continue their studies in Ohio. These rates are significantly higher than for the general student population.

Columbus State emphasizes employer engagement and continues to expand relationships with industry regionally and nationally. The infrastructure continues to redesign itself around changing careers and is responsive to adapting itself to fill the gaps in employment demand. The College has been working with an established Workforce Advisory Council to expand and better align IT degree programs to changing technology and industry demand. National Science Foundation funding has supported new degree programs in cybersecurity, data analytics, and mobile app development, with an expansion in cloud technology beginning. The next phase of work is the IT Work Study Flexible Apprenticeship program, which engages students in simultaneous academic coursework and related employment. Both the National Science Foundation and U.S. Department of Labor have recently provided funding for the expansion of this experiential learning program.

Cuyahoga Community College District

Proposed Program:

Information Technology Center of Excellence degree programs: Networking Hardware (AAS), Networking Software (AAB), Business Solutions (AAB), Cybersecurity (AAB), and Programming & Development (AAB)

Proposal Abstract:

There are more than 12,000 vacant IT jobs in our region. Cuyahoga Community College is working to fill this urgent need by enhancing its offerings, learning spaces and building partnerships that prepare workers for IT careers. With the Computer Science Choose Ohio First Scholarship, more students will have access to these resources and will have better completion and job placement success.

In addition to scholarship support estimated at $2,000 per year per participant, recipients will be matched to an IT faculty mentor, required to participate in student IT club, and participate in internship/co-op information sessions, baccalaureate transfer information sessions, internship/job fairs, and job shadowing.

Four faculty members, representing Information Technology Center of Excellence at each of the College's four campuses will lead the Computer Science Choose Ohio First Scholarship Program. They will collaborate with and benefit from existing Tri-C Choose Ohio First Scholarship infrastructure and practices in order to most efficiently and effectively identify 50 new recipients over the five-year grant period.

Defiance College

Proposed Program:

Defiance College Computer Science Success program (DC-CoSS)

Proposal Abstract:

DC-CoSS (Defiance College Computer Science Success) program is a proposed scholarship program in which students from Northwest Ohio majoring in computer science receive significant financial support (up to $10,000 for at least 4 years) and a network of classmates, faculty, and staff to assist them throughout their college career at Defiance College. DC-CoSS is designed to provide a "family" environment which provides support and resources available to successfully matriculate through a four-year computer science program. DC-CoSS integrates several interventions such as proactive faculty advising, faculty and staff mentorship, scheduling of cohort students in the same section of courses, community based service opportunities, professional based social activities, and professional based internship opportunities. These components are designed to build community, help strengthen student identities as computer science professionals, provide support structures, and increase retention rates of students in the computer science fields.

The idea behind DC-CoSS emerged from conversations surrounding the increase of recruitment and retention of students in the STEM fields. These conversations started in January of 2016 under Defiance College President, Dr. Richanne Mankey. Facing declining enrollment and retention, Defiance College participated in numerous external reviews to access, prioritize, and address issues pertinent to the decline. A retention performance report compiled by the John N. Gardner Institute for Excellence in Higher Education in March, 2016 and an enrollment report from Ruffalo Noel Levitz identified several of the College's core strengths and weaknesses. In examining these strengths and weaknesses, the DC-CoSS program is proposed to play off the strengths of the small class sizes, a powerful student-focused planning process led by a strong administrative team, and the incredible service learning experiences provided by the College. These strengths will be utilized to break down financial barriers to student success, expand work-based learning opportunities for the computer science cohort, and increase academic support for the cohort.

DC-CoSS will introduce several initiatives in support of those students selected for the DC-CoSS program scholarship. First of all, students involved in DC-CoSS program will receive faculty mentoring and advising support by the lead faculty member in the Computer Science program. Research overwhelmingly documents the benefits of faculty/student mentor programs (Nagada, Gregerman, von Hippel, & Lerner, 1998). Students who participated in the mentoring program studied by Campbell and Campbell completed slightly less than one unit more per semester and obtained a higher grade-point average compared with control group of non-participating students (Campbell & Campbell, 1997). Persistence to graduation is the key to employment. Providing authentic faculty/ student mentoring that bridges the gap between academia and employers through networking; works in conjunction with the career development office; and directs students to work-based learning opportunities is critical to students' long term professional success.

Cohort scheduling is the second strategy that will be created. Students within student-learning communities will take at least two of the same course sections together. There has been significant research on learning communities and their impact on student success (Chen, Duerr, Schlemer, Lehr, Liptow, Singer, & Finger, 2018). Students in learning communities develop supportive relationship with their peers and spend more time outside of the classroom in study groups. Students are also more likely to draw connections between classes, which deepens their understanding of important concepts. The overall goal for the DC-CoSS program is to increase student engagement and success, and can increase retention.

Defiance College has an excellent track record of effective work-based learning through the service learning and community-based research supported through the endowed McMaster School for Advancing Humanity. The third initiative will tie into the service learning component through the McMaster program. Students will have the opportunity to tie what they have learned in the classroom with their own research and take that into the service setting. Defiance College currently has opportunities for service learning through Belize, the City of Defiance, Defiance Education Center, Rome, and Panama.

The fourth initiative is the implementation of mandatory internships within the curriculum. Postsecondary education must provide work-based learning opportunities to enhance students' academic knowledge and skills. The Hart Research Associates' survey of employer priorities said that employers "strongly endorse practices that require students to demonstrate both acquisition of knowledge and its application" (Hart Research Associates, 2013). In 2018-2019, 63% of the internships completed at Defiance College were unpaid. By providing the DC-CoSS program scholarship, students will have the ability to participate in internships without the financial hardship they may have had without the scholarship.

Franklin University

Proposed Program:

Choose Ohio First Scholars at Franklin University

Proposal Abstract:

Franklin University is requesting a total amount of $1.8m to recruit and retain 20 students annually over a period of five years. Franklin will provide $1,292,500 in matching funds and in-kind contributions and requests $507,500 from Ohio Department of Higher Education.

Franklin University, founded in 1902, is an accredited private non-profit institution in Columbus serving the needs of adult students. Franklin University is "the University of Opportunity". Consistent with its mission, the institution has developed quality academic programs. Current undergraduate degree programs included in this application include: (1) Computer Science, (2) Cybersecurity, (3) Information Technology, (4) Web Development and (5) Information Systems. These programs were developed by highly qualified academics with industry experts who serve on the programs' advisory boards. The programs enjoy maintenance from the University's International Institute for Innovative Instruction, in collaboration with faculty and advisory boards. While the Choose-Ohio-First scholarship will support the recruitment, development and education of students in these fields, it will not displace the allocation of existing resources previously committed to managing the programs.

In May 2019, the University became an NSA/DHS Center of Academic Excellence (CAE) in Cyber defense education. The designation validates Franklin University's commitment to excellence in cybersecurity education. The state of Ohio, and the entire country is seeing an increase in large-scale breaches suggesting that not only are the number of security breaches going up, but that they are increasing in severity as well. There are over 130 large-scale, targeted breaches in the U.S. each year, and that number is growing by 27 percent annually. Franklin's academic programs develop talents to combat these threats to state and national security. Data from Ohio Means Jobs and Cyberseek.org indicate that the four academic programs included in this application enjoy a healthy job growth and are classified as in-demand careers. These programs are projected to see a job growth higher than the national average, with information security analysts for example (Cybersecurity) expected to see a job growth of 28 percent between 2016 and 2026. Reports from industry experts, including advisory board members show a good alignment between the institution's programs and industry needs.

Franklin University will work with it's over 230 Community College Alliance partners (CCA), and its office of admissions to recruit students across the state of Ohio. Relationships developed with the military and other organizations such as Tech Corps, Women-in-Cybersecurity, and Per Scholas would allow Franklin University to recruit minority and under-represented students (currently approximating 23% at Franklin). The institution will work with CCA partners to encourage the transfer of students who have completed a 2-year Associates degree in these fields in order to complete their degrees. Franklin University announced that effective in the

Fall 2019 term it will reduce its undergraduate tuition rate by 24%, lowering the cost from $526 per credit hour to $398 per credit hour. This reduction in tuition facilitates the completion of a bachelor's degree in a cost-effective manner. Franklin's admission's policy ensures that students are appropriately qualified before admission into these programs.

This application will support the education of highly skilled professionals in Computer Sciences and related fields, and help contribute to the growth of the Ohio economy.

Hocking College

Proposed Program:

Computer Science Growth

Proposal Abstract:

Hocking College is a two-year community college located in Athens County, Ohio that offers Associates Degrees in STEMM related fields of Web and Application Development and Cybersecurity and Network Systems. We are currently pursuing expanding our STEMM focused fields to include degrees and/or certificates in data analytics and cloud computing. Hocking College has partnerships and collaborations with organizations such as Cisco NetAcademy, Girls Who Code, Amazon Web Services (AWS) and Grow with Google. Our mission statement is simply stated as: "We serve as a pathway to prosperity, teaching and inspiring all who seek to learn, growing careers and changing lives."

According to the 247wallst.com Athens County ranks highest in for the highest poverty rate in the state of Ohio. With the vast career opportunities that are available in technology today, the Hocking College Computer Science Department has a goal to help the community overcome these numbers and break this cycle of poverty.

Hocking College's Computer Science Growth program will utilize the funds received from Choose Ohio First (COF) scholarship to aid in the pursuit of our mission of "teaching and inspiring all who seek to learn, growing careers and changing lives" for individuals who are unemployed, underemployed or recently graduated from a high school or GED program. With the provision of the COF scholarship and Hocking College's match of funding sources for students enrolled in Hocking Colleges STEMM related programs, our focused objectives will be to accomplish the following:
Provide funding to eligible students to attend applicable program at Hocking College to earn an Associate Degree in a STEMM field.
Provide funding to eligible students to attend applicable programs at Hocking College to earn a certificate in a STEMM field.

Community colleges play a vital role for providing workers with "middle skills", especially for jobs that require some post-secondary technical education and/or on-the-job learning. These technological skill sets expand beyond the bigger cities and are in demand in rural areas as well. Technological employers are broadening their search for qualified talent to not only recruit but train as is shown by example with Pillar Technology and their alliance with a rural town in Jefferson, Iowa as Pillar will be training and recruiting within the local community colleges of the area.

James A. Rhodes College

Proposed Program:

Choose Ohio First Computer Science Scholars Program

Proposal Abstract:

The Rhodes State College Choose Ohio First Computer Science Scholars (COF CS Scholars) Program will support the College's mission that "changes lives, builds futures and improves communities through life-long learning". These scholarship dollars, matched by institutional funds, will allow RSC to recruit, enroll, and support students who will be actively pursuing Associate of Applied Science degrees in Digital Media Technology, Computer Programming Technology, Web Programming Technology, and Network Security. With the COF CS Scholarship funding combined with a 100% matching investment from the College, all individuals chosen to enroll as COF CS Scholars will be provided financial support that will enable them to complete the two-year associates degree with minimal out-of-pocket expenses. In addition to the COF Scholarship for tuition, COF CS Scholars will also have access to cost-free academic support services. Tutoring, proactive advising, and learning communities would be provided to all program participants with no additional expense incurred by the student.

Kent State University

Proposed Program:

Choose Ohio First CS Scholarships: Building High Demand 21-Century Workforce Development in Big-Data, Cyber Security & Privacy, AI, Smart Systems and Devices, and other cutting edge Computer Science

Proposal Abstract:

The goal of this proposal "Building High Demand 21st-Century Computer Science Workforce for Ohio with integrated Experiential Learning" is to prepare NE Ohio students, including underrepresented, economically disadvantaged, first generation, and female students for in-demand occupations in Ohio for a rich set of future-facing computer science (CS) areas ranging from software engineering, data science, cyber security and privacy, AI, smart devices, to internet-of-things, and Endorsement. This program will benefit students, industry, and the state as a whole.

Our program will support a multitude of in-demand careers in CS, as documented by OhioMeansJobs list of high demand occupations, including Computer Network Architects, Computer Network Support Specialists, Programmers, Systems Analysts, Database Administrators, Information Security Analysts, IT Project Managers, Network/Computer Systems Administrators, and Software Developers.

The students will gain rich education readying them for the 21st century workplace. Today we offer one of the most comprehensive set of CS degree programs in the state- ranging from BS, BA, MS, MA to PhD degrees, as well as a minor in CS. Our rich curriculum delves into a wide range of CS areas including the latest, BlockChain and Quantum Computing. We also offer optional concentrations in four high-value specialties: Computer Security, Data Engineering, Game Programming, and Smart Devices/Computer Engineering. Or one can pursue the BA degree aiming at interdisciplinary careers such as e-commerce or digital humanities. After completing, aspiring scholars can further pursue the MS, MA, or even a doctoral education. Starting in 2020 we are initiating the CS endorsement for licensed K-12 teachers.

COF-CS scholars will participate in high-impact activities to enhance their education experience. They will receive research experience in a state-of-the-art Computer Science research labs. A career integrated and paid CO-OP opportunity will also be arranged for each of COF-CS scholars in collaboration with our own Information Services (IS) and industry partners, and students will earn badges or Ohio State Credentials in high-demand careers.

Further, scholars will participate in a yearly research poster conference, jointly held with Cleveland State University, Youngstown State University, Cuyahoga Community College, and Case Western Reserve University. These poster conferences have been in place for the last ten years and have proved to be a very valuable experience for COF students, serving to connect COF scholars with industry, provide motivation for their academic studies, and develop independent thinking and teamwork. Each year, our industry partners are strongly represented at these events, providing both speakers and judges. Past partners include Cleveland Clinic, NASA, Avery Dennison Corporation, Progressive, MacMillan, Hortonworks, Lubrizol, and many others.

To facilitate retention, timeliness, and low-cost completion, we will put a support system in place which will include mandatory faculty advising and monitoring of their grades and coursework to make sure that the students are on-track. Students may seamlessly mix courses from low cost regional campuses and the Kent campus as needed, utilizing the Kent systems inherent cost advantage.
Our COF program will help attract strong students to study Computer Science, preparing a new generation of high-demand computer scientist professionals in NE Ohio.

Lakeland Community College

Proposed Program:

Choose Ohio First Scholarships: Cybersecurity Concentration for Associate of Applied Business in IT Support Analyst Major

Proposal Abstract:

Lakeland Community College (Lakeland) is committed to increasing the number of Ohio residents entering and successfully completing an associate's degree with a STEMM major. As a part of this commitment, Lakeland is requesting $100,000 in Choose Ohio First Scholarships (COFS) grant funds for 25 students in its new Associate of Applied Business in Cybersecurity. COF Scholarships will be awarded over a five-year period from January, 2020 - December, 2025.

Lakeland's mission is to "provide quality learning opportunities to meet the social and economic needs of the community." Lakeland's Cybersecurity program was approved by the Ohio Department of Higher Education (ODHE) in June, 2019. It is a combination of multi-disciplinary existing courses and new courses to address an emerging need for individuals that have knowledge of the disciplines and the technologies associated with cybersecurity. The use of global technologies, the Internet and personal technologies has become ubiquitous in our present-day society. We depend on, and have placed our trust in, these technologies. Unfortunately, technology is susceptible to threats, has vulnerabilities, and is subjected to privacy invasions. This concentration in cybersecurity will develop a workforce capable of addressing the needs of businesses, government, as well as the community.

The purpose of this program is to increase the number of Ohio residents entering and successfully completing Lakeland's Associate of Applied Business in Cybersecurity, a high-growth employment sector and STEMM major. To accomplish this goal, Lakeland will implement 6 objectives: 1. Develop a recruitment plan that results in annual enrollment of at least 5 students in the COF Cybersecurity Scholar Program, a total of at least 25 students over the 5-year grant period. Lakeland has already begun to aggressively recruit students into its Cybersecurity program which has resulted in attendance of almost 100 prospective students at various events. Emphasis will be placed on recruiting underrepresented groups into this STEMM sector, including women and people of color; 2. Integrate administrative, academic, and social programming into its COF program that will be exclusive to COF Cybersecurity Scholars. These programs are designed to maximize student success and completion and include annual COF Cybersecurity scholars welcome and orientation events, designated meeting space on campus, leadership opportunities, career service workshops and programs, tutoring and mentoring, and social activities; 3. Increase the number of individuals educated and trained to work in Cybersecurity, a documented high growth job sector. Prior to developing its Associate of Applied Business in Cybersecurity, Lakeland performed an extensive needs analysis that showed a growing demand for a cybersecurity program including over 500 job postings in this field in one year in the Cleveland region (Source: Labor Insight Jobs, Burning Glass Technologies). 4. Provide Internship and Co-ops to a minimum of 80% of COF Cybersecurity scholars. Lakeland is

developing a Learn and Earn program to engage students with employers while they complete a cybersecurity certificate and degree, with the support of a 2018-2020 Fenn grant from the Cleveland Foundation; 5. Develop an evaluation plan that documents the scope and outcomes of the project as required by ODHE including the collection and submission of student data; and 6. Provide a minimum 1:1 institutional match for COFS funding.

Lorain County Community College

Proposed Program:

CISS (Computer-Information Systems), CSE (Computer Science Engineering), Computer Maintenance & network (CMNW)

Proposal Abstract:

Submitted in response to the 2019 Choose Ohio First (COF) Computer Science & Related Areas RFP, with this proposal Lorain County Community College (LCCC) requests $315,000 for five years of COF scholarships, for the following ODHE-approved CIP codes:

11.07 Computer Science
11.08 Web page/Digital/Multimedia
11.0901 Computer Systems Networking & Telecommunications
14.0901 Computer Engineering, General
15.1201 Computer Engineering Technology/Technician
15.1202 Computer Technology/Computer Systems Technology

As detailed in LCCC's newly launched Vision 2025 strategic plan, LCCC strives to increase student completion & academic success in promising, in-demand career pathways, with a top priority on preparing students "for the jobs of the future." (LCCC's own achievement in increasing completion outcomes since 2011 is significant, and in 2018, LCCC was cited as "First in the Nation for Student Success" by the American Association of Community Colleges.) LCCC offers multiple pathways to emerging and in-demand jobs & industries, prepares students with future-ready skills, and makes education & training more accessible & flexible. Computer Science, IT, and related areas are among LCCC's leading programs serving the region's "innovation economy" of companies utilizing technology & IT in their operations, production, and management. The industries areas varied as healthcare to manufacturing to IT and data/computer-science development itself.

This proposal builds on the previous success of previous Choose Ohio First (COF) awards focused on IT, Computer-Information Systems (CISS), Computer Science Engineering (CSE), Computer Maintenance and Networking (CMNW), and related computer-science areas. Program objectives are focused on the following:

1. Increasing student success for COF scholars;
2. Increasing work-based learning placements for COF scholars;
3. Helping to address the skills gap in many computer science/IT-related fields found in unfilled in-demand jobs & career pathways; and
4. Building out a "learning community" around the COF cohorts, which holds the potential to improve & enhance retention, persistence & completion.

All activities are detailed in the COF Program Admin Gantt Chart, and are categorized as

Academic, Administrative and/or Social. Program goals specifically include the following:

1. Increase the of IT/CISS/CSE/CMNW credentials to meet the Northeast Ohio in-demand jobs needs. From 2015-16 to 2018-19, LCCC awarded 76 COF scholarship in six (6) of this RFPâ€™s approved CIP codes, for a total $248,728. Of those student recipients, 33 were awarded either degrees or credentials, for a 43.4% completion rate. (CIP codes tied to COF 2015-2019:
2. LCCC seeks to significantly increase its rate of COF recipients who take advantage of internships and other experiential learning opportunities. Currently, about half do so. LCCC will seek to increase this number to @ 75% by the end of the project term.
3. Program activities and COF academic and intern-placement outcomes will be consistently evaluated by LCCC's Institutional Research & Effectiveness (IRE) office and Career Services Office as to success in retention, persistence, completion, transfer, and/or employment placement.

Marietta College

Proposed Program:

Computer Science and Information Systems Studies

Proposal Abstract:

Marietta College is a small, private institution located in Southeast Ohio. Marietta College provides a strong foundation for a lifetime of leadership, critical thinking, and problem solving. We achieve this mission by offering undergraduates a contemporary liberal arts education and graduate students an education grounded in advanced knowledge and professional practice. Our goal is to prepare students for the world of work particularly in key in-demand industries in Ohio.

The demand for computer and information science related jobs has been rapidly increasing over the past decade. Computing plays a pivotal role in business, education, government, health care, and society. There will always be a need for programmers to design new software solutions. People are needed to design, implement, and manage databases and networks. Most businesses and organizations now have their own Information Technology department for managing computing hardware and software. This is especially true in the state of Ohio.

Even with these career opportunities, there are not enough college graduates with a computing degree to meet the growing job demand. The Bureau of Labor Statistics released a report in 2017 projecting that there will be over one million job openings for computer occupations with nearly half of those jobs being brand new. Unfortunately, the number of college graduates in computer science, information systems, or related fields is far below the number of jobs available. Thus, to help meet the job demand, it is our mission to educate and graduate more computing students from Ohio.

One of the biggest challenges for students in Ohio is affording the cost of college. The cost of attending Marietta College is $47,760 per year. However, the median household income for Ohio residents is approximately $54,000, it is clear that most students will have to rely on financial aid, including student loans, to be able to attend Marietta College. Even with academic scholarships ranging from $19,000 to $23,000 per year, the cost of attending Marietta College may still be too high for some students who are interested in a computing degree.

The objective of this program is to provide an education in computer science and/or information systems for Ohio students who otherwise may not be able to afford to attend Marietta College. If more students are able to attend college to pursue a computing degree, we will be able to prepare these students for careers in the computing field. Thus, more graduates will be able to meet the growing demand for computing jobs, including those located in Ohio. This will be accomplished by offering scholarships to Ohio students who are interested in a computing-related major at Marietta College. Our curriculum will provide students with the knowledge and skills needed to pursue a computing career or attend graduate school. In addition, our program will provide mentorship and internship opportunities directly related to the computing industry.

Marion Technical College

Proposed Program:

Choose Ohio First IT Scholarship Program

Proposal Abstract:

Marion Technical College (MTC) offers a comprehensive set of programs and courses in Information Technology (IT) and has developed transfer partnerships with area high schools to help high school students studying IT transition to MTC after high school graduation. MTC has also developed a specific four-year pathway (a 3+1) in Cyber Security with Franklin University.

MTC's cost of attendance (tuition, course fees, textbooks) is just under $6,000 per year for a full-time student. Approximately 40% of MTC's degree-seeking students are Pell-eligible at some level, leaving 42 current IT students who are either self-pay or using loans to cover the cost of attending MTC. In the past 18 months, there were 1,333 unique job postings for IT networking, security, and software specialists in MTC's seven county market area (Marion, Morrow, Wyandot, Delaware, Union, Crawford, Hardin counties). The job openings were posted for an average duration of 30 days, slightly higher than the national average; this is an indication the jobs are difficult to fill.

The Choose Ohio First Scholarship program for IT will enable MTC to offer last-dollar scholarships to IT students who are seeking an associate degree, certificate, and/or industry certification in one of MTC's seven IT programs. MTC will be able to provide scholarships to at least 40 new IT students over the next five years.

Miami University

Proposed Program:

Choose Ohio First Machine Learning Scholarship

Proposal Abstract:

Machine learning is a computational field that focuses on algorithms and statistical models utilized by computer systems to conduct and complete desired tasks properly without explicit instructions from human. It relies on the ability of computer systems to learn and improve themselves automatically by detecting patterns and making inference. Nowadays, machine learning plays an increasingly important role in a wide variety of applications, including traditional manufacturing and supply chain tasks, finance, business, healthcare, sustainable agriculture, genetic engineering, biotech and biomedical research, human disease diagnosis and personalized medicine, among others. A search on OhioMeansJobs (https://jobseeker.ohiomeansjobs.monster.com/ExploreIt/In-DemandCareers.aspx) using "machine learning" as the keyword shows strong evidence of a high demand for machine learning workers at both the regional and state levels. In terms of the report recently published in Forbes (https://www.forbes.com/sites/louiscolumbus/2019/03/27/roundup-of-machine-learning-forecasts-and-market-estimates-2019), "AI and machine learning have the potential to create an additional $2.6 trillion in value by 2020 in Marketing and Sales, and up to $2 trillion in manufacturing and supply chain planning". Obviously, growing the workforce with machine learning expertise is vital to meeting the high demands for machine learning in Ohio. In this proposal, we propose a new, 5-year Choose Ohio First (COF) Machine Learning Scholarship Program in Miami University that will attract talented students into this exciting and rapidly evolving field, with an ambition of educating, training and fostering future leaders and experts in machine learning and its wide applications around the world. Specifically, we request $50,000 to support 10 scholars per year (i.e., $5,000 per student per year) for 5 years. We will commit to match any new state funds with tuition waivers and university scholarship dollars. We have established an efficient process of student recruitment and scholarship recipient selection. We have a demonstrated track record of selecting high-quality students as scholars, while also giving special consideration to students from underrepresented groups and women. All scholars are personally mentored and are required to take machine learning-related courses, and to join individual labs to engage in machine learning-related research. Miami University has established partnerships with many well-known companies, through which scholars have opportunities to work with their professors on funded research and to participate in internships and CO-OP opportunities. The high-quality of undergraduate students and the excellent learning environment in Miami University will contribute greatly to the success of our COF scholarship program. Indeed, Miami University is an excellent place to ensure the success of this program, as well as of the COF scholarship recipients.

Mount St. Joseph University

Proposed Program:

Choose Ohio First in Computer Science at MSJ

Proposal Abstract:

Mount St. Joseph University, a private university located in Cincinnati, Ohio, is seeking the Choose Ohio First Scholarship as a way to increase the number of Computer Science-related majors in Ohio and at our institution. We intend to recruit prospective students into our Bachelor of Computer Science program through an individualized marketing strategy that illustrates how a Computer Science background can advance students' interests in other content areas. Our Choose Ohio First (COF) scholarship recipients will be given exclusive programming and resources such as a multi-day orientation, assigned tutors, mentors, and advisors, dedicated working spaces, research opportunities, and opportunities to work with and further develop our Center for Information Technology Engagement (cITe) programs. Our program will help train and prepare our COF scholars for successful careers in Computer Science-related fields, helping meet the statewide and local economic need utilizing OhioMeansJobs as a guideline. Our COF scholars will be given exclusive internship, co-op, and work engagement opportunities that will revolve around the use of our highly adaptable cITe resources and projects which will enable our students to establish credibility with individuals from the community on a local, national, and international scale.

North Central State College

Proposed Program:

Proposal Abstract:

North Central State College (NCSC) is a public two-year community-based educational institution serving the residents of northeast central Ohio. The mission of NCSC is to help the citizens of its service region to attain the knowledge and skills to succeed in their chosen path of learning, work, or enrichment, sufficient for the college to justify available resources. NCSC has established three Strategic Goals: Student Access, Student Success, and Alignment of Resources.

NCSC is applying for Choose Ohio First (COF) Computer Science Scholarship funding to benefit students majoring in computer science and other related disciplines. The Choose Ohio First Scholarships will allow NCSC to recruit and retain talented students majoring in Associate of Science degrees that include Visual Communications Media & Technology (VCMT), IT networking, IT Cyber-Security, and the new Associates of Business Administration (AAB) with Microsoft Analytics degree.

The AAB, Business Administration-Business Analytics is a new program that is expected to be available for 2020. This program is designed to provide students with the skills necessary to apply informational science to solve business problems. The curriculum for the program will be reviewed with the business and workforce advisory groups in September 2019 and presented to the institutional curriculum review committee for approval in October 2019.

The Choose Ohio First Scholarship aligns with all three of the schools' priorities by providing students with access to the college through a more affordable program. A COF amount of $2,000 per scholarship is requested for 55 scholarships or $110,000 per academic year for a total of $550,000 for the 5-year grant cycle. The 55 scholarships per year will help students succeed by rewarding success and achievement in the IT program. The scholarship allows the student to devote more time to their classwork and less to work. This vital support will supplement financial aid and other scholarships that may be provided to students.

Ohio Dominican University

Proposed Program:

Meeting Demand in Ohio

Proposal Abstract:

In Fall 2018, Ohio Dominican University had 44 students enrolled in the Computer Science and Software Engineering programs. We will use the Choose Ohio First scholarships to grow this program to at least 60 students over the next few years. Our programming focus for COF students will focus on job preparation and internship opportunities. Students have had great success in transitioning into positions after graduation, including at employers like Chase which offer an extensive internship program for students.

ODU also has a strong Education department and will create a Computer Science Endorsement for teachers. Both current students working towards licensure and current teachers will be able to complete this endorsement to teach Computer Science in schools. We anticipate enrolling at least 15 students by the second year of the program.

If we succeed in achieving our goals (60 CS students and 15 endorsements), at $7689 per student, this would be close to $60,000 in scholarships per year. Over the course of the 5-year program, this would amount to $300,000.

Ohio Northern University

Proposed Program:

Growing enrollment in computer science and computer engineering.

Proposal Abstract:

The purpose of this proposal is to increase the enrollment of students in computing-related majors in Ohio. Specifically, the proposal aims to increase enrollment at Ohio Northern University (ONU) in Computer Science (11.0701) and Computer Engineering (14.0901), both of which are included in the list of programs eligible for this RFP. The goal is to increase first-year enrollment in these two programs from the current number (20 in the fall of 2019) to 45 in the fall of 2024. This will more than double the total number in the program. Most ONU graduates take jobs in the state of Ohio after graduation, so this will increase the number of computing professionals in the state.

ONU will match each Choose Ohio First (COF) scholarship with university-funded scholarships and grants. The match will be at least 1:1, with some students receiving more from ONU than from COF. The scholarships and grants will be incorporated into the financial aid package for new students and budgeted accordingly. The COF scholarship will be identified as such on the scholar's tuition statement.

Based on the 2017 Ohio Means Jobs report on in-demand jobs (http://omj.ohio.gov/OMJResources/State-BachWages.stm), computing careers are at the heart of many of the most in-demand areas. Areas in which graduates from ONU's computer science and computer engineering program could find careers include:
- Computer and Information Systems Managers
- Computer Network Architects
- Telecommunications Engineering Specialists
- Software Developers, Systems Software
- Computer Hardware Engineers
- Software Developers, Applications
- Robotics Engineers
- Computer Systems Analysts
- Information Security Analysts
- Operations Research Analysts
- Software Quality Assurance Engineers and Testers
- Computer Systems Engineers/Architects
- Data Warehousing Specialists
- Information Technology Project Managers
- Database Administrators
- Network and Comp. Systems Admins
- Computer Programmers

The Ohio 2026 Job Outlook report (http://ohiolmi.com/proj/Projections/Ohio_Job_Outlook_2016-2026.pdf) predicts an increase of 6.9% in the area of computing and mathematical jobs, a total of 10091 new jobs.

This table shows the expected number of students recruited into the two computing majors each of the 5 years of the grant, and the funding requested each year based on the proposed maximum of $7689

per student. Note that typical retention rates are built into the model (90% first to second year, 90% second to third year, 100% third to fourth year). This results in a total of $ 3,944,457 over the 5 years.

	First year COF students	Total COF students	Dollars
2020-21	35	35	$ 269,115
2021-22	40	71	$ 545,919
2022-23	45	109	$ 838.101
2023-24	45	145	$1,114,905
2024-25	45	153	$1,176,417

Ohio State University

Proposed Program:

Excellence Fellowship in Computing

Proposal Abstract:

The Ohio State University (OSU) proposes "Excellence Fellowship in Computing" (EFC) as a Choose Ohio First scholarship (COFS) program for students at the forefront of advances in computer science, computer engineering, and information science. Our primary goal is to recruit academically-talented students into the OSU degree programs of Computer Science and Engineering, (Bachelor of Engineering,) and Computer and Information Science, (Bachelor of Arts and Sciences,) while simultaneously increasing the participation rate of women, underrepresented minorities, and first-generation college students in these programs. Building on a long-standing partnership between the Colleges of Engineering and of Arts & Sciences, the Ohio State EFC scholarship program will promote growth, student success, economic access, and diversity to computer science majors at Ohio State. Based on the excellent retention and graduation rates of our previous Choose Ohio First Scholarship programs (OHSE-, FSO-, and ESI-COFS), the EFC program will provide particular focus on improving the diversity within these majors.

The availability of high-tech talent is increasingly critical to many sectors of the Ohio economy, including finance, defense, health care, manufacturing, logistics, and transportation. Ohio State already has excellent academic programs in place to develop this talent, contributing to Columbus winning the Smart City Challenge and being a finalist city in the Amazon HQ2 competition. OSU also has strong cyber-industry partnerships, such the Hack OHI/O consortium and the Digital Flagship initiative. The EFC program will leverage and deepen these strengths, promoting the retention of Ohio tech talent to the state. We plan to provide industry internship, co-op, or research internship opportunities to every EFC scholarship student. With the experience from these engagements, we expect our students to be among the most "job-ready" students in the state.

Currently, new OSU students interested in computer science are admitted as pre-CSE or pre-CIS majors, and must pass certain qualifications to become actual majors. A key distinguishing characteristic of the EFC program is that students in the program will be guaranteed admission to their computing-related major after completing their first-year courses. The security of future admission to these highly selective majors will put OSU in a better position to compete with our out-of-state peer institutions in recruiting these students. The CSE department also has a diversity committee to promote diversity in its student body (and faculty,) and an active, student-run ACM-W organization, which promotes and supports women in computer science. These existing organizations will dovetail with the EFC program in support of its core goal: to retain Ohio's top students for in-state computing degrees, as well as improve the diversity of these majors.

Ohio University

Proposed Program:

Choose Ohio First for Computer Science

Proposal Abstract:

The Choose Ohio First Scholarship Program for Computer Science at Ohio University will provide renewable scholarships for appropriately qualified students majoring in Computer Science (CIP code 11.0701) at Ohio University. Ohio University expects to award $200,000 worth of Choose Ohio First scholarships per year for a period of 5 years. Ohio University Choose Ohio First for Computer Science scholarship amounts will range from $1500 to $5000 per year and will be matched by at least $200,000 in Ohio University scholarships that will be awarded to the same set of students. This program will encourage economic growth in the State of Ohio by emphasizing co-op, internships, and research experiences among the Choose Ohio First scholarship recipients. As such, the successful completion of co-op, internship, or research experience will be a condition of renewal at the junior and senior year for the Choose Ohio First scholarship students in Computer Science.

The goals of the Choose Ohio First program for Computer Science are (i) increase participation and retention in underrepresented groups in Computer Science at Ohio University, (ii) increase participation in co-op/internship/research experiences in Computer Science at Ohio University, (iii) Improve retention/graduation among students interested in pursuing a Computer Science degree at Ohio University, and (iv) help encourage business development in Southeastern Ohio by providing a ready pool of qualified students interns to regional high-tech businesses and other industrial partners. We expect to achieve these goals by actively recruiting students through a detailed recruitment plan, and through the exclusive programming to Choose Ohio First students in Computer Science at Ohio University.

Otterbein University

Proposed Program:

Computer Science Scholarships

Proposal Abstract:

Otterbein University is a college of opportunity where students who may have faced academic hurdles in the past can succeed through close faculty interaction, small classroom sizes, and a nurturing campus environment.

The primary goal of the scholarship program is to lower financial barriers for underrepresented students (women, low income students, and students from urban districts) to pursue a Bachelor of Arts or a Bachelor of Science in Computer Science at Otterbein and become part of the booming digital economy in Ohio. The secondary goal of this program is to encourage existing Otterbein students to transfer into these degree programs.

Otterbein Computer Science (CS) prepares students with a curriculum based on ACM guidelines for a wide range of careers including computer programmer, software developer, systems analyst, database administrator, network and system administrator, and information security analyst: all in-demand jobs in Ohio as reported by OhioMeansJobs.com. Program graduates report nearly 100% placement in the tech field within six months of graduation; a majority of students are from Ohio and stay in the state after graduation. We have strong corporate partnerships with top local employers such as Nationwide that generate internships for current students. The CS department is located in The Point at Otterbein, where local businesses, including JPMorgan Chase, rent space and offer students practical participation in initiatives and projects.

Choose Ohio First (COF) scholars will form cohorts with annual orientations and monthly mentoring sessions. Faculty work directly with all students on research and implementation projects; the average class size in computer science is 12 students. This support, in addition to the numerous clubs, organizations, academic services, and wellness support at Otterbein, will ensure that we can attract, retain, and graduate the future CS leaders of Ohio.

To evaluate the program's success, we will track for an increase in student enrollment, transfer to the program, and retention. At least half, if not all, of the 22 COF scholars will be placed in internship positions by their junior and/or senior year at Otterbein. The success of the students while in the program will be monitored during the monthly mentor meetings with faculty. We want to ensure our program is the best it can be, and student feedback is essential for a successful program. Employer identification and placement within six months of graduation will be monitored for the COF scholars and all CS graduates.

As part of the graduation application form, the Office of Alumni Relations collects general information from graduating students, including post-graduation employment, geographic location, and degree type. Six months post-graduation, the Center for Career and Professional Development contacts graduates to re-connect after graduation and collect information about their job placements and life after college.

Shawnee State University

Proposed Program #1:

Computer Aided Drafting and Design (CADD)

Proposal Abstract:

Computer aided design (CAD) is a significant technology in all areas of product development and manufacturing design. In today's high-tech environment, CAD is integrated with 3D parametric modeling, computer aided machining (CAM), and additive manufacturing to revolutionize the production process through rapid prototyping, rapid tooling, and rapid manufacturing. Shawnee State's CAD and Manufacturing Technology (CMT) program uses industry standard hardware and software in all classes and prepares students with the in-demand skills employers seek.
The Choose Ohio First program will attract more students to computer aided drafting (CAD) and design through a scholarship match program. Additionally, students will receive exclusive experiences that will expose them to opportunities in Ohio and will have the access to exclusive entrepreneurship activities.

Beginning in the fall semester of 2019, Shawnee State University will be offering a new degree program concentrating on computer aided design and manufacturing technology. The new program is based upon the popular CADD Manufacturing Track that has been offered at SSU since the fall of 2015. The CAD Manufacturing Track was added to the CAD program to address the demand for Plastics graduates with strong design skills. The manufacturing track added an emphasis on 3D CAD and solid modeling, plastics manufacturing, machine Tools, CNC machining, additive manufacturing, 3D printing and prototyping.
Professional employment as CAD engineering designers, detailers, and technical illustrators can be found in the following areas:
- Aerospace
- Architecture
- Automotive industries
- Building/construction
- Civil engineering
- Defense
- Electronics
- Foundry
- General manufacturing
- Machining
- Mechanical engineering
- Medical equipment manufacturing
- Packaging
- Petroleum
- Piping
- Plastics
- Quality product design
- Solar Energy
- Tool Design
- Transportation
- Utilities
- Welding

Proposed Program #2:

Digital Simulation and Gaming

Proposal Abstract:

The Digital Simulation and Gaming (DSG) degree at Shawnee State was initially created (during the 2005-2006 academic year) in a direct response to the nationwide trend of lower enrollment in computer science program. The program is very much a computer science program at its heart, but is delivered in a fun, collaborative, game-oriented manner. This program has become one of Shawnee Stateâ€™s most popular programs, and one that has seen steady growth since its inception despite challenges in increasing university-wide enrollments. The curriculum is structured so that graduates are qualified for any software development or related field, in addition to being well-suited to careers in gaming. Graduates have often commented that the hands-on background they received in this program has given them a strong advantage over their peers from other universities.

The DSG program is currently ranked #20 in the nation by Princeton Review. The program provides students with multiple opportunities to become fully engaged in a variety of aspects of video game design and development. In addition to learning and implementing mathematical and computer engineering concepts to create virtual environments and simulations, students develop a strong background in fundamentals of computer science, logic, and programming.

Students in the program routinely complete large projects and are prepared for the rigors of professional computing careers. All courses have a laboratory component in which students directly apply the theoretical concepts to complex problems. One major strength of the program is that all students complete a year-long senior capstone, working with other students to develop fully functional games or to understand and solve fundamental theoretical problems related to gaming or computer science.

Modern video games and simulations require that a broad range of skills and subjects come together in a coherent fashion. Skilled programmers, artists, and designers must work together, each understanding the other, to bring a project from concept to fruition. To create an educational experience that closely matches this real-world development environment, DSG students work closely with students in the Simulation and Gaming Development Fine Arts program at the University. The team-based open-ended project environment of these two intertwined degrees allows graduates to become comfortable in a work setting with a diverse work force of other programmers, designers, and game artists.

The unique aspects of the DSG program at Shawnee State prepare students for graduate school or careers in research and development or in a variety of computing fields.

This Choose Ohio First proposal will provide additional opportunities for students to expand

beyond the required courses and projects to topics of immediate relevancy to the University, the local Portsmouth community, or broader state or national interests.

Proposed Program #3:

Computer Engineering Technology

Proposal Abstract:

The Computer Engineering Technology degree (CET) offers a unique blend of coursework between electrical engineering technology and computer science. The degree covers a balance of topics between computer hardware and software, with both theory and applications being examined throughout the degree. A key part of every course is an applied laboratory component where students get direct hands-on exposure to the topics being studied. This enables students to directly apply the theoretical knowledge they have to real-world applications and to see the manner in which actual challenges present themselves when implementing software and hardware solutions to complex multi-part problems. Additionally, there is a senior capstone course in which students have responsibility to design and implement a project which draws from the areas of study that the student has undertaken over the previous years of coursework. Student projects have included embedded microprocessors, network-enabled applications, and complex web applications which serve the needs of commercial enterprises. Alumni of the program have found success in a variety of positions in the job market, thus giving evidence of the attractiveness and applicability of the CET degree to the challenges faced in today's world.

Sinclair Community College

Proposed Program #1:

Choose Ohio First - Computer Science

Proposal Abstract:

The statewide need for talented cybersecurity experts, secure systems administrators and software developers is growing. Demand for computer science is exploding in every sector of the economy; Computer science is the top requested skill set in the Dayton region, according to the Bureau of Labor Statistics.

Sinclair Community College is a fully accredited, two-year college located in Dayton, Ohio. Sinclair's mission is to find the need and endeavor to meet it through providing high quality, accessible learning as a college of and for the community. Choose Ohio First - Computer Science will align with Sinclair's mission and benefit students and the community in numerous ways. Sinclair's COF-CS program will be both academically and financially responsive to students' educational and career goals.

Sinclair's COF-CS program will build upon nationally-recognized computer science programming. The National Security Agency and Department of Homeland Security have designated Sinclair a Center of Academic Excellence in Cyber Defense. Further, Sinclair was recruited by the National Science Foundation to be one of only five community colleges nationwide to pilot the Cybercorps Scholarship for Service program, which for decades was limited to four-year colleges. Additionally, Sinclair has four active National Science Foundation grant projects involving faculty in the Computer Information Systems department.

Participation in Sinclair's Choose Ohio First - Computer Science (COF-CS) program will enable certificate and degree completers to enter the workforce in computing and software development. Students will have the ability to develop, solve, and recognize computer science related concepts in a way that is meaningful to a variety of organizations. Coursework in the selected academic programs will give students a foundational knowledge of computer science concepts. Moreover, with scholarship funds provided by ODHE and matched by the Sinclair Foundation, students will be able to complete their certificates and degrees with little to no cost to themselves.

This request for proposals for ODHE comes at a great time for Sinclair as a new Associate of Science in Computer Science provides an academic pathway for matriculation in Computer Science Bachelor degree at state public four-year Universities. Students completing the Computer Science AS have an opportunity to begin the curriculum needed to complete their four-year degree in a high demand skill set at a much more accessible institution with a lower cost. Sinclair's Information Technology Associate of Applied Science degree articulates to: Antioch University, Franklin University, Miami University, Ohio University, Western Governor's University, Wright State University, University of Cincinnati, and University of Dayton. Potential

exists to expand articulation agreements for the Associate of Science in Computer Science with other four-year universities in Ohio.

Stark State College

Proposed Program #1:

Stark State College Computer Science Choose Ohio First Program (2020-2025)

Proposal Abstract:

Stark State College (SSC) has been a Choose Ohio First (COF) partner since the program began in 2008. This Choose Ohio First proposal to the Ohio Department of Higher Education in Computer Science and Related Areas will support continued scholarship availability in strategic high-value computer science and related Information Technology (IT) education pathways that align with the workforce needs of important regional industry sectors as determined by the Ohio Labor Market Index. The selected pathways were identified through a collaborative process that engaged both academic leaders and recruitment/enrollment personnel at the College.

The COF-Computer Science and Related Areas project will be managed by Dr. Larry Ray, Stark State College's Department Chair of Computer Science and Information Systems, with support from SSC financial aid and admissions staff. Through this COF proposal, Stark State is requesting a total of $120,000 over the 2020-2025 grant period. These scholarships will support recruitment of incoming freshmen from rigorous secondary education programs and will support continuing sophomore COF scholars enrolled in approved CIP codes/majors, who are working towards completion of a designated associate degree or certificate at Stark State. Scholarships may also support eligible students currently enrolled at the College seeking either an internal transfer into a designated computer science or related degree program and/or seeking to add a certificate in computer science or a related area to their academic program. Scholarship awards will be applied at the end of the semester after the SSC Financial Aid Department verifies that all program eligibility requirements have been achieved/maintained.

Stark State College will provide $120,000 in matching funds through in-kind contributions of staff time and effort to support Choose Ohio First Scholars. It is possible the match could slightly exceed the 1:1 requirement of the program when support services and local scholarship allocations are tallied and included in final reporting.

University of Akron

Proposed Program #1:

The University of Akron COF Computer Science and Related Fields

Proposal Abstract:

The overall goal of Choose Ohio First (COF) is to recruit and retain students in STEMM disciplines, and to increase the number of STEMM graduates, especially those who are historically underrepresented in the STEMM fields at The University of Akron (UA.) Through this increase, the Choose Ohio First Program at UA has graduated over 1,000 students since its inception in 2008, and will graduate an additional 100 Scholars in Computer Science related fields by 2025. COF will engage both full- and part-time students to pursue a Computer Science related degree to fulfill the growing need of a Computer Science related workforce in the State of Ohio. Choose Ohio First Computer Science Programs of Innovation designation at UA will undoubtedly elevate the awareness of UA Computer Science programs and attract more students to major in this highly marketable field. The success of UA students will surely help to meet the workforce needs in Ohio, especially in Northeast Ohio, and shape the future of the Ohio economy.

The objective is to accomplish aforementioned goals through the following means:
- Active recruitment of Computer Science Scholars through school, home, and community visits.
- Proactive recruitment with current students undertaking course work in pursuit of associate degrees, business and other fields with related credits to Computer Science fields.
- Supporting scholars through intrusive advising, a combination of holistic mentorship, counseling and college readiness by Choose Ohio First's retention coordinators, peer mentors and tutors.
- Monthly social activities that promote community building and networking opportunities for first year Scholars and upper classmen.
- Continuing the program model for Tutor Mentoring and supplemental instruction for students in the Computer Science fields.
- Develop recruitment and selection strategies for creating buy-in.
â€¢ Use summer initiatives as a way to develop freshmen "plus" and increase college readiness skills.
- Demonstrate success through retention and persistence.
- Increase cohort support through first-year experience course.
- Enhance cohort support through Living Learning Residence opportunities.
- Provide Personal, Professional Progress (P3) workshops to enhance career development.
- Host Computer Science field related job fairs for COF Scholars

The University of Toledo with Lorain County Community College

Proposed Program #1:

BS, Computer Science and Engineering Technology (CSET); BS, Information Technology (ITCE); BS, Computer Science and Engineering (CSE)

Proposal Abstract:

Recognizing the Ohio and regional need for a highly trained computing workforce with 4-year degrees, the Choose Ohio First â€“ IMProving Retention and Student Success in Computing (COF-IMPRESS-C) project provides financial support and an ecosystem of high-impact curricular and co-curricular activities to increase the success of academically talented students. The project brings together The University of Toledo's programs in computing offered through its college of engineering and UT's Jesup Scott Honors College, an inclusive college designed around high-impact educational practices.
The COF-IMPRESS-C team will leverage student-centered strategies and academic support, such as undergraduate research, faculty/peer mentoring, and academic success sessions to enhance academic and personal success. COF-IMPRESS-C will facilitate the recruitment, retention, and matriculation of scholarship recipients, provide them with access to a continuum of student support services, resources, and opportunities for professional growth, and prepare scholarship recipients for graduate school or careers in computing. The program will award 40 scholarships in years 1 & 5 and 80 scholarships in years 2-4. COF-IMPRESS-C will facilitate dual-enrollment of students in the Jesup Scott Honors College, allowing an additional focus on developing leadership, entrepreneurial skills, and a success mindset. Specific project goals include:
Goal 1: Expand the number and diversity of academically talented individuals entering the computing pipeline; recruit and retain these individuals in computing programs. The following objectives will be pursued:
1. In partnership with regional schools, increase the awareness of potential college students about career opportunities and 4-year programs in computing.
2. Improve retention and graduation rates of undergraduate computing majors.

Goal 2: Add to the body of knowledge regarding best practices in computing education and promote the employment of computing graduates to meet the local and regional workforce needs. Specifically:
1. Comprehensively evaluate program activities; aggressively disseminate COF-IMPRESS-C materials, best practices, and statistical information.

The COF-IMPRESS-C team is led by the UToledo College of Engineering and includes Lorain County Community College (LCCC). Internal partners include the Jesup Scott Honors College, the Counseling Center and the Learning Enhancement Center. External partners include the Toledo Public Schools, and corporate partners that will provide co-op and full-time employment.
COF-IMPRESS-C scholars in 2-year programs will have the opportunity to continue receiving COF-IMPRESS-C scholarships in 4-year programs at UT. Nationwide, the majority of first-

generation and under-represented students begin their undergraduate studies at community colleges; partnerships with community colleges will be leveraged to recruit diverse transfer students.

University of Cincinnati

Proposed Program #1:

Diversifying Yield and Retention in Computer Science and Computer Engineering

Proposal Abstract:

The goal of this project is to increase, retain, and graduate the number of underrepresented (gender, ethnic, economically disadvantaged, and first-generation) computer science students at the University of Cincinnati (UC) through a designated Choose Ohio First (COF) Scholars Program. This will be accomplished by creating the best learning environment for our COF Scholars, so that they become well-prepared for the rigors of employment in an ever-changing, technical, global market. To achieve this goal, the objectives of this project are to:
1. Increase the number of underrepresented students in computer science and related majors.
2. Increase the retention of those students until graduation.
3. Work aggressively towards parity with these groups' representation in the state of Ohio.
4. Place graduates into employment in relevant fields or in graduate or professional school.

To achieve these objectives, we will provide a supportive experience in a multi-year COF Scholars Program (CSP) with scholarships to 20 new COF Awardees per annual cohort from each of the 2020 through 2025 entering classes for average COF Scholarship awards of $3,500/semester for 8 semesters for a total of $28,000 per student (CEAS students take 5 years to complete their undergraduate degrees due to co-op). The COF Scholars will participate in our summer bridge program (in its 31st year), along with selective first year learning communities emphasizing a community of peer support and one-on-one faculty mentors. The bridge program will provide an exceptionally supportive, yet rigorous, academic experience for these COF Scholars and for women, underrepresented, ethnic students enrolling in computer science and related disciplines in the Colleges of Engineering and Applied Science. Undergraduate (UG) engineering programs in the College of Engineering and Applied Science (CEAS) span five academic years (AYs) to allow for five semesters (including summer) of required co-op. In view of this, the quantifiable outcomes against which we will measure our success are:
1. We will graduate 61% of the students from the targeted programs and populations.
2. The targeted incremental retention rates in CEAS for the COF Scholars' are:
(i) 76% from first year to sophomore;
(ii) 86% from sophomore to pre-junior;
(iii) 93% from pre-junior to junior; and
(iv) 100% from junior to senior.

100% of students who graduate will be in computer science and computer engineering jobs and/or graduate school.

Proposed Program #2:

Choose Ohio First Information Technology Scholars

Proposal Abstract:

The objective of the Choose Ohio First Information Technology (COF IT) proposal is to increase the quality, quantity, and diversity of Ohio residents in the information technology field. The proposal integrates with a University of Cincinnati (UC) initiative, the Early IT, and supports its strategic direction. The Early IT is an ecosystem that brings together school districts, Community Colleges (CC), the University, and the IT industry into a partnership to strengthen the regional economy of Southwest Ohio, and the State.

The UC COF IT proposal will recruit 290 COF IT scholars. Of those, 140 scholars will be first year students recruited into the Bachelor of Science in Information Technology (BSIT) degree and will receive annual scholarship for one semester or $6,130. The remaining 150 scholars will be high school teachers pursuing a Competency-based Graduate Certificate of Information Technology to earn the Computer Science endorsement. They will receive scholarship equal to 50% of the cost of the graduate certificate or $3,617.

The proposal is requesting $4,281,850 in scholarships that will matched 2.05 to 1. Over $8,767,142 will be contributed through institutional and partners match. All the COF IT Scholars in the BSIT program will participate in five semesters of work experience (CO-OP), at least one semester per year. The COF IT Teachers Scholars will be invited to participate in the Worldpay High School Teachers Fellowship program for continued professional development.

The UC COF IT program will leverage several synergistic initiatives including the UC NEXT apprenticeship program, the National Security Agency (NSA) GenCyber Teachers program, and the Ohio Cyber Range (OCR) initiative. The Early IT Ecosystem enables high school (HS) students to complete the first year of the UC BSIT program and receive automatic admission to complete the bachelorâ€™s degree, 20 months of CO-OP experience, and a possible masterâ€™s degree in just 4 years after HS. In addition, the Early IT offers HS teachers a Competency-based Graduate Certificate program, submitted for approval for the Computer Science endorsement, to qualify to teach the College level IT courses in their HS. The NEXT apprenticeship program is a new Department of Labor grant for UC to integrate apprenticeship. Furthermore, UC is a recipient of the annual NSA GenCyber Teachers program that offers Cybersecurity training and curricular development for HS teachers. Finally, UC is in partnership with the Ohio Adjutant General and ODHE to establish the OCR. All COF IT scholars will use the OCR as part of their course work. HS teachers will learn how to use the OCR in their classroom.

The enrollment track record, the reputation of the UC BSIT program, the co-op placements, and the synergistic initiatives give us confidence that this proposal will significantly increase the number of Ohio residents entering into and successfully completing the information technology major.

University of Dayton

Proposed Program #1:

COF - Computer Science and Related Fields

Proposal Abstract:

The University of Dayton (UD) is a top-tier Catholic research university committed to a diverse, inclusive learning environment. As a Marianist university, UD educates the whole person, linking learning and scholarship with leadership and service. 97% of students find success within six months of graduation. UD is listed as one of the Top 50 "Colleges that Create Futures" and Top 20 "Best Schools for Internships" according to the Princeton Review. Through UD's Research Institute, Fortune 500 research facilities on campus and numerous partnerships throughout the city of Dayton, UD students and faculty work side-by-side with professionals to develop lasting applied science and engineering solutions that create forward technological momentum and make economic impact.

This proposal is designed to meet the economic needs of the State of Ohio in Computer Science and related fields by recruiting students to UD with the Choose Ohio First scholarship program. This proposal is supported throughout the institution with executive commitment from the President, Provost, Vice Presidents and Deans. Implementation will be accomplished collaboratively with faculty leadership from the College of Arts and Sciences and the School of Engineering, as well as leadership from the Office of Admission and Financial Aid, Career Services and the Cooperative Education Office. Key constituents will meet regularly to coordinate efforts recruiting, enrolling, retaining and successfully graduating COF scholars.

This proposal meets a number of criteria from the ORC including:

- Addresses a statewide educational need
- Demonstrates productivity and/or future capacity of the students that will be recruited
- Creation of additional capacity in educational or economic areas of need
- Increases the likelihood that students will successfully complete their degree programs in computer science or related fields
- Provides the opportunity for students to attend who could otherwise not afford to do so
- Institutional commitment to provide financial resources (scholarships and grants) for up to eight semesters of attendance
- Scholarship recipients will be individually selected and supported to ensure engagement as COF scholars and ultimately successful degree completion

The University of Dayton is well-positioned to recruit, educate and graduate students to have successful careers in these high-need fields. UD will engage in a comprehensive recruitment strategy that will identify degree and certificate seeking students interested in obtaining a degree in the selected majors for the Choose Ohio First Computer Science and Related Areas RFP. Selected majors include: Computer Science, Computer Information Systems, Computer Engineering, and Electronic and Computer Engineering Technology. According to ohiomeansjobs.com, there are over 154,000 open positions in Ohio in the computer engineering and computer science fields. Additionally, Indeed.com shows over 2400 open

positions in computer engineering in Ohio and 5400+ jobs related to computer science in Ohio. Our recruitment plan will include staff visits to over 100 Ohio high schools. In addition to the high school visits, we will attend numerous college fairs, offer individual admission and financial aid interviews and host high school counselor workshops. Each of these activities will allow us to further discuss the Choose Ohio First scholarship program and encourage qualified candidates to consider attending UD.

On campus, we will offer a series of open house events and over twenty admitted student events in the spring. At each opportunity, we will share the scholarship information with prospective students and parents and provide additional details as needed.

The University of Dayton and Sinclair Community College partnered in 2016 to create the UD Sinclair Academy. The Academy helps remove financial hurdles that might exist for some students, making a four-year, top-tier private education more accessible and affordable. Academy students lock in net-tuition for their junior and senior years at the rate in effect when they enter the Academy. While enrolled at Sinclair, these students are dual-admitted into UD and have access to UD resources including advising, student clubs and organizations as well as physical access to campus facilities including the recreation center and library. Computer Engineering and Electronic and Computer Engineering Technology are both approved degree pathways for the Academy, so we will be able to recruit COF students from our Academy partnership.

Through our advising process, faculty and professional advisors will work with students who are undeclared in the School of Engineering or College of Arts and Sciences to explore majors in the selected fields. This will be done during advising meetings with the students with a focus on their particular abilities and gifts in specific fields of interest. Students that choose to declare a new eligible major (i.e. internal transfers) will be considered for eligibility of the COF scholarship during the first semester of their enrollment in the selected major.

The University of Dayton is the largest private institution in the State of Ohio and has been recognized nationally for our transparent approach to tuition that is intended to make a top-tier private education affordable. For each admitted student, we provide a four-year overview of costs so there is a clear understanding and assurance for families about the financial investment that they are making. UD scholarships and grants increase each year to offset any increase in tuition, so net-tuition at UD stays the same for each student (for up to eight semesters). Additionally, we have eliminated all fees and surcharges, so there are no hidden expenses for families. Since implementing our transparent approach to tuition, our four-year graduation rate has increased by eight percentage points and we have reduced student borrowing by 28%. UD has a strong 6-year graduation rate that significantly outperforms national public and private average graduation rates, as well as average graduation rates at Ohio public institutions.

The University of Dayton will intentionally connect employers and students to opportunities for internships, undergraduate research and employment in the in-demand occupations. Co-op and internship opportunities available through Ohio Means Internship and Co-op (OMIC) will be exclusively provided for Choose Ohio First students. Further, exclusive programming will be developed with two purposes: 1.) to assist students in finding internship, co-op or full time work, and 2.) to assist students in succeeding in professional positions. This program will be developed in collaboration with industry partners and the Co-operative Education and Career

Services offices.

During a student's academic career, they will have opportunities for experiential learning to deepen their understanding and application of classroom learning. Opportunities include designing and implementing computer-based processes or partnering with a local company to solve an identified engineering problem. The holistic education that begins in the classroom, combined with internship and co-op experiences, prepares students for the workforce and challenges them to analyze the local and global impact of their work. At UD, we deliver education that is highly integrated inside and outside of the classroom, producing engaged learners and strong outcomes for our graduates. We believe that this aligns with the intent of Choose Ohio First in that it will result in increased higher education participation and strong completion rates for our COF scholars.

University of Findlay

Proposed Program #1:

Computer Science, with Emphasis Areas

Proposal Abstract:

The University of Findlay (UF) stands as the only four-year institution in northwest Ohio purposely partnering with government, economic development, non-profit, and regional industry sectors to implement a workforce development initiative that will reduce the region's workforce gap via a relevant talent pipeline. UF wants both its students to graduate with a degree and readily attain employment in their desired career as well as for regional employers to gain access to top talent. Employers consistently contact UF for computer science students and graduates due to the expansive demand of this profession in northwest Ohio and across the state. These employers desire UF's high-quality computer science students/alumni who harbor the knowledge and hands-on skills essential to the field that make them marketable and productive team members.

UF's COF program serves eligible, selected students pursing a bachelor of science in computer science within one of seven emphasis areas (i.e., business, computer systems, computer technology, data analytics, information assurance, mathematics, and web and database). Selected scholars will receive $7,500 per academic year in Choose Ohio First (COF) scholarship aid until graduation, along with any awarded institutional merit aid packaging (averaging $9,000-$15,000 per year), provided that certain expectations are met to retain financial support. Scholars are selected by a faculty/staff committee based on cumulative grade point average; ACT/SAT scores; and evidence of success and preparation for the computer science field. Awarded COF scholars will receive unique support and resources to encourage their persistence to degree completion, including academic advising, a COF-designated community of practice, industry and university mentorship, and retention tracking and support. Scholars will also receive numerous opportunities to foster their soft skills and knowledge base via special networking sessions with regional industry and business representatives, off-campus service-learning experiences, social events, and research and scholarship presentations.

During this five-year COF grant period, UF's program will:
1) Recruit and select qualified scholars to enroll in the computer science program so a greater number of trained individuals are ready to enter the workforce within the next five years.
2) Provide scholars with ongoing financial, academic, and co-curricular support to persist to a bachelor of science in computer science on time and with minimal financial burden.
3) Provide scholars networking and experiential learning opportunities that prepare them with the academic and soft skills required to become productive professionals and leaders within their places of employment.

Urbana University

Proposed Program #1:

Choose Ohio First Scholarships for Urbana University

Proposal Abstract:

Urbana University is requesting a total amount of $5.4m to recruit and retain 20 students annually over a period of five years. Urbana will provide a total of $2,942,500 in matching funds and in-kind contributions. The university requests $2,457,500 from the Ohio Department of Higher Education.

Urbana University, founded in 1850, is an accredited private liberal arts institution in Urbana, Ohio. Consistent with its mission, the institution has developed quality academic programs. Current undergraduate degree programs that are included in this application include: (1) Computer Science, (2) Cybersecurity, (3) Information Technology, (4) Web Development and (5) Information Systems.

These programs were developed by highly qualified academics working with industry experts who serve on the programs' advisory boards. The programs enjoy maintenance from the University's International Institute for Innovative Instruction, in collaboration with faculty and advisory boards. While the Choose Ohio First scholarship will support the recruitment, development and education of students in these fields, it will not displace the allocation of existing resources previously committed to managing the programs.

In May 2019, the University became an NSA/DHS Center of Academic Excellence (CAE) in Cyber defense education. The designation validates Urbana University's commitment to excellence in cybersecurity education. The state of Ohio, and the entire country is seeing an increase in large-scale breaches suggesting that not only are the number of security breaches going up, but that they are increasing in severity as well. There are over 130 large-scale, targeted breaches in the U.S. each year, and that number is growing by 27 percent annually. Urbana's academic programs develop talents to combat the threats to state and national security. Data from Ohio Means Jobs and Cyberseek.org indicate that the four academic programs included in this application enjoy a healthy job growth and are classified as in-demand careers. These programs are projected to see a job growth higher than the national average, with information security analysts for example (Cybersecurity discipline) expected to see a job growth of 28 percent between 2016 and 2026. Reports from industry experts, and advisory board members show a good alignment between the institution's programs and the needs of industry.

Urbana University will work with it's over 230 Community College Alliance partner institutions (CCA), and its office of admissions to recruit students across the state of Ohio. Relationships developed with the military and other organizations such as Tech Corps, Women-in-Cybersecurity, and Per Scholas would allow Urbana University to recruit minority and under-represented students. The institution will work with its CCA partners to encourage the transfer

of students who would have completed a 2-year Associates degree in these fields to Urbana University in order to complete their degrees.

This application will support the education of highly skilled professionals in Computer Sciences and related fields, and help contribute to the growth of the Ohio economy.

Western Governors University

Proposed Program #1:

WGU Choose Ohio First Computer Science Scholars

Proposal Abstract:

The WGU Ohio Scholars of Computer Science (SoCS) program is designed to increase the number of Ohioans holding advanced competencies, skills, and expertise in high-demand computer science fields. The program strengthens the talent pipeline for Ohio employers and supports the long-term career pathways of individuals. SoCS supports Computer Science scholars throughout the recruit-to-student-to-alumni lifecycle as they prepare for in-demand technology careers in Ohio. SoCS students exclusively benefit from WGU services that go above and beyond the 1:1 experience all WGU students receive. SoCS provides institutional scholarship support, tutoring, field/internship opportunities, career connections, conference and research engagement funding, and targeted social activities. Because women continue to be under-represented in IT careers in Ohio, in the United States, and worldwide, recruitment for the program focuses on this historically under-represented population. Targeted marketing and recruitment efforts are led by the WGU Ohio Strategic Partnerships Managers (3) and Public Relations Manager.

WGU Ohio will provide the direct support for the SoCS Program, led by Chancellor Rebecca Watts, Ph.D.. WGU Ohio offices are:

WGU Ohio
325 John H. McConnell Boulevard, Suite #375
Columbus, OH 43215

Wright State University

Proposed Program #1:

Western Ohio Pathways to Digital Workforce Augmentation

Proposal Abstract:

These Choose Ohio First scholarship pathways are designed to eliminate financial and academic barriers for a wide variety of students across all academic majors while encouraging these students to complete degrees in computer science-related disciplines. By 2024-2025 we expect to enable an additional 180 computer science degrees in targeted areas and an additional 100 graduates with marketable expertise.

A large number of students face significant roadblocks to entering computer science-related disciplines and completing CS-related degree programs. Many students fear they lack the necessary preparation in math and science, or they assume they are too far behind to compete. Others mistakenly believe a career in computer science means confinement to a cubical, interfacing with machines rather than people. By overestimating the risks and underestimating the rewards, many students miss the opportunity for a career path that would change their life and the world around them.

Our Choose Ohio First Scholarships will be targeted to (1) expand the number of students trained in computer science-related areas by providing a low-risk computer science certificate entry point within the Wright State general education core, (2) attract new "direct admit" students, (3) increase access to computer science major programs through 2+2 pathways to allow seamless transitions from two-year to four-year degree programs, (4) new degree pathways at the Wright State Lake Campus that transition to four-year degrees on the Dayton campus thereby increasing access for students in the northern Miami Valley, (5) students with disabilities to expand on the success of the Ohio Stem Ability Alliance, and (6) students who have already completed a bachelor's degree in a STEM area outside of computer science to rapidly transition into a degree program in computer science through an intensive "boot-camp" remedial program.

The impact of our COF programs will be continuously tracked by our Career Services office to record the number of COF graduates, internships, job placement, job title, job location, and other relevant data. An annual report summarizing this data will be maintained in the Department offices.

Wright State University has committed to a minimum of a 1:1 match of all COF scholarship funding through a combination of Wright State internal scholarship funds and program support expenses. We anticipate the actual match being greater than 2:1 as we include COF scholar's internships and co-op experiences.

As the Lake Campus is a regional extension of Wright State, we are including COF scholars beginning their education at Lake Campus as a part of this proposal.