

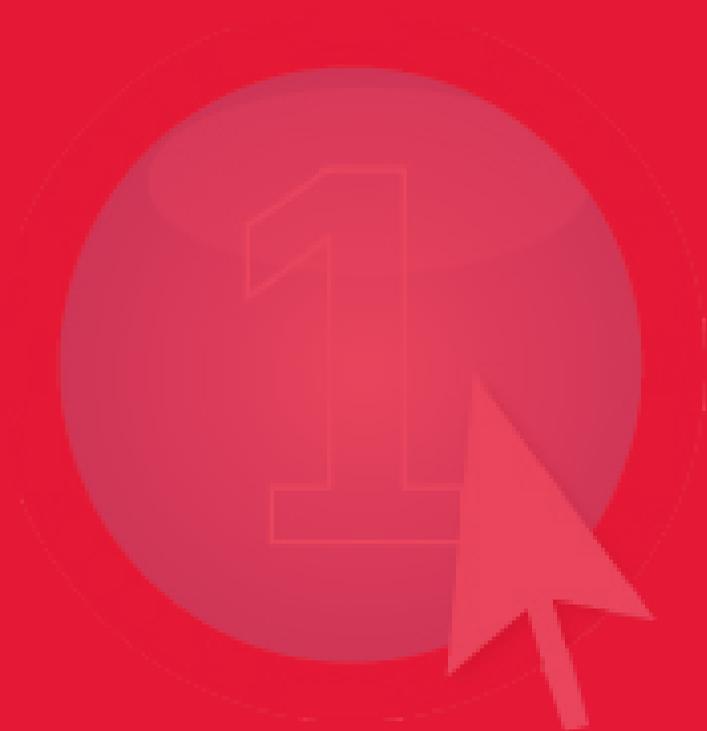


Choose hio First

2014-2015 ANNUAL REPORT

Ohio

Department of
Higher Education





Contents

Executive Summary	5
Demographic Data	13
Program Descriptions by Primary Focus Area	19
The Economic Impact of Choose Ohio First	38
Choose Ohio First: Keeping the Momentum	40







Executive Summary

A citizenry educated in the areas of science, technology, engineering, math, and medicine (STEMM)-related disciplines is critical to the economic competitiveness of the state of Ohio and the nation. Many employers in Ohio cannot find the STEMM talent they need to stay competitive and grow in the global marketplace. Even during the most recent economic downturn, STEMM skills have remained in high demand – for the STEMM workforce there are 2.3 jobs for every unemployed person; for the non-STEMM workforce there are 3.9 unemployed people for every job. Not only are STEMM graduates more likely to land a job, those jobs also pay more and make better use of their skillsets. STEMM jobs are growing at a rate that is 1.7 times faster than non-STEMM jobs. Labor market projections require a need for an expansion of those trained in STEMM fields.

The total number of STEMM degrees awarded at Ohio's public colleges and universities increased from 25,635 in FY 2007 to 39,195 in FY 2015.

The primary objectives of the Choose Ohio First (COF) scholarship program are to support increased participation, retention and success of students majoring in STEMM and STEMM education fields, and in so doing to advance the economic growth of each region of the state. The data demonstrate the need for the program. Fewer than 40 percent of all students who enter college intending to major in a STEMM field actually complete a STEMM degree; the numbers are far more bleak for women, students of color, those who are low-

income and those who are the first in their families to attend college. In comparison, students in the COF program have better outcomes on all measures. COF has become the state's premier model for recruiting and retaining talented students in STEMM and STEMM education fields. The COF scholarship program ensures that an increased number of students enter into the STEMM teaching profession and graduate from some of the most innovative programs the state has to offer.

A surprising statistic was the increase in the number of technology and computer-related majors from what was previously reported. This is an area of economic opportunity in the state, and the number of COF students increased from 5% in FY 2013 to 18% in FY 2015.

In the 2014-2015 academic year, nearly \$17 million was awarded and disbursed to nearly 4,200 COF scholars attending an Ohio college or university. The participating institutions report matching contributions totaling more than \$37,174,649 in cost-share through June 2015. Matching funds are used to revise and develop new curricula in the STEMM disciplines awarded COF funds, supplement student travel

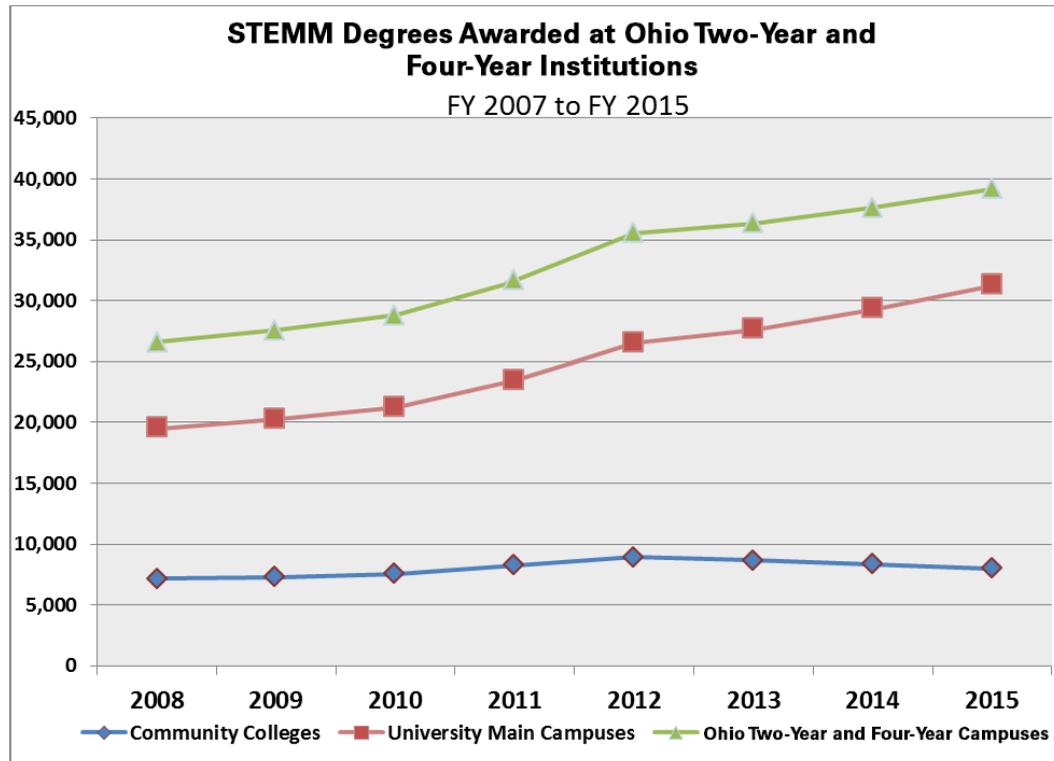
to industry conferences and research symposia, and leverage the involvement of businesses in the professional development of Ohio's future innovators. Matching funds also are generated by local and national competitive grant projects leveraged by many of the Choose Ohio First programs. To date, 49 public and private campuses have received COF funds.





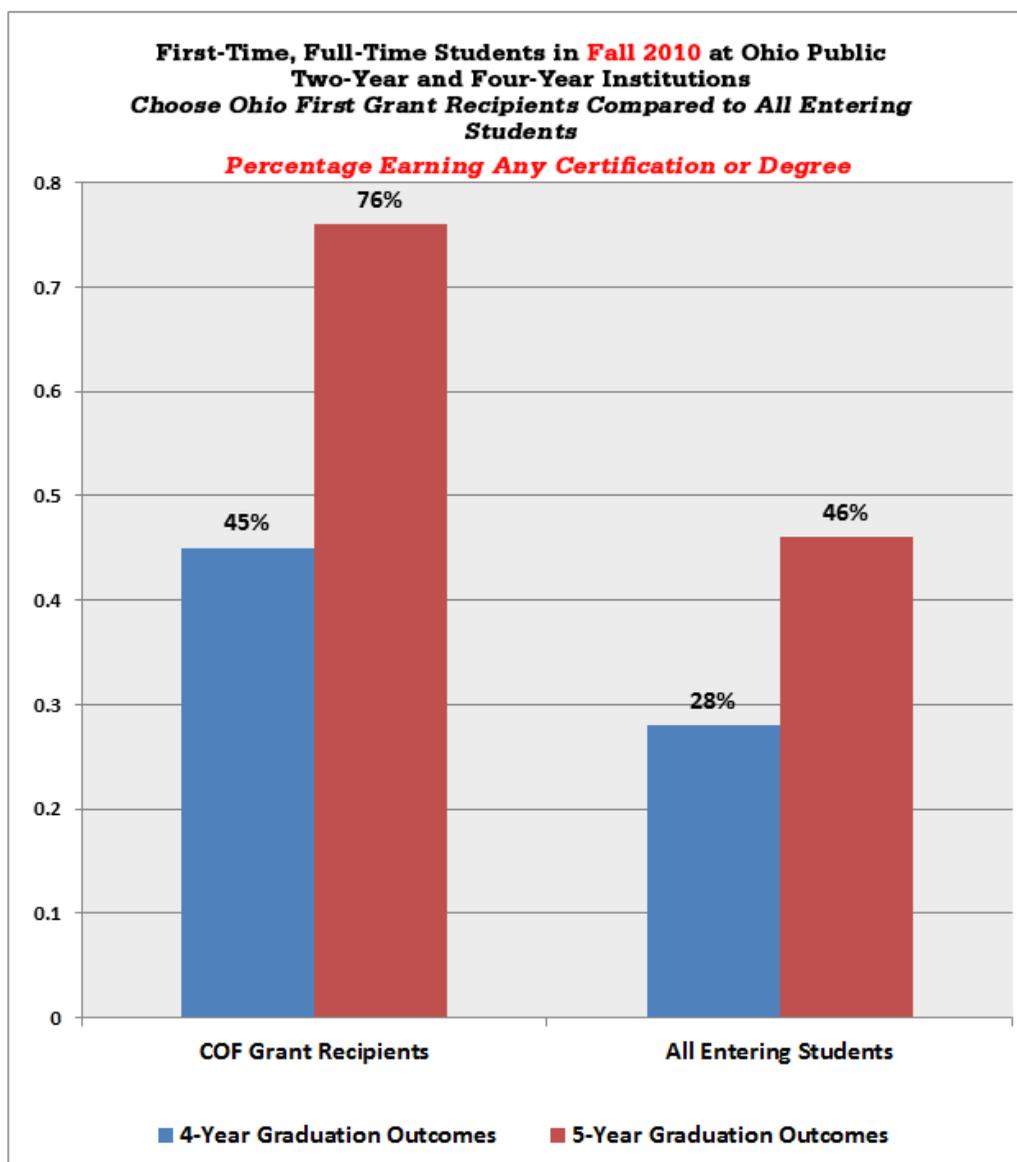
Choose Ohio First Programs are Producing Results

- » Growth in STEM degrees awarded in Ohio has increased from 25,635 total students in FY 2007 to 39,195 total students in FY 2015, representing a 65 percent increase. The increases in degrees awarded have been more prolific at the university level; however, community colleges are seeing growth as well.



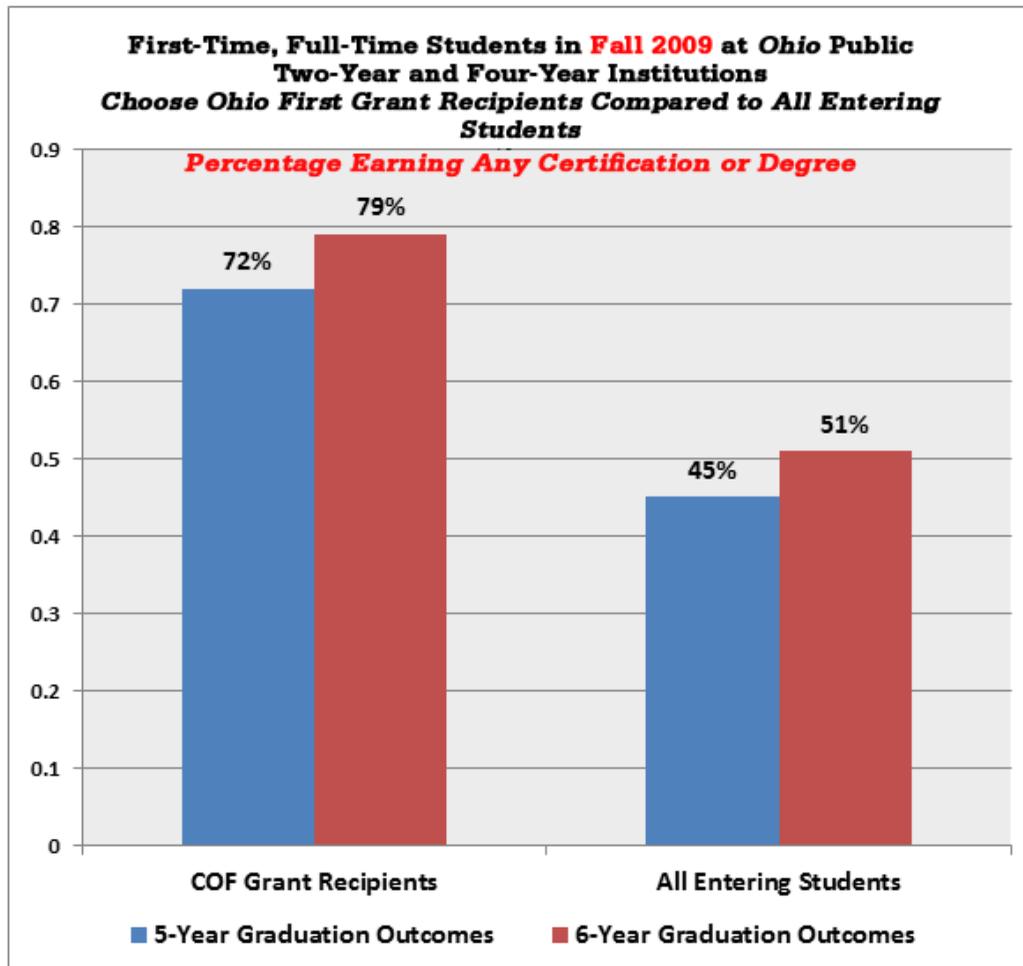
- » Graduation outcomes for the fall 2010 entering cohort of Choose Ohio First scholars include:
 - At Ohio's colleges and universities, 45 percent of COF students earned a degree within four years. Of the remaining students, 50 percent were still enrolled and working toward a degree.







- » The graduation outcomes for the Fall 2009 entering cohort trended slightly higher. The five- and six-year graduation rate for that cohort included:



- » On average, COF students earn more credits than their non-COF counterparts over the same period of time. More credits mean a shorter time to completing a degree!
 - The most recent class of graduates earned, on average, 71 credits at a community college and 104 credits at a college or university. This compares to 62 credits and 98 credits, respectively, for non-COF students during the same time frame.





Updates on the Woodrow Wilson Ohio Teaching Fellows

The Woodrow Wilson Teaching Fellowship institutions, including John Carroll University, the University of Akron, the University of Cincinnati, The Ohio State University, Ohio University, the University of Toledo, and the University of Dayton have produced nearly 300 highly qualified teachers in mathematics and science during the active operation and recruitment cycle of the program from 2011 through 2014. The mission of the program was twofold: 1) to recruit the best and brightest to careers in middle and high school science and math teaching; and 2) to improve the quality of the teacher education programs in the partner universities.

The graduates of the Woodrow Wilson Ohio Teaching Fellowship have the potential to impact the lives of thousands of secondary students. Many candidates entered the program with extensive credentials and experience, including advanced degrees, and 10 or more years of workplace experience in companies such as Lockheed Martin, General Electric and Owens Corning. Several Fellows also were veterans of military service.

Overall program highlights include:

- » 314 Fellows were named over the life of the program in Ohio; 297 of these students are on track to serve in a high need school district for their first three years of teaching.
 - Approximately 55 percent of Fellows are female; 45 percent are male.
 - Approximately 13 percent of Fellows are from a racial or ethnic minority.
- » Fellows will receive ongoing mentoring during their first three years of teaching. The final year of mentoring for Fellows in the program will be 2018.
- » The Woodrow Wilson Ohio Teaching Fellowship program has made a direct connection to the workforce needs and academic standards critical to the success of schools.
- » Steps have been taken at each campus to sustain tenets of the program t, including integrating mentoring activities into established Master of Education degree programs.

The Woodrow Wilson program focuses on three key aspects of the teacher education continuum:

- » **Program Transformation** – Program facilitates a strong collaboration between arts and sciences, education, engineering, and technology faculty in program development and delivery.
- » **Student Recruitment and Selection** – Program provides mechanisms for recruitment of high-potential students, including current college seniors, recent graduates and career changers.
- » **Ongoing Mentoring Support** – Program provides a structured, proven mentoring program for Fellows for three years after graduation.





Program Highlights at Partner Universities

The Ohio State University

- » Redesigned courses and summer programming have improved teaching quality and pedagogical content knowledge; now offered to all secondary education students.
- » The Woodrow Wilson Ohio Teaching Fellows program was the catalyst to reinstate the Bachelor of Science in Education program.

John Carroll University

- » Fellows demonstrated a need for additional support in general teaching methods; the campus responded by shifting a research methods course to accommodate additional instruction in teaching methods.
- » Faculty for methods courses were shifted to include professors with secondary school math/science teaching experience.

The University of Akron

- » Fellows gained real-world experience throughout the program; one innovative aspect of the program is that Fellows take campus classes in a public, progressive STEM high school in an urban setting.
- » Planning to conduct a pilot study implementing an undergraduate one-year clinical experience is under way, based on the success of the Woodrow Wilson Ohio Teaching Fellowship model.

The University of Cincinnati

- » The Woodrow Wilson Ohio Teaching Fellow program model has been institutionalized as an accelerated three-semester program.
- » The program model is attractive to many internal transfer students from the School of Engineering, resulting in courses co-taught by engineering and arts and science faculty.

The University of Dayton

- » Curriculum gives Fellows connections to practice through their clinical labs and intensive clinical experiences starting each fall.
- » Clinical observation is a strong and critical aspect of the program; Fellows are observed regularly by their university supervisor every one to two weeks throughout the year.

The University of Toledo

- » The program has a strong relationship with the Toledo Public Schools (TPS) district, where all Fellows were offered positions upon graduation.
- » The program is exploring a new online platform for mentoring as a continuation of the curriculum; Apereo Open Academic Environment (OAE) will be used to connect Fellows, faculty and cooperating teachers as part of a virtual professional community.

The Ohio University

- » The clinical-based model was adapted and adopted by all secondary education areas.
- » The program continues to expand partnerships in rural school districts and is changing the culture of Ohio University's relationship with partner school districts – mentor teachers prefer to work with teacher candidates with yearlong clinical placements.





Updates on the Primary Care Medical and Nursing Scholars

Ohio's medical providers labor every day to take care of their patients, but experts were concerned that too few of some types of health professionals were not located where they are most needed. Rural Ohioans and those living in other underserved areas across the state are especially vulnerable to health sector workforce shortages. The problem is two-fold. First, Ohio trains more physicians than it retains. According to data from the Association of American Medical Colleges, only 44 percent of physicians who graduated from public medical school in Ohio actually stay in Ohio. As a result Ohio ranks 24th out of 50 in primary care physicians per capita. The second issue is that areas underserved by primary care physicians are disproportionately minority and low-income. This population would benefit from a primary care presence within the community.

To address a statewide shortage of primary physicians and advanced practice nurses, Ohio HB 198 of the 130th General Assembly established the Primary Care Scholarships in Medicine and Nursing, were launched as an arm of Choose Ohio First and codified in Ohio Revised Code 3333.611 and 3333.612. The program offers scholarships to 50 medical students for up to four years of medical school and 30 nursing students for up to three years of graduate education. The recipients agree to remain in Ohio after their residencies for no fewer than three years, and to work in medical practices that accept Medicaid patients. These COF scholars will impact the lives of thousands of Ohioans they will serve in high-need practices and positively affect the quality of care provided in high-need areas around the state. A strong primary care workforce is a critical element of the PCMH model, and the scholarships are a strategy to recruit and retain students dedicated to medical education and training in promising models of care.

The participating medical schools in Primary Care Scholarships in Medicine and Nursing are The Ohio State University, Case Western Reserve University, Northeast Ohio Medical University, the University of Toledo, Wright State University, Ohio University, and the University of Cincinnati. The participating nursing schools are the the University of Akron, Kent State University, The Ohio University, the University of Toledo, and Wright State University. The goal of the program is to integrate primary care concepts into the learning of medical and nursing students around the state, while incentivizing students to stay and practice in Ohio. Some of the innovative practices developed on the campuses include:

- » The University of Cincinnati College of Medicine teaches PCMH curriculum longitudinally in three required courses for students: The Longitudinal Primary Care Clerkship (LPCC), Physician and Society, and the Family Medicine Clerkship (FMC).
 - The first graduate from this partnership matched in Ohio and will practice residency at the Christ Hospital in Cincinnati, Ohio.

- » Wright State University College of Medicine is committed to a curriculum that expands primary care opportunities, especially in patient-centered medical homes and in rural Ohio. Students currently rotate in patient centered medical homes, and they are finalizing an agreement that will provide opportunities for rotation in family medicine and pediatric sites.
 - Graduates have matched in Ohio and will practice residency at Riverside Methodist in Columbus, Ohio and at the Boonshoft School of Medicine in Dayton, Ohio.

- » Northeast Ohio Medical University has incorporated the PCMH curriculum across the four years of medical school. The College of Medicine also plans to work directly with the practice sites transformed into PCMH model sites through funding provided by HB 198.





- » The University of Akron aligns the retention and intrusive support efforts found in its traditional undergraduate COF program with the efforts being performed with the graduate PCMH students.
 - Three out of the six participating students are from a historically underrepresented or minority background. One student is a male, first-generation student, a population seeking nursing in very low number traditionally.

- » The Ohio University College of Osteopathic Medicine provides discussions and field assignments that engage students with the basic tenets of the PCMH model: access, comprehensiveness, integration/coordination of care, and relationships.
 - Ohio University continues to lead the state in primary care production, and graduates have matched in Ohio and will practice residency at Summa Western Reserve Hospital in Cuyahoga Falls, Ohio and at Summa/Akron City Hospital in Akron, Ohio.

- » Students at the University of Toledo are engaged in innovative learning experiences, including shared medical appointments with family medicine students/residents, monthly interprofessional case conferences and simulations with an interprofessional team.
 - University of Toledo graduates will practice residency at the Cleveland Clinic in Cleveland, Ohio and Children's Hospital in Akron, Ohio.

The PCMH partnership has 10 goals in its curriculum and programmatic activities, which are:

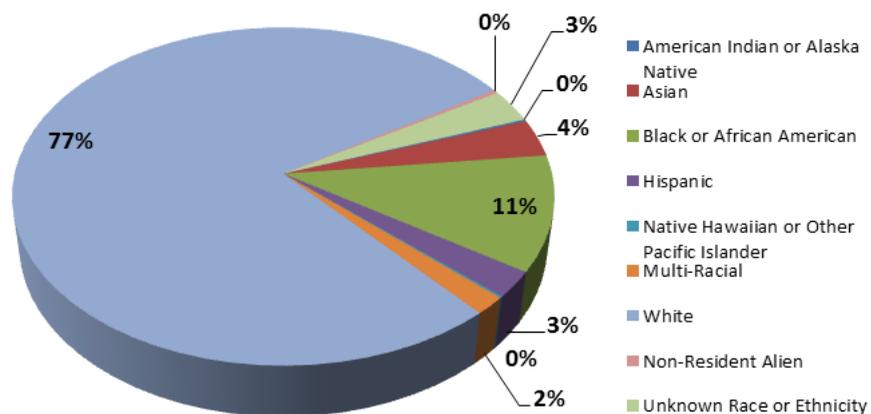
1. Students will demonstrate understanding of the importance of a personal clinician to the health of individual patients and the population as a whole.
2. Students will recognize the importance of patient-centeredness in successful healthcare outcomes.
3. Students will recognize the importance of the team approach to patient care in successful health care outcomes.
4. Students will recognize the importance of integrated, coordinated care in successful health care outcomes.
5. Students will apply the principles and practices of evidence-based population management and public health in an equitable manner to advance the health of the community.
6. Students will recognize the importance of access to care that is high in quality and equitably applied in a way that meets the needs of the patient with respect to time of service and manner of delivery.
7. Students will recognize the importance of continuous quality improvement, using best current evidence to develop and refine best practices for patient care.
8. Students will understand the importance of information systems to the functionality of the patient-centered medical home.
9. Students will demonstrate appropriate leadership skills.
10. Students will advocate for the Patient Centered Medical Home as a means of improving the health of the community.





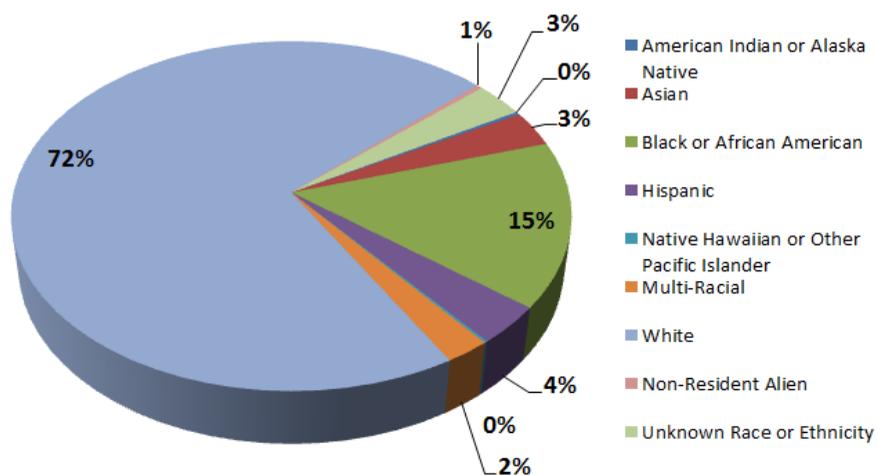
Choose Ohio First Demographic Data

2015 Choose Ohio First Student Race/Ethnicity



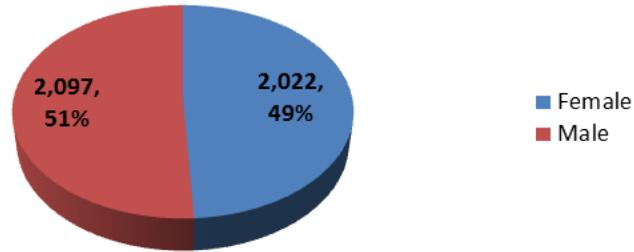
In 2015, 23 percent of COF scholars were from a racial or ethnic minority, representing a slight increase from 22 percent in 2014. Approximately 11 percent of COF scholars are African American and three percent of COF scholars are Hispanic/Latino. African Americans (15.0 percent first-generation/low-income) and Hispanic scholars (4.0 percent first-generation/low-income) also are categorized as first-generation or low-income at rates that exceed their representation in Choose Ohio First. These data elements are of particular interest, as Ohio will need the participation of all its citizenry to move the needle toward increased degree attainment.

2015 Choose Ohio First - First Generation by Race

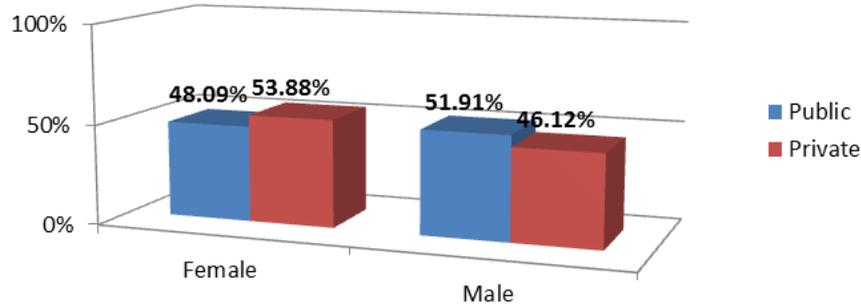




2015 Choose Ohio First Student Gender

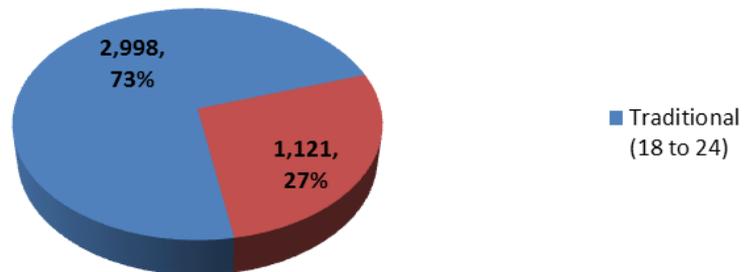


2015 Choose Ohio First Student Gender by Campus Type



The gender of COF scholars is very evenly split. Females are more likely to be enrolled in COF STEMM programing at private campuses, which is aligned with statewide enrollment trends across institutions. The share of females who attend private colleges and universities in Ohio is approximately 54.7 percent. The proportion of females participating in COF is equal to their share of the college-age population in the state (49.0 percent), and exceeds the average of all females earning STEMM degrees in Ohio (28.0 percent).

2015 Choose Ohio First Student Age

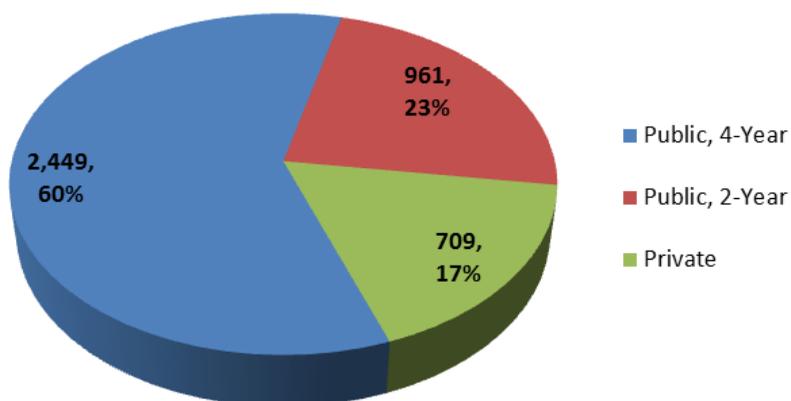


Approximately 27 percent of COF scholars are non-traditional students over the age of 25 (n=1,121). A large number of non-traditional students (44.0 percent) study at Ohio's community and technical colleges. Interestingly, the colleges and universities are also serving more non-traditional students, with 56 percent of non-traditional students served on four-year campuses.

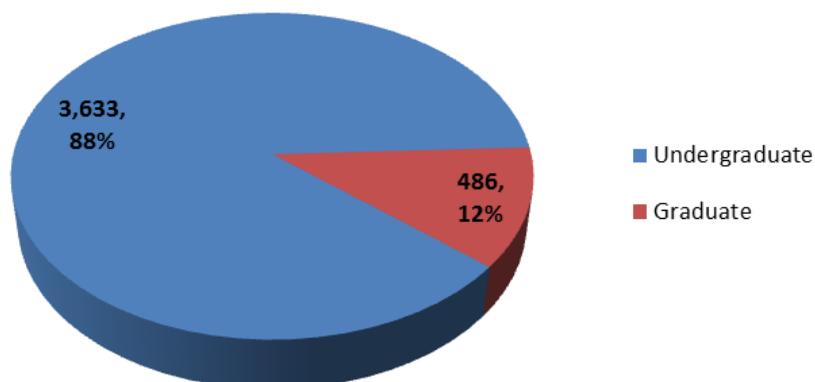




2015 Choose Ohio First Student Count by Campus Type



2015 Choose Ohio First - Undergraduates vs. Graduates



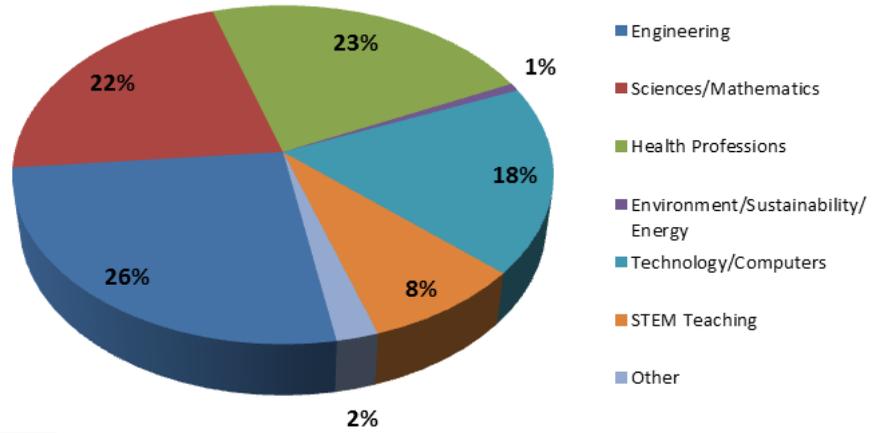
Nearly 23 percent of all COF Scholars are enrolled at a community or technical college. Of the students enrolled at a participating two-year campus, more than 200 moved on to programs at the baccalaureate level in STEMM fields. While the overwhelming majority of COF funds were expended at Ohio's public colleges and universities, nearly 17 percent of COF students participated in programs at a private college or university. COF students enrolled in private institutions received nearly 21 percent of COF scholarship funds statewide.

COF scholarships support 565 students pursuing graduate education. Although this figure is bolstered by the inclusion of the PCMH scholars, the presence of graduate students in the program strengthens the pipeline of private sector jobs requiring advanced STEMM degrees and future postsecondary faculty to teach the next generation of STEMM students. More than 565 COF scholars are graduate students, slightly up from 540 last year.





2015 Choose Ohio First Student Major



**Data as reported from Choose Ohio First campuses, August 2015*

Nearly 80 percent of COF scholars are enrolled in majors linked to one of the JobsOhio industry sectors: BioHealth, Energy, Polymers, Aerospace and Aviation, or Information Technology. STEMM teaching students comprise eight percent of COF scholars. A surprising statistic was the increase in the number of technology and computer-related majors from what was previously reported. This is an area of economic opportunity in the state, and the number of COF students increased from five percent in FY13 to 18 percent in FY15.





Choose Ohio First Programs of Innovation

All COF campuses offer innovative approaches to instruction and retention in the STEMM majors eligible for scholarships. COF campuses utilize approaches to expand access to all Ohioans, and in doing so, meet the urgent need for more individuals trained in science, technology, engineering, mathematics and medicine. Campuses are preparing Ohio's future innovators in high-demand fields including petroleum engineering, geological sciences, health information management and bioinformatics. Summer bridge programming, mentoring opportunities, research projects, co-operative learning offerings and internships are just a few examples of the holistic approach to STEMM education in COF programs around the state.

Just as the campuses offering COF scholarships are diverse, so too are the demographic characteristics of the students served. More students from low-income and disadvantaged backgrounds are benefitting from COF funds. The number of females in COF exceeds the national state average of females who participate in STEMM disciplines. Students of a wide range of ages and ethnicities, from almost every corner of the state, are taking advantage of the opportunity that COF provides. Many COF scholars participate in a cooperative learning opportunity, an internship or a real-world research project in collaboration with a business/organization or faculty. More than 51 percent of the students who participate in a hands-on learning opportunity are female, which builds on the evidence that interaction and familiarity with applicable knowledge in STEMM fields will help attract and retain a diverse workforce. Ohio must aggressively pursue talent present in all areas of its constituency, including women, persons of color and individuals with disabilities, if it is to be well positioned to meet the urgent needs of workforce and labor market projections.



“Overall, [COF] has increased my ability to communicate effectively and work together on a team. Also, it has helped me receive internship experience because employers are always impressed with the quality of research done.”

-Kyle
Youngstown State University





Choose Ohio First Program Descriptions by Primary Focus Area

COF offers programs in numerous majors at campuses that touch every region of the state. There are themes or clusters present in the COF program, and it is easy to identify the main focus of each program by its primary target population.

K-12 Outreach and Pre-College Engagement

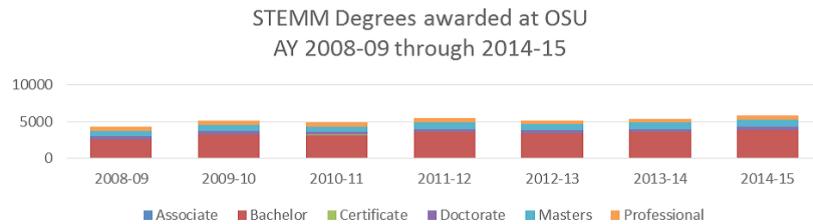
Several COF programs reach out to K-12 students to ensure early exposure to concepts and subjects central to success in the STEM disciplines. These programs reach out to middle and high school students, helping them to see value in a STEM career. Providing them with the tools necessary to succeed is critical to increasing the number of STEM graduates in Ohio. For example:

- » **The University of Cincinnati (UC)** leveraged an existing UC STEP Project on its campus to give COF scholarships to students who completed a summer bridge program as part of a comprehensive pathway to success in engineering.
- » A unique aspect of the **Youngstown State University (YSU)** COF program is its recruitment of students from surrounding urban high poverty districts and its focus on recruiting diverse students. Additionally, the program has a pipeline preparedness bridge program as a key component.
 - Program offers free summer bridge programs that promote math preparation in urban, high poverty schools – partnerships exist with 14 of the 17 schools in Youngstown/Warren.
 - Bridge program participants are given top priority for recruitment into COF.
 - YSU has experienced a 17 percent enrollment decline campus-wide; only the College of STEM has increased enrollment.
 - In fact, at a recent recruitment event nearly half of the students attending “Crash Day” pre-registered for programs related to YSU’s College of STEM.
 - The College has 153 more seniors than it did in 2007, indicating an increase in retention.
 - The COFYU FY10 cohort had a graduation rate of 100 percent as of the 2014-2015 academic year; the COFYU FY11 cohort had a graduation rate of 92 percent.
- » **The Ohio State University (OSU)** COF program, the Ohio House of Science and Engineering: Success in STEM through Collaboration COF Scholarships, allows COF scholars to conduct science outreach programs in central Ohio. Wonders of our World (W.O.W) serves grades K-five. W.O.W2 serves students in grades six through 12.
 - The project has built a strong community of STEM scholars from more than 25 majors and has grown from 83 students in 2008-2009 to 327





- The overall number of STEM degrees awarded at OSU has increased by 37 percent since the inception of the program in 2008-2009. Students in 2014-2015. 17 schools in Youngstown/Warren.



- The attrition rate of 5.3 percent is very low compared to non-COF students, which is 14.9 percent.
- » As a major campus present in a predominantly rural geographic area, **Muskingum University** offers science outreach, mentoring and tutoring services to elementary, intermediate and high school students to encourage participation in STEM areas.
 - The University wants to provide supplementary science education opportunities at each step along the student’s k-16 journey.
 - » The Choose Appalachian Teaching program at **Ohio University** develops and mentors future teachers ready to teach in the high-need areas of southern and eastern Ohio. The preparation and support are designed to create strong teachers ready to teach in the nearly 200 districts of Appalachian Ohio.
 - A corollary goal is to positively impact the challenges many Appalachian Ohio districts face when educating students.
 - In addition to providing rigorous science and math instruction, CAT Scholars also act as college access and completion champions, combating college completion rates in the area as low as six percent.
 - » At **Kent State University**, the COF program is housed in the STEM Research and Education Center, designed to increase K-12 pre-college outreach programs and connecting academic departments to external constituents.
 - By providing students with an interdisciplinary learning experience and the opportunity to be engaged in living/learning communities, the project will increase the number of underrepresented students in science.
 - » The Cincinnati STEM Hub Partnership at the **University of Cincinnati** works to transform the knowledge of COF students through innovation in multidisciplinary collaborative education and research, leveraging UC’s relationships within the community.
 - COF students in engineering are paired with teachers in local schools to do mini presentations on real-life applications of content-specific subject matter – relating engineering in the real-world.
 - COF students are also able to serve as role models for students in the classroom, and have led some students to want to pursue teaching as a profession.





Co-op and Internship Participation

COF projects offer a mechanism for students to be engaged in a rigorous academic curriculum, while gaining real world experience applicable in a STEMM field. Employers value educational practices that involve students in academic and applied learning. Offering students flexible class options and diverse teaching and learning methods allows students to be focused in the classroom and simultaneously focused while participating in a cooperative learning opportunity or internship. This early exposure to the real world applicability of a STEMM major reduces the likelihood that graduates will choose employment in another field. Direct experiences with practical problem solving also make COF students competitive candidates for jobs. For example:

- » The **University of Cincinnati's** program in Global Product Design and Manufacturing integrates product design, manufacturing and business to closely mimic global competition in design and manufacturing.
 - Business partners provided mentoring to students as they worked on projects – unique, real-life simulations for students solving real-world problems.

- » **Wright State University** provides COF scholars with the opportunity to engage in real-world opportunities through a partnership with Wright-Patterson Air Force Base. The program, Growing the STEMM Pipeline in the Dayton Region – Becoming an International Center of Excellence for Human Effectiveness/Human Performance, is designed to ensure a ready and able workforce for the base in future years.
 - The Choose Ohio First Scholarship contributes to several major strategic plan goals at the university, including program distinctiveness, educational attainment, innovation and economic development.
 - COF students have obtained employment after externships with Dayton Children's Hospital and Midmark Corporation. Students have also been accepted into academic societies, research positions and graduate schools, in part because of experiences made available by COF.
 - COF scholars at WSU have participated in almost 25,000 hours of experiential learning and civic engagement in the past year alone.

- » The Choose Ohio First for Engineering Entrepreneurship (COFFEE) Scholarship at the **University of Toledo** equips students with the entrepreneurial training needed to translate their ideas into economic growth for Ohio.
 - The program leverages the scholarship to recruit new students who enhance diversity in a way that is reflective of Ohio's population – enrollments in engineering have increased by 33 percent since the inception of COFFEE.
 - Students are involved in mandatory co-op experiences at Ohio companies in high tech industries.
 - The UT College of Engineering has experienced strategic enrollment growth for eight consecutive years, partly attributable to the COFFEE scholarships.
 - The percentage of COF scholars earning a BS degree is significantly higher than the general STEMM population.
 - There were 15 COF graduates in the 2014-2015 academic year, with 10 scholars entering the STEMM workforce.





- » **The University of Akron** was selected as one of the top recipients of state funding to support workforce development strategies and enhance student success through the Ohio Means Internships and Co-ops program, receiving more than \$900,500.
 - The initiative will create at least 250 new co-op and internship opportunities across five colleges on campus and 34 programs linked to key industries in Ohio.

- » The Science and Math Education in ACTION program at **Bowling Green State University** utilizes unique cooperative learning opportunities to produce innovative and highly effective science and math teachers in Ohio.
 - In addition to a residential summer bridge program before their freshman year, students are engaged in a business / industry during their sophomore year, which culminates in a pedagogical research project during their junior and senior years.
 - BGSU ACTION Scholars are among the top in the state – the average ACT score is 28 and the high school GPA is above 3.9.
 - The retention rate of BGSU ACTION Scholars is more than 97 percent.

“Receiving a COF scholarship lets me know Ohio cares about my higher education...based on my academic performance. This not only motivates me to continue doing well...but it also makes me want to stay and work in Ohio.”

-Josh
Wright State Scholar

- » The Bioinformatics program at **Ohio University** supports students as a means of preparing them for Ohio’s STEMM workforce.
 - Scholars strengthen research at the institution, with many working as interns in laboratories in biological sciences, the college of medicine and the school of engineering.
 - Nearly 88 percent of Bioinformatics students reported that participation in Choose Ohio First allowed exposure to important concepts in the field.
 - Students are required to participate in the Great Lakes Bioinformatics Conference (GLBIO), which promotes computational biology and bioinformatics within the eight U.S. states and two Canadian provinces that comprise the North American region.

- » Miami University COF scholars participate in a program that has a national reputation for excellence.
 - Students participate in faculty mentored research or other independent research projects, designed to increase the workforce in bioinformatics.
 - Miami Scholars credit COF with helping them stand out from other applicants when it came time to apply for a job or make it through the interview process. Through the COF program, a minor in bioinformatics was established in 2013.



Inclusive Competitiveness/Excellence and Diversity in STEMM

Non-traditional students and those underrepresented in higher education, including low-income or first generation students, are given the opportunity to excel as a result of COF. Programs offer the financial assistance necessary for academically at-risk students to enroll and persist to completion of postsecondary education credentials, while ensuring students are engaged in a rigorous curriculum that prepares them for employment. Programs also focus on increasing the number of students from diverse backgrounds in STEMM, including women, racial/ethnic minorities, those from rural areas and students with disabilities.

For example:

- » **Shawnee State University** aims to increase the number of college graduates for a regional population of primarily first-generation college students in an impoverished part of Ohio.
 - The Choose Ohio First Bioinformatics Scholarship provides assistance to talented students; as a result, four graduates are currently in medical or osteopathic school, four graduates are currently in pharmacy school and one graduate was accepted into OSU's veterinary school.
 - The Choose Appalachian Teaching (CAT) program has produced three graduates who are teaching mathematics in Appalachian Ohio counties.

"With your scholarship, I plan to become a GIS analyst and GIS image analyst. My ultimate goal is to receive a job in the Dayton area...to create positive changes within my community. I am a proud Ohioan. I am committed to Ohio.

*-Nick
Clark State Community College*

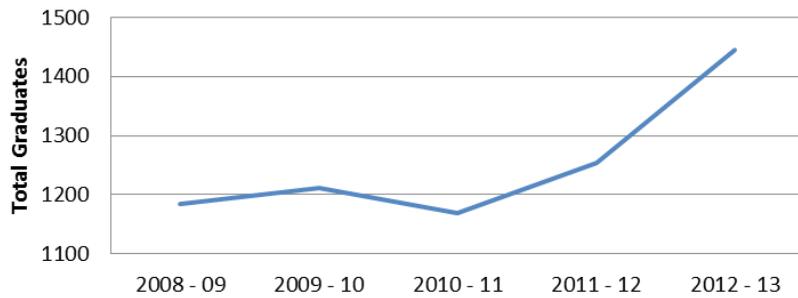
- » The Choose Ohio First program at **Muskingum University** serves a non-traditional, predominantly rural population.
 - Working adults are able to benefit from scholarship support, making it feasible to enter into or complete a STEMM degree, including engagement in Muskingum's RN-to-BSN completion program for nurses advancing in the profession.
 - Approximately 70 percent of COF scholarships at Muskingum University have been awarded to women.
 - According to IPEDS data, STEMM graduates comprised 12.4 percent of undergraduate degrees during the 2007-2009 timeframe; that number grew to 21.4 percent of undergraduate degrees awarded during the 2012-2014 timeframe.
- » **Wright State University** has seen a significant spike in the total number of STEMM graduates mirroring the spike in COF graduates at WSU since the inception of the program in 2009.



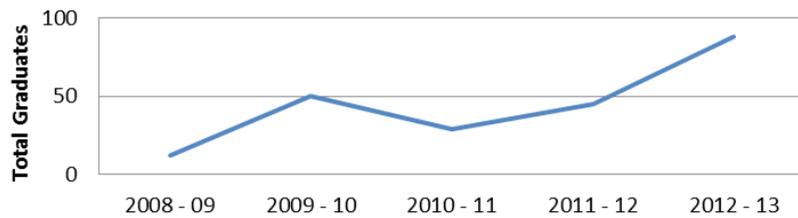


Jacob Holden, COFSP
 Fellow and aeronautical engineering student, from the *University of Cincinnati*, introduces physics to students at Finneytown High School on a water driven turbine project.

Total STEM Graduates

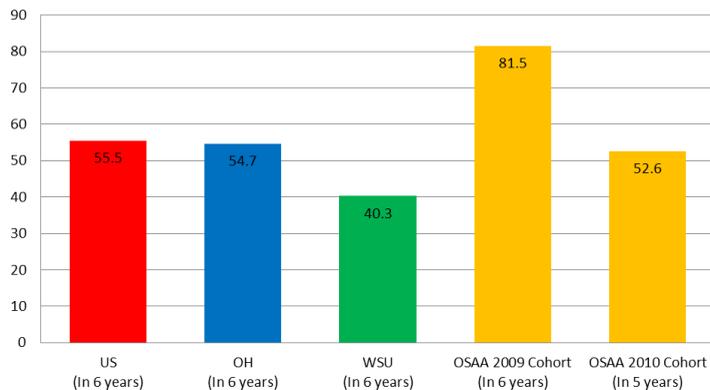


Total COF Graduates



Wright State University (WSU) also has seen an impact on students with disabilities through the COF program. The five and six-year graduation rate for students with disabilities is higher than the national, Ohio and WSU averages.

Six-Year Graduation Rates





- » **Central State University (CSU)** is one of the nation's oldest historically black colleges and universities (HBCU), and as an HBCU the student population is 93 percent minority and underrepresented students. eighty-five percent of CSU students are from low-income backgrounds.
 - The COF Diversifying Ohio in STEM program at Central State boasts a high persistence and graduation rate – 90 percent for COF scholars.
 - CSU faculty report that the COF scholarship helps the students financially, and motivates them by enhancing self-esteem.
 - The average GPA of the graduates in the 2014-2015 academic year was 3.82.

- » **The University of Akron (UA)** has graduated 309 COF scholars since the inception of the program.
 - At UA, the COF graduation rate is 81 percent over the span of the program, which is more than 30 percent higher than the six-year graduation rate of the university's overall student population. A total of 550 COF scholars have graduated from UA to date.
 - The COF model has been adopted as the new institutional, relationship-based, intrusive model for student success, based on the sharp increase COF has had in student retention and graduation rates.
 - The result of adopting this model campus-wide is a significant retention increase of 10 percent from fall 2013 to fall 2014 and a five percent increase from fall 2014 to spring 2015. The intrusive and holistic support was founded with the Choose Ohio First program.
 - The institutional cost-share at UA is comprised of funding for administration, advising, facility upgrades and other important needs of COF. UA provides an annual operations budget of more than \$200,000 for COF.

- » The Building Ohio's Sustainable Energy Future at **Bowling Green State University (BGSU)** supports the persistence and success of underrepresented minority students and women.
 - The program is built on the foundations of the Academic Investment in Math and Science (AIMS) program, which has demonstrated a high level of achievement since its founding in 2006.
 - Students at community colleges in BGSU's region (e.g., Owens, Terra and Northwest State) have access to coordinated program content and advising activities so they can smoothly transition to baccalaureate degree programs at Bowling Green.





- » **Cleveland State University (CSU)** seeks to diversify its STEM disciplines through active and targeted recruitment for students who are underrepresented, particularly minority or disadvantaged students.
 - COF scholars at CSU have shared that they might have delayed college or would have attended only on a part-time basis without the support of the scholarship.
 - CSU reports a change of net growth in STEM disciplines related to COF from 26 percent in 2009 to 137 percent in 2013.
 - CSU students in the COF program have shown nearly a 100 percent retention rate and cohort graduation has also steadily increased at an annual rate of increase of 45 percent.

“As a full-ride student under the Choose Ohio First scholarship program, I attended Central State University debt-free for four years. I graduate [in spring 2015] with a GPA of 3.9 and I am currently employed in Ohio. I could not have achieved my goals without the...support of the state and the moral support of the COF coordinators at CSU.”

-Cody

COF Graduate, Central State University

- » **The University of Cincinnati’s (UC)** program in Diversifying Yield and Retention in Engineering, Mathematics, and Science leveraged a multi-million dollar federal STEM Talent Expansion Program (STEP) grant.
 - The significant retention efforts at UC begin with a recommended seven-week bridge program for socioeconomically disadvantaged and first-generation scholars and/or a more targeted virtual program for those whose math placement test scores were low (ALEKS). ALL summer bridge students enroll in Supplemental Cooperative Learning Courses in calculus, chemistry, and physics.
 - All scholars are expected to participate in six quarters of cooperative work/study, expanding on the strengths of UC’s well-established co-op program. The development of a Corporate Mentoring Program increases the STEM internships available for COF scholars and has resulted in a mentoring practice model that can be used throughout the state.
- » **The Ohio State University (OSU)** also serves Ohioans with disabilities through a partnership designed to leverage OSAA National Science Foundation Funding.
 - Ohio’s population of persons with disabilities is a largely untapped resource for meeting the demand of STEM professionals for the state.
 - Students with disabilities are recruited into STEM majors and transitioned through the use of STEM academies, learning communities, mentoring and residential experiences on campus to develop independent living skills.
 - Ability Advising allows the institution to meet the needs of the student through review of academic progress, arranging technological accommodations and tutoring assistance. Ability Advising also fosters tailored opportunities for STEM co-op and internship experiences.





Community College Participation – Access and Pathways

Nearly 23 percent of Choose Ohio First scholars are pursuing an associate degree. Community colleges offer a low-cost pathway for traditional students to start a degree. Displaced workers often have to make tough choices about their education and the feasibility of entering careers that require additional training. The presence of COF on a community college campus increases the likelihood that laid-off workers will return to school to either enhance their skills for employment in their current industry or be trained for a different career field altogether. Community colleges also offer unique opportunities for traditional students to be trained and enter the workforce quickly with skills employers demand.

As examples:

- » Choose Ohio First students at **Stark State College** are offered a variety of stackable STEM education credentials to meet their education goals. A student can obtain a career enhancement certificate, a one-year certificate and then an associate degree. Articulation agreements provide easy transfer to a bachelor's degree.
 - Stark State graduated 121 COF scholars in the 2014-2015 academic year.
 - COF is marketed to College Credit Plus students as a means of aligning with the Stark State strategic plan.

- » At **Clark State Community College**, COF Scholars are required to complete an internship or clinical experience providing them hands-on experiences and exposure to networking opportunities.
 - The focus is on supply and demand at Clark State; labor projections call for an 11.6 percent increase in geospatial-related job fields and a 30.4 percent increase in physical therapist assistants – programs that are the focus of the COF program at Clark.
 - From fall 2014 to spring 2015, there was an enrollment increase of 8.7 percent in geospatial technology and 3.2 percent in the PTA program.

- » **Lakeland Community College** has embedded the COF program into the fabric of its biotechnology program. The graduates from this program have more than a 95 percent placement rate into jobs or four-year degree programs.
 - The retention rate of students participating in COF is over 80 percent.
 - The COF biotechnology program leveraged a Department of Labor grant and, as a result, COF students had no tuition charges.

- » **North Central State College** supports the statewide goal of COF by helping make a college education more affordable.
 - With an overall enrollment drop of four percent for the college, the CIS/ITEC show a five percent enrollment gain in the past year and the engineering programs have shown 14 percent growth.





- » **Edison Community College's** COF Scholars have consistently shown higher graduation rates, retention rates and GPAs than their non-COF STEMM peers.
 - The starting cohort of COF scholars at Edison (fall 2008) has a 63 percent graduation rate, versus 15.3 percent for their non-COF counterparts.
 - In FY 2015, 65 percent of degree-seeking undergraduates were enrolled in a STEMM program. This increased from 59 percent in FY10.
 - Out of 87 graduates, 77 scholars are currently working in STEMM areas in Ohio.

- » The COF scholars at **Washington State Community College** establish close ties with their advisors from completion of the associate degree through matriculation to a four-year degree program.
 - The program partners with the Ohio Means Internships and Co-ops grant to provide students with funding for internships in local industry.
 - Based on needs identified through the COF program, the plan is to create a one-credit-hour course to assist students in looking for four-year colleges and tours of local industry.

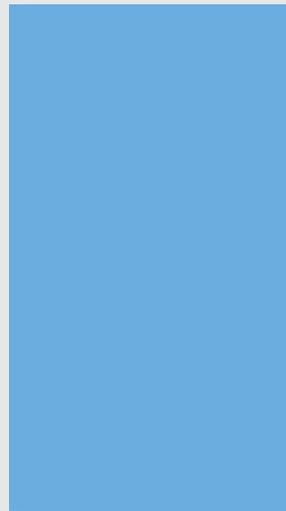
- » **Lorain County Community College** aligns measures to support and encourage COF scholars to pursue their STEMM studies. As a result, the college stresses the importance of low-cost pathways for students who go on to pursue bachelor's degrees:

Your Best Value in Higher Education
Cost Savings of Attending LCCC's University Partnership

College/University	Tuition, Room & Board for 4 years (Actual costs may vary by program)	Cost of Bachelor's Degree Completion at LCCC's University Partnership	Cost savings by pursuing degree through University Partnership
Ashland University, B.S. in Education	\$157,416	\$38,798	\$118,618
Bowling Green State University, B.S. in Biology	\$75,400	\$20,301	\$55,099
Cleveland State University, B.A. in Psychology	\$85,227	\$23,104	\$62,123
Hiram College, B.A. in Accounting & Fin. Mgmt	\$180,800	\$30,554	\$130,046
Kent State University, Bachelor of Bus. Admin.	\$77,408	\$23,682	\$53,726
University of Akron, B.S. in Sport Studies	\$80,578	\$22,316	\$58,262
University of Toledo, B.S. in Computer Science & Engineering	\$83,177	\$34,765	\$48,412
Youngstown State University, B.S. in Applied Science, Major in Allied Health	\$86,297	\$19,180	\$47,117

** LCCC's in county tuition is \$2,977 per year for a full-time student

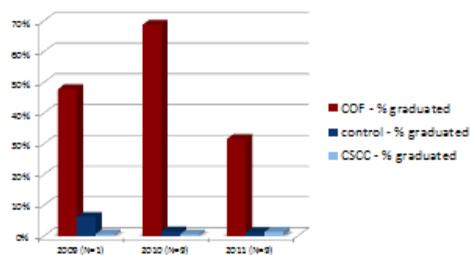
- LCCC has seen a 99 percent increase in participation in COF-related STEMM programs since 2004.





- » The Future Scientists of Ohio program at **Columbus State Community College** leverages COF with institutional programs to attract students who would not consider CSCC as a “first-choice” for college.
 - CSCC leverages partnerships with other businesses to assist Choose Ohio First scholars; McGraw-Hill provides e-books at no charge for COF recipients for any core course in which a McGraw-Hill textbook is used.
 - Approximately 27 percent of FSO scholars are from underrepresented groups; 50 percent are first-generation students.
 - FSO data from Columbus State are particularly compelling – graduation rates of COF students are far higher than other CSCC students:

FSO-COF Success Data: Graduation Rates
(comparison of A.S. majors; COF vs. control vs. CSCC)

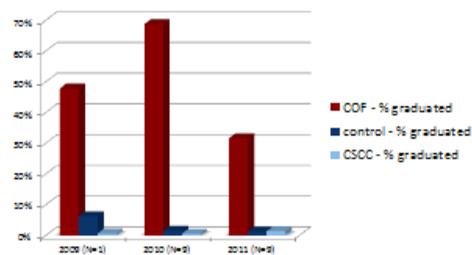


“Control” group consists of non-COF students who were incoming freshman, declared A.S major upon entrance to the college, and tested into college-level math and english

“CSCC” group consists of non-COF students who were incoming freshman and declared A.S major upon entrance to college

- The aim of the Columbus State program is to support non-traditional and low-income students in STEMM by providing them a pathway to higher education from a two-year to a four-year campus.

FSO-COF Success Data: Graduation Rates
(comparison of A.S. majors; COF vs. control vs. CSCC)



“Control” group consists of non-COF students who were incoming freshman, declared A.S major upon entrance to the college, and tested into college-level math and english

“CSCC” group consists of non-COF students who were incoming freshman and declared A.S major upon entrance to college





- » The Choose Ohio First program at **Zane State College** focuses on retention and graduation.
 - The program boasts an overall COF graduation rate of 74.2 percent. The retention rate for COF students in the occupational therapy assistant program is 87.5 percent.
 - Graduating students from the Zane State College COF program had an average GPA of 3.80.
 - Based on a survey sent to graduates to monitor progress post-graduation, students who replied reported a 100 percent employment rate.

- » **Sinclair Community College**, an urban, open access community college with tuition rates less than \$100 per credit hour, serves a range of COF scholars with an average age of 32.
 - For a student taking 12 credit hours, the COF scholarship would cover approximately 66 percent of the cost. This is significant in keeping post-secondary education affordable.
 - The average GPA for Sinclair COF scholars was 3.365.

- » The COF program at **Cuyahoga Community College** (Tri-C) provides faculty mentoring and financial assistance to students, aiming to increase timely degree completion and transfers to four-year institutions.
 - 24 COF scholars graduated in the 2014-2015 academic year.
 - COF scholars are required to present a STEMM-related poster at the Student Success Symposium at Tri-C or present a COF portfolio to their mentor.
 - The campus has successfully leveraged COF when participating in other initiatives, including the NSF-funded Louis Stokes Alliance for Minority Participation, an Ohio Means Internships and Co-ops grant, and a Bridges to Success in the Sciences (Bridges) grant, all of which encourage minority and underrepresented student involvement.

- » **Cincinnati State Technical and Community College** serves a largely non-traditional aged population – nearly 56 percent of COF scholars are non-traditional and the majority are women.
 - Of the 170 students awarded scholarships at CSTCC, 87 percent have persisted in their original STEMM program of study. Eight percent have transferred to a four-year college/university to continue their studies.
 - An analysis of scholarship recipients conducted through Cincinnati State's Office of Research and Strategic Planning indicated that COF scholars trend higher in graduation rates than their non-COF peers – 3.5 to 4 times greater.





Private Campus Partnerships and Collaborations

Independent higher education institutions are important to the academic attainment of Ohio's citizenry, including in STEMM areas. According to a recent AICUO report, private colleges and universities comprise more than 40 percent of bachelor's degrees awarded in Ohio in mathematics, the physical sciences and biological sciences. During the 2013-2014 academic year, 18.73 percent of COF scholars were housed at Ohio's private colleges and universities. Partnerships and collaboration among Ohio's public colleges and universities and private institutions around the state have resulted in more students being served, and more efficient use of Ohio's fiscal and human resources.

For example:

- » The COF scholars at **Ohio Northern University** participate in a nationally accredited and recognized teacher education program, specifically in engineering education.
 - The campus has focused on 2+2 transfer agreements with Owens Community College, James A. Rhodes State Community College and Marion Technical College to provide opportunities for students completing two-year degrees to seamlessly transfer to ONU.
 - COF was leveraged in an application for an NSF grant designed to increase the number of minorities focusing on STEMM-area teaching licenses.

- » The **University of Rio Grande** is uniquely positioned to meet the needs of its COF scholars. A public community college, Rio Grande Community College, is co-located on the campus and offers opportunities for seamless transfer in many degree areas.

- » **Baldwin Wallace University's** (BW) STEMM scholars are assigned a success coach and receive holistic financial, academic and social support designed to provide clear and consistent expectations, support, assessment and feedback, and involvement.
 - Within nine months of graduation, 94 percent of BW graduates find employment or enter graduate/professional school. Nearly 70 percent of BW graduates choose to remain in Ohio.
 - 41 percent of BW COF scholars are first-generation college students and are Pell-eligible. This compares to 21 percent and 38 percent for the campus (respectively).
 - BW's COF scholars have a four-year graduation rate that is nearly 30 points higher than their non-COF peers (67 percent versus 39 percent, respectively).
 - BW's COF program has retained 83 percent of participants since the inception of the program.





- » **The University of Dayton (UD)** focuses on recruiting, retaining and graduating female, minority and first-generation students in STEMM through intentional and targeted program activities.
 - Choose Ohio First has enabled the university to attract more minority students; once enrolled, these students persist to graduation.
 - UD has a 2+2 relationship with Edison Community College and Sinclair Community College.

- » **Heidelberg University** attracts and retains students in the area of environmental science.
 - The goals are to simultaneously grow the academic enrollment of the institution while improving the academic abilities of the students at Heidelberg.

- » **Hiram College** established formal learning communities comprised of Choose Ohio First scholars, Igniting Streams of Learning in Science faculty, and campus staff. The result was a mentoring network for learning and support that has expanded to non-COF students as well.
 - The Integrated Entrepreneurship program encourages understanding and using tenets of entrepreneurial thinking, including creativity, problem solving and solution mapping.
 - Two of the undergraduate COF recipients are now candidates for the Northeast Ohio Medical University PCMH scholarship.

- » **Wittenberg University** offers its COF scholars individualized attention and unparalleled access to collaborative faculty research opportunities.
 - Wittenberg COF scholar Garrhett Via from Geneva, Ohio was awarded the James Manner Award scholarship for best undergraduate poster at the 2015 Pittsburgh Conference on Analytical Chemistry and Applied Spectroscopy, the world's largest annual premier conference for laboratory science.
 - Wittenberg is seeking final accreditation and state approval for an innovative 1-2-1 pathway nursing program with Clark State Community College, in which students interested in a Bachelor of Science in nursing would enroll at Wittenberg and take classes at Clark State during their sophomore and junior years.





- » The COF scholars at **Notre Dame College** (NDC) are provided with service-learning research, undergraduate research, career development and internship opportunities through the program.
 - NDC's biology program has seen rapid growth since the inception of COF, resulting in a 20 percent increase. Biology is now one of the top five majors on campus.
 - The first entering cohort in fall 2012 show exemplary retention rates – 100 percent of the scholars are still enrolled in STEMM compared to 72 percent of non-COF students who entered at the same time.

- » The Program of Innovation at **Marietta College** increased the number of students in key programs, i.e., petroleum engineering (34 percent) and geology (100 percent), since the inception of Choose Ohio First.
 - COF has transformed the niche programs of petroleum engineering and physician assistant studies into signature programs of the college. The petroleum engineering department alone had a 16 percent enrollment increase from fall 2013 to fall 2014.
 - The College participates in the Ohio Means Internships and Co-ops grant program, connecting COF students to Ohio employers and paid internships.
 - Petroleum engineering is traditionally dominated by men; a female COF scholar organized a chapter of Women in Petroleum Engineering at the college and during the 2013-2014 academic year, the chapter had 25 active members.
 - 100 percent of the COF students who were seniors in petroleum engineering graduated during the 2014-2015 academic year.

- » The **University of Findlay** (UF) attracts high-achieving scholars into its program, while building conduits to business and industry.
 - 100 percent of the biology COF program graduates have entered into graduate programs in Ohio in medical school, physician assistant or veterinary medicine.
 - Education COF students at UF have a 100 percent passage rate on the Praxis II licensure tests. They also scored considerably higher than the state average in the areas of student satisfaction, field experience and alumni performance (21.7 percent versus 14.4 percent).
 - The computer science program has seen incremental growth related to COF, from 63 students enrolled in the major in fall 2012 to 88 students in fall 2014.





- » The Northeast Ohio Biosciences Pathway Initiative at **Ashland University** boasts a high retention rate of 83 percent, even with a large number of first-generation students (46 percent). Ashland University has also placed tremendous focus on affordability, and reduced undergraduate tuition in 2014 by \$10,000.
 - Additional sections of introductory biology and chemistry courses have been added at Ashland; 41 students have been recruited into COF
 - Since 2009, 90 percent of Ashland COF graduates have begun careers in STEMM-related fields, compared to a national average of 50 percent.
 - The program at Ashland University has substantially increased the number of incoming students with a declared major in the bioscience areas. Also, the program has had a positive impact on connection to STEMM careers. As of 2012, 95.3 percent of graduates in COF-related areas have entered a STEMM-related career.

- » **Franklin University** leverages the attention and support of the university community to positively impact recruitment of students into STEMM disciplines and market the career potential associated with STEMM majors.
 - The COF retention rate was 93 percent from the 2013-2014 academic year into the 2014-2015 academic year.
 - In 2014-2015, 100 percent of the graduates in computer science and management information sciences were COF scholars.
 - Over 65 percent of COF scholars work full-time, with 66 percent currently employed within the technology industry. As many are already personally and professionally established, it is likely that many will stay in Ohio after graduation.
 - 63 percent of currently employed COF scholars believe that their degree will provide them with an opportunity for advancement at their current place of employment.
 - 100 percent of graduates this year are employed full-time.

"I have a whole new outlook on CSCC and on the life of a student at this school. I am so much more ready to be a student and begin my academic life at Columbus State."

-COF Scholar

Columbus State Community College





Excellence in Graduate and Advanced Studies

COF offers graduate students an opportunity to excel in STEMM fields. Graduate students comprise approximately 14 percent of the total number of COF students, an assurance that individuals seeking to obtain advanced degrees in subjects such as engineering, science and mathematics are able to receive financial assistance from this program, as well.

As examples:

- » **The University of Findlay** has seen 100 percent of its COF graduates in biology enter graduate programs.
- » **Case Western Reserve University** has consistently been recognized as a university with strong STEMM majors and programs.
- » The bioinformatics COF program at **Bowling Green State University** ensures that scholars are prepared for post-graduate programs by establishing a record of laboratory research experiences. Students are more competitive candidates for graduate programs as they have demonstrated evidence of their ability to plan and conduct research.
- » **Marietta College** offers scholarships in a two-year graduate program for physician assistant studies.
 - All students in the 2012 cohort graduated with their degrees (n=20).
 - COF scholars hold seven of the eight leadership positions in the Student American Academy of Physician Assistants.
- » The **University of Cincinnati** program, Master's Degrees as Conduits to Recruiting, Retaining and Upgrading the Ohio STEMM Workforce is designed to attract students into a master's degree program and ultimately medical school, with the goal of retaining more Ohioans with advanced degrees.
 - Educational collaborations between STEMM and non-STEMM sectors give students enhanced value in the workplace. From an early stage of their education, students learn the connections between designers, engineers and medical professionals for medical device innovation projects.
- » **Ohio University's** College of Nursing is shoring up the reserves of those prepared to meet the needs of Ohio's healthcare industry by recruiting and retaining master's degree nursing students.
 - Graduate nursing students utilize the Heritage College of Medicine's innovative learning laboratory and skills laboratory.
 - Retention for graduate COF scholars is 100 percent versus, an 88 percent return rate for non-COF graduate students.





- » In the Engineering Across the Pipeline program at **Cleveland State University**, the focus is on recruiting STEM majors to complete a graduate degree in engineering.
 - Females, an underrepresented group in engineering, consistently represent one-third of the COF scholars in the program. This is also meaningful given that women are outnumbered in the professoriate in STEM.
 - Each COF student's experience is customized, with one-on-one interactions to identify opportunities and connections, incorporate activities and tailor events toward specific majors.

- » **The University of Toledo (UT)** has a core mission of generating graduates with employable graduate degrees in high-demand STEM areas.
 - The dual degree "pipeline" enables students to earn a BS and MS in bioinformatics in 5.5 years.
 - The UT College of Engineering has experienced strategic enrollment growth for eight consecutive years, partly attributable to the availability of COF scholarships.
 - The College has also experienced an increase in the success rate of engineering majors, growing from less than 50 percent in the early 1990s to consistently over 75 percent in recent years; five- year graduation rates have also doubled over the same time period.
 - UT also aims to increase the number of graduates with a professional science master's degree in photovoltaics, equipped with the technical training needed to translate their skills into economic growth in renewable energy.
 - The photovoltaics program requires a 24-week internship, resulting in a 100 percent employment placement rate for all graduates due to these internships.

"I've lived in Ohio my entire life, and it was really nice to feel like the state was investing in my education. I hope I am able to use the education I've received to elevate the standard of care for this great state. Thank you for supporting my time at Marietta College.

-Krissy

Physician Assistant Graduate 2015, Marietta College





The Economic Impact of Choose Ohio First

The Choose Ohio First program has led to a fundamental re-thinking of how STEMM education can be achieved on college campuses. Because COF funds may not be used to cover administrative expenses, cost share and matching dollars are a testament to the commitment campuses have made to administering the program. Cost share purchases include purchases of torso, eye and skull models for use by medical and laboratory COF students. Staff and support personnel have been hired on campuses explicitly to work with COF students.

An analysis of the COF program by Tripp Umbach found that the program is having a positive effect on the state's economy. The analysis conservatively estimates that receipt of COF funds led to the support of 477 jobs and more than \$59 million in economic output within the state. Economic output includes the institutional expenditures made for COF scholars, the personal spending of staff and students of the program, labor income from the co-op/internship opportunities, innovations and entrepreneurship opportunities led by COF scholars, and other local economic activity. Using the same conservative approach, it is projected that by 2016, COF programs will lead to the support of 843 jobs, more than \$110 million in economic output around the state and \$4.5 million in state and local tax revenue. These are conservative estimates based on annual impacts and do not take into consideration the cumulative effect of the program's benefits. Moderate and aggressive estimates trend much higher.

Several evaluations led by external entities support the continuation and expansion of offering COF scholarships. In a study conducted by The Strategy Team, Ltd. for the Ohio Department of Higher Education, students positively attributed COF with strengthening the existing levels of STEMM interest in the scholars and with attracting the attention of Scholars who may not have seriously considered STEMM. The scholarship also appeared to have a greater influence on the students' choices of institutions and academic major declarations. This is good news for Ohio employers.

Tripp Umbach's COF study included interviews with business leaders; out of the 25 leaders interviewed, a majority (n=16) would prefer to hire graduates from Ohio colleges and universities. However, they report that they have historically been unable to find the science, technology, engineering and mathematics talent necessary to remain competitive. According to a report by the National Science Foundation in 2003, Ohio was in the bottom quartile for the percentage of science and engineering degrees conferred. Ohio's economic prosperity hinges on the development of talent in STEMM. Nine out of the 25 employers interviewed indicated they would employ talented candidates regardless of whether they are in-state or out-of-state. However, regardless of their preferences on hiring within Ohio, employers recognize the potential of COF as a key factor in helping meet workforce demands locally.





Employers are eager to work with Choose Ohio First students. At Zane State College, nearly every COF student participates in a clinical, internship or fieldwork experience relevant to their areas of study. Zane State COF graduates from 2014 to 2015 reported a 100 percent employment rate. This type of response is not an isolated event. Numerous campuses report that employers are eager to work with Choose Ohio First scholars, touching nearly every corner of the state.

An Abbreviated List of Business Partners Connecting COF to Industry

Abbott Nutrition	Conagra	John Deere
Accenture	CooperTire and Rubber Co.	LG Fuel Cell Systems
Acusport	Dayton Reliable Tool	Licking Memorial Hospital
Aerial Corporation	Delphi	Lubrizol Corporation
Affymetrix	Diebold, Inc.	Mass Mutual
Alkermes	E. Muskingum Local Schools	NASA Glenn Research Center
Armco/AK Steel	Emerson Technologies	Neo Proteomics, Inc.
AT&T	Farrar Scientific	Parker Hannifin
Athersys	FC Stone	Ricerca Biosciences
Audio-Technical	FirstEnergy	Steris
Avetec	GE Transportation	Summa
BioFit	Genesis Healthcare System	Swagelock
BioInVision, Inc.	Global Cleveland	Sysco
Blue Water Satellite	Goodyear	Tec^Edge
BP Refinery	Hanger Prosthetics	Timken
Brush Wellman	Hobart	U.S. Air Force
BWI Group	Honda	Verizon
Caron Products & Services, Inc.	Honeywell	Woolpert
Chantest	Hoxworth Blood Center	WordPress
City of Dayton	Image IQ	Worthington Steel Industries
Cleveland Clinic	Interhack Corporation	Wright Patterson Air Force Base
ClinicalTissue Eng. Center	IYA Technologies	
	J.M. Smucker	

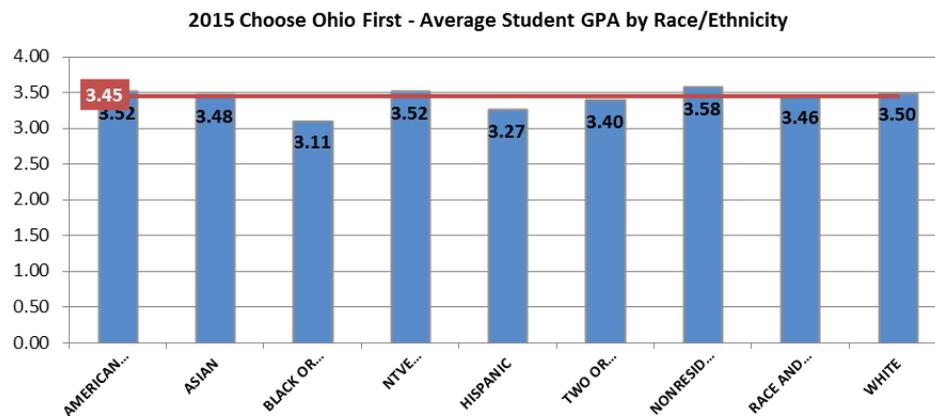




Choose Ohio First: Keeping the Momentum

The COF Scholarship Program aims to continue the positive momentum of past years. The program must continue to adapt to accommodate changing workforce needs. When possible, opportunities for the growth and expansion of the programs on campuses to meet workforce needs are highly encouraged. However, the intention of the program to increase access to high-achieving, first-generation, low-income and underrepresented students has remained.

The average GPA for a COF scholar in the 2014-2015 academic year was 3.45, up slightly from the 2013-2014 academic year average of 3.43. One area of focus in future years will be the academic performance of students of color. Currently, the majority of students of color trend close to the overall GPA average.



African American and Hispanic COF scholars' average grade point average (GPA) increased in the 2014-2015 academic year to 3.11 and 3.27 from 3.03 and 3.24, respectively, in the 2013-2014 academic year. It will continue to be a priority for Choose Ohio First programs to identify threats to academic performance among students of color, and address gaps with targeted interventions and supports.

Persistence from year to year in COF also has increased, particularly when compared with non-COF students in the same academic major. A national study from the United States Department of Education's National Center for Education Statistics reported that half of all bachelor's degree candidates in STEM leave the field before completing their degree. In contrast to the national data, Choose Ohio First programs have extremely high retention rates, with some programs boasting 100 percent retention.

Based on data compiled from annual reports from participating Choose Ohio First campuses, approximately 971 Choose Ohio First Scholars graduated in the 2014-2015 academic year. Of this number, 149 plan to enter graduate school. More than 700 (n=733) COF graduates have secured jobs and are staying in the state to contribute to the Ohio workforce. Only 47 students reported accepting out-of-state employment or graduate school offers. Students who left the



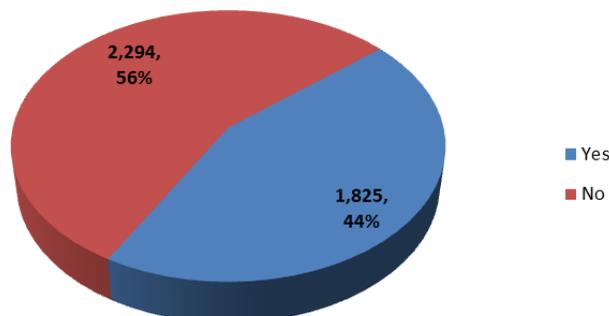
"As a disability student, I spent much of my undergraduate career second-guessing my own abilities...the Choose Ohio First disability scholarship and OSAA helped show me that people believe that I could pursue my career and succeed.

-Zachary
Ph.D. Candidate, Biomedical Informatics
COM, The Ohio State University

state reported a strong desire to return to Ohio in the future and contribute to the state that invested in them. Campuses have solidified concrete steps to monitor graduates' progress, including targeted alumni surveys, special mailings to former COF scholars and tracking through the Ohio Department of Job and Family Services Office of Unemployment Insurance Wage Data.

Data from the COF campuses have progressively become more robust and meaningful. As we move toward more years of graduating classes of COF scholars, the data are clearly showing that the funding has a positive impact on student retention and completion. It is also important to note the promising data points of retention and completion are being achieved with a population that is largely first-generation/low-income. The chart below illustrates that 44 percent of COF scholars identify as first-generation or low-income. This is up from 41 percent in the 2013-2014 academic year. Even with significant numbers of at-risk students, Choose Ohio First is showing positive results in student success.

2015 Choose Ohio First - First Generation



Numerous inquiries about COF continue to come in at the state level, and campuses report that the substantial progress in marketing COF using social media and other online materials has resulted in increasing numbers of applications for the scholarship each year. At the 2015 COF Scholar Showcase, Secretary of State Jon Husted, founder of Choose Ohio First, presented each scholar with a personalized commendation. The Ohio Department of Higher Education is in a continuous improvement mode with COF to build on its success and enhance the scope and depth of its positive effects on Ohio's economy. As the COF scholarships are available on more campuses and in more disciplines, increasing numbers of students will have to the opportunity to apply for a COF award and pursue their academic and career goals in STEM fields.





Additional Staff/Student Testimonials

“The Choose Ohio First Scholarship has truly shaped who I am as a student. During the summer research experience, I grew tremendously in lab skills and confidence through valuable hands-on experience. The confidence gained propelled me to apply for, and then be granted, a summer research fellowship at the OSU College of Pharmacy. Ohio has several wonderful programs in these fields that I am planning on applying to. Funding from Choose Ohio First has played a large part in guiding me to where I am now.

– *Ashland University Scholar*

“I had a lot of help from Dr. Nagi and the UT business incubator, along with Dr. Ariss, who all played an instrumental role in helping me to establish my business and give me practical guidance to get things moving forward.”

– *Former University of Toledo COF Scholar, Lead Engineer and Business Owner, Resonance Group, Ltd.*

“I want to say thank you for selecting me as a recipient for the Choose Ohio First scholarship... it means more than money. It is more than a vote of confidence. And it is more than just an investment in the community. For me, receiving this scholarship marks a major shift in my life...a newfound ambition and belief in myself. Thank you so much for this.”

– *Kyle, COF Scholar, Zane State College*

“The Choose Ohio First STEM scholarship have provided much-needed financial assistance to Wittenberg students. In some cases, they have provided the final push required to encourage students who were considering several possible majors to finally commit to a STEM program. They have also provided the financial resources necessary to allow students (who otherwise would need to work a second or third job just to make ends meet) to focus on their studies and their research.”

– *Mr. Randy Green, Executive Director of Financial Aid, Wittenberg University*

“I am the chair of the Able Alliance Employee Resource Group (ERG) at Battelle and I am writing to inform you of the impact that Ohio’s STEM Ability Alliance (OSAA) is having on Battelle... we were excited to connect with OSAA to form a mutually beneficial relationship that focuses on expanding the opportunities for education, research and employment for persons with disabilities, and bring to light this underrepresented minority in STEM.”

– *Stacy Dean, Manager, Battelle Able Alliance ERG*

“Over the six-year period that the Choose Ohio First program supported STEM students at Wright State, the number of undergraduates in science and engineering has increased by 21 percent and graduate students by 17 percent. The number of students receiving bachelor’s degrees...has increased from 434 in 2009 to 678 in 2014, a gain of 52 percent. The pipeline created by the Choose Ohio First Scholarship program provides graduates in key JobsOhio industries to meet the future needs of the regional and Ohio economies. The Choose Ohio First Scholarship program is an outstanding initiative that benefits students and Wright State University, and contributes to creating the technical talent pool needed for the economic development of the Dayton region and the State of Ohio.”

– *Dr. Thomas Sudkamp, Provost, Chief Academic Officer and Vice President for Curriculum and Instruction, Wright State University*





"I am a 50-year-old career changer. My background is mainly business...as I was out of work for about six months, I looked into PT because I have always been interested in helping people and in understanding how the body works and repairs itself...I am able to concentrate on my studies and really start LEARNING...the scholarship has been a real blessing to me and I am greatly appreciative of it."

– Tim, COF Scholar, Sinclair Community College

"The Choose Ohio First Scholarship Program has made a profound impact on not only my education, but my personal life as well. At first, COF was nothing more than a scholarship...it wasn't until my retention specialist pulled me aside to tell me about the support, tutoring and guidance that COF could provide that things began to turn around for me and I realized this program was so much more. Not only does COF support me financially, more importantly this program has also given me a sense of family, success and significance on a large campus like Akron's."

– Erin, Chemical Engineering-Polymer Specialization, COF Scholar, University of Akron

"I am a recent graduate of the Medical Laboratory Technology program at Tri-C and a recipient of the Choose Ohio First scholarship. Without the scholarship, I truly believe I would not have completed my associate degree; I had lost my job, and without supplemental financial assistance it would have been impossible to maintain my household and school. I owe much gratitude to those individuals who help make these opportunities available to everyone who is trying to improve their lives and contribute to the community."

– COF Scholar, Cuyahoga Community College

"My Choose Ohio First scholarship has allowed me to pursue my degree at a quicker rate than without the COF scholarship. The sooner I graduate with a bachelor's degree, the sooner I will be eligible for additional opportunities at my employer."

– COF Scholar, Franklin University





 **OhioHigherEd.org**

Ohio Department of Higher Education | 25 South Front Street | Columbus, OH 43215-3414 | 614.466.6000