

Choose  **hio** First

# Choose Ohio First

**Networking Meeting  
Agenda  
Friday, May 18, 2018**

**12:35: University of Akron**

**1:05: Youngstown State University**

**1:35: Muskingum University**

**2:05: Findlay University**

**2:35: Baldwin Wallace**

**3:05: Columbus State**

**3:35: Bowling Green State University**

**3:35-4:00: Conclusion/ Informal Q&A**

Avis Brown

Program Director, Choose Ohio First

The University of Akron

May, 18<sup>th</sup> 2018

# Proactive Support Model

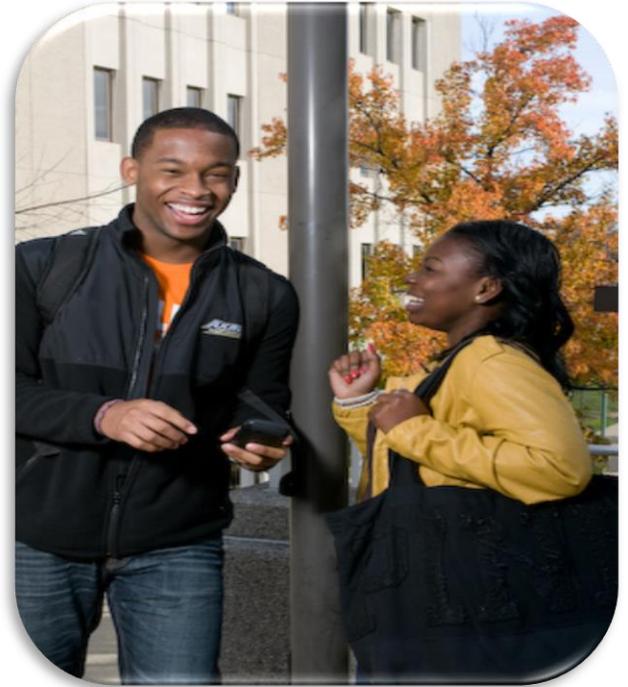
## Root to Fruit



The  
University  
of Akron

# Overview

- Recruitment
- Running Start
- Intrusive Support
- Goal Setting Meetings
- Progress Reports
- Socio-Cultural Events
- Peer Mentoring
- Supplemental Instruction
- Office Environment
- Outcome



# Program Components

- Recruiting/Pipelines
- Running Start Summer Bridge Program
- Life/Success Coaching
  - Academic monitoring
  - Goal-setting
- Supplemental Instruction
  - Tutor Mentors
- Community engagement, service & leadership



# Recruitment

- 2 Recruitment Coordinators-COF staff dedicated specifically for recruitment
- Visits
  - Day long school visits
  - UA visit days (Admissions, Engineering, College of Nursing, etc).
  - Community partners and outside fairs
- 5 star visit days
  - Recruit for Running Start as well as COF
  - Interested students shadow our current scholars in class
  - Recruit students and families into the program



# Running Start Summer Bridge

- Running Start Summer Bridge
  - Live on campus
  - Eight-week math course
    - Supplemental Instruction
  - Goal Setting and College Success Workshops
  - Socio-Cultural Activities
  - Students who comply with expectations become COF Scholars for the Fall semester and receive scholarship

# Living Learning Community

- Running Start students that successfully complete the program are required to live together in a Learning Community (Fall/Spring)
- Resident Assistant is COF scholar
- Take Freshman Experience class together



# Intrusive Support

- Consists of requiring students to do what will be helpful to them, even when they do not want to do so.
- Components:
  - Individual Success Plans
  - Life coaching/mentoring
  - Progress reports
  - Socio-cultural events
  - Mentoring
  - Supplemental Instruction



# Goal Meetings

- Individual Success Plan
  - S.M.A.R.T. Goals
- Academic and Life/Sociocultural Goals
- Build rapport and get to know Scholars
- Identify barriers to Scholars' success
- Goals created collaboratively with Coordinators and Scholars
- Follow up with Scholars throughout semester



# Individual Success Plan

<input type="checkbox"/>	Pell Grant Recipient	<input type="checkbox"/>	Has Dependents	<input type="checkbox"/>	Non-Traditional
<input type="checkbox"/>	First-Generation College Student	<input type="checkbox"/>	Veteran	<input checked="" type="checkbox"/>	Ethnic Minority
<input type="checkbox"/>	English is NOT first language	<input type="checkbox"/>	Foster Care/Ward of the Court	<input type="checkbox"/>	IEP/504 Plan
<input type="checkbox"/>	Urban, Public High School	<input type="checkbox"/>	Female (Engineering ONLY)		
<input checked="" type="checkbox"/>	Works <u>18</u> Hours/Week	<input checked="" type="checkbox"/>	Commutes		
<input type="checkbox"/>	Office of Accessibility	<input type="checkbox"/>	Other (Please Indicate)		

# Progress Reports

- Submit twice during the semester
- Multiple purposes:
  - Scholar knows their grade
  - Scholar builds relationships with professors
  - COF staff are aware of Scholar grades
  - COF staff can require Scholar to get additional help if grades are poor (C or below)



The University of Akron



Choose Ohio First STEM & Pipeline Initiatives

Academic Progress Report

Scholars, please PRINT the following information:

Student Name \_\_\_\_\_
STEM Staff Avis Brown Dioswal Cook Alex DeJarnett Ryan Moton Christine Rose Katie Schrader Shadrack Stinson
Zips Email \_\_\_\_\_@zips.uakron.edu
Student ID # \_\_\_\_\_ Phone \_\_\_\_\_
Course Name Musculoskeletal Anatomy II
Course Number 5550:401 Section Number 001
Instructor Name Stacey Buser
Term [ ] Fall, 20 \_\_\_\_\_ [X] Spring, 20 18 [ ] Summer, 20 \_\_\_\_\_

Faculty Member: The student listed above is required to submit academic progress reports as a STEM Scholar the 6th week (Friday, February 23rd) and 12th week (Friday, April 6th). Your assistance in providing this information is appreciated.

Grade Average to Date \_\_\_\_\_ Grade is "A" \_\_\_\_\_ Grade is "D"
\_\_\_\_\_ Grade is "B" \_\_\_\_\_ Grade is "F"
[X] Grade is "C" \_\_\_\_\_ No Grades

Test Grades \_\_\_\_\_ Quiz Grades 5/2 Paper Grades 84%
\_\_\_\_\_ Lab \_\_\_\_\_

Attendance & Timeliness Good [X] Fair \_\_\_\_\_ Poor \_\_\_\_\_
Attitude Good [X] Fair \_\_\_\_\_ Poor \_\_\_\_\_
Overall Effort Good [X] Fair \_\_\_\_\_ Poor \_\_\_\_\_

Comments STUDY OFTEN GROUP STUDY
BIG EXAM IN 2 WKS!

Instructor's Signature Stacey Buser Date 2/21/2018
It is the Scholar's responsibility to distribute, collect, and return this form to the COFSP Office in Simmons 301.

Choose Ohio First & Pipeline Initiatives
Simmons 301
Akron, OH 44325-4000
330-972-7760 | 330-972-5848 Fax
STEM@uakron.edu



Choose Ohio First STEM and Pipeline Initiatives

Academic Progress Report

Scholars, please PRINT the following information:

Student Name \_\_\_\_\_

STEM Staff Avis Brown Dioswal Cook Alex DeJarnett Ryan Moton Christine Rose Katie Schrader  
(check one)

Zips Email \_\_\_\_\_@zips.uakron.edu

Student ID # \_\_\_\_\_ Phone \_\_\_\_\_

Course Name Database management for Info. Systems

Course Number 0500:324 Section Number 801

Instructor Name Liping Liu

Faculty Member: fall Summer 2017 ~~Week 1~~ ~~Week 2~~ ~~Week 3~~ ~~Week 4~~

Due: Friday, June 16<sup>th</sup> Due: Friday, June 30<sup>th</sup> Due: Friday, July 7<sup>th</sup> Due: Friday, August 4<sup>th</sup>

The student listed above is required to submit academic progress reports as a COF STEM Scholar by the corresponding due date. Your assistance in providing this information is appreciated.

Grade Average to Date  Grade is "A" \_\_\_\_\_ Grade is "D" \_\_\_\_\_

\_\_\_\_\_ Grade is "B" \_\_\_\_\_ Grade is "F" \_\_\_\_\_

\_\_\_\_\_ Grade is "C" \_\_\_\_\_ No Grades \_\_\_\_\_

Test Grades 90.3% Quiz Grades 5/6 Paper Grades \_\_\_\_\_

\_\_\_\_\_

\_\_\_\_\_

Attendance & Timeliness Good  Fair \_\_\_\_\_ Poor \_\_\_\_\_

Attitude Good  Fair \_\_\_\_\_ Poor \_\_\_\_\_

Overall Effort Good  Fair \_\_\_\_\_ Poor \_\_\_\_\_

Comments Excellent student to have.

Instructor's Signature \_\_\_\_\_ Date 10/4/17

It is the Scholar's responsibility to distribute, collect and return this form to the COFSP Office in Simmons 301.

Choose Ohio First STEM and Pipelines Initiatives  
 Simmons 301  
 Akron, OH 44325-4000  
 330-972-7760 / 330-972-5848 Fax  
 STEM@uakron.edu

# Peer Tutor Mentor

- Individual Model; One-on-One/ Group
- All freshmen are required to meet with TM
- Purpose



# Supplemental Instruction

- One-on-One
- Small group
- Centralized tutoring
- Monitoring/Tracking
- Scholars and Students may be assigned to attend study tables to improve study habits
  
- Data:
  - 6,050 students entered the COF office in the fall 2017
  - We held 30 review sessions with 14 taking place the week before finals
  - 3,379 students entered the COF office in the spring 2018

## Socio-Cultural Events

- 1-2 Mandatory Events
- 2-4 Optional Events
  - Choose between 5-12 events offered
- Events already happening on campus
  - Speakers
  - Movies
  - Athletic Events
  - Developmental workshops
- Purpose



# Office Environment

- Open Environment
- The “Brand”
  - Scholar gear
  - Staff apparel
- Intrusive support
- Open door policy
- Holistic support
  - Additional barriers to academic success
  - Life coaching



# Outcomes

- Community
- Academic Success
- Student Retention and Graduation



# Questions

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University  
of Akron

# Choose Ohio First Scholarship Program



Youngstown State University

08-09/16-66/16-77

Choose  **Ohio** First

YOUNGSTOWN STATE UNIVERSITY



**stem**

College of  
Science, Technology,  
Engineering & Mathematics

# YSU-COF Background & Motivation

- YSU-COF & Workforce Development
- Program Priorities
- Program Components
- Proven Success

# YSU-COF Workforce Development

- STEMM related companies/industries— career positions often set up by co-ops/internships set up by mandatory COF research projects
- Advanced/digital manufacturing (including additive/subtractive)
- Biohealth/biomedical/bioengineering
- STEMM education (secondary math, secondary science)
- YSU-BaccMed (premier integrated pre-med with primary care focus)
- Actuarial science / mathematical finance related companies
- Graduate school /academia across STEMM, including placements often set up by mandatory COF research projects

# YSU-COF Program Priorities

- **Predictors**

- Predicted growth in STEM fields but lack of qualified workforce, state-wide and in NE Ohio
- Mathematics preparation most important enabler or impediment to success in STEM disciplines

- **Priorities**

- Recruitment of mathematically qualified students to STEM majors/programs
- Recruitment/maths preparation of students from historically underrepresented populations in STEM
- Timely progress/graduation of STEM majors (defines “mathematically qualified” above)
- All YSU majors in STEM, but with emphases on:
  - Advanced/digital manufacturing (additive & subtractive)
  - Biohealth/biomedical/bioengineering majors
  - STEM education (secondary maths & science education)
  - YSU-BaccMed (pre-med/med program, primary care focus)
  - Actuarial science & financial mathematics

# YSU-COF Supported Programs

08-09/16-66/16-77

<u>SCIENCE</u>		<u>ENGINEERING</u>	
Environmental Science	Physics & Astronomy	Engineering	Industrial Systems Engineering
Integrated Education- Science	Chemistry	Chemical Engineering	Manufacturing Engineering
Biology	Geology	Civil Engineering	Civil Engineering Technology
Biochemistry	Physics	Electrical and Computer Engineering	Electrical Engineering Technology
		Mechanical Engineering	Mechanical Engineering Technology
<u>TECHNOLOGY</u>		<u>MATHEMATICS</u>	
Computer Science	Information Technology	Mathematics	Actuarial Science & Financial Mathematics
Computer Information Systems		Mathematical Statistics & Probability	Integrated Education—Maths

# YSU-COF Program Components: Partnerships

- Secondary Education Partners 32 high poverty school districts—urban, technical centers, diocesan schools, rural, STEM academies
- Community College Partners CCC, EGCC
- Higher Education Partners CWRU, CSU, KSU, NEOMED + NEOMED consortium (UA, BGSU, BWU, CSU, HC, KSU), UT, UC
- Industrial Partners America Makes, AST^2, HS, Humtown, Mercy Health, One Health Ohio, Vallourec-USA, Western, Nationwide, Ohio National, Anthem

YSU-COF  
Program  
Components:  
Pipeline &  
On Campus

- Free Summer Alg. II-to-PreCalc Bridge Program  
Targeting secondary partner students, month long, immersive
- Well-Defined Admissions and Funding Priorities  
**Targeting appropriately math prepared students**  
from STEM-underrepresented and medically underserved populations
- Scholarship/Contract Obligations Including 3.00 GPA + timely progress in STEM major + following bullets
- Monthly Cohort Meetings Mandatory: 10/year; 5/semester
- Research Team Projects/Presentations Mandatory: use research faculty mentors + higher ed. / industrial partners
- Academic Monitoring and Support Mandatory, including free private tutors on case-by-case basis

# YSU-COF Program Components: Bridge Details

- Free Summer Alg. II-to-PreCalc Bridge Program  
Targeting secondary partner students: high poverty rural/urban districts + financially disadvantaged
- Immersive On campus 8:00 am–Noon, 5 days/week, 4 weeks + 4 hours of homework/day
- Mix of Learning Styles Lecture-listen, inquiry-based, individual projects, team projects, course portfolio
- Bridge Design Originally designed by 2 partner H.S. faculty + 3 University faculty, including the pre-testing/post-testing instruments
- Bridge Delivery Partner H.S. faculty, in consultation with University faculty
- Bridge Costs Free: instructional/texts/materials costs borne by YSU-COF match account

YSU-COF  
Program  
Components:  
Mandatory  
Research Teams

- Mandatory Research Team Projects YSU-COF students on research teams mentored by research faculty mentors + higher ed. / industrial partners
- Period of Research November through early April, including winter break and weekends
- Mandatory Presentations Two peer-reviewed conferences and one recruiting event: YSU-QUEST and NE Ohio COF Student Research Conference + College of STEM ShowCase (YSU), respectively
- Frequent Updates Cohort meetings in late Fall / early Spring used in part for required project updates
- Assessment Surveys Each project team mentor/member surveyed as to each team member's participation
- Project Expenses Costs of research, research poster, travel borne by YSU-COF match account

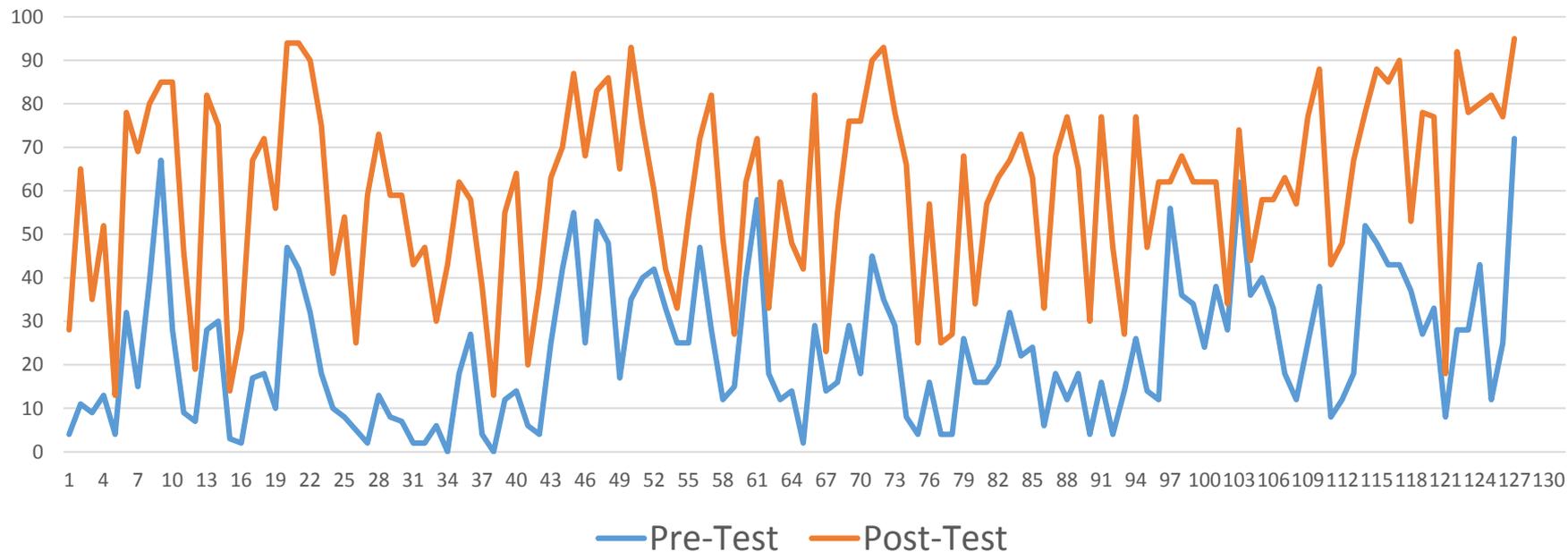
# Proven YSU-COF Successes



- Summer Bridge Pre-Test and Post-Test scores
- Student Awards/Recognitions
- Graduation Rates
- Recruitment and Retention
- Connections to Co-ops, Internships, REUs

# Summer Math Bridge Performance

## YSU-COF Summer Math Bridge Pre-Test and Post-Test Scores, 2008–2017



# Student Awards/Recognitions

## Annual Spring NE Ohio COF Student Research Conference

YSU projects often receive a significant number of "Top Project" awards—blue color in pie charts on right

### QUEST (YSU Research Forum)

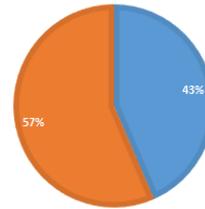
- 2014—Best STEM Undergraduate
- 2015—Best STEM Undergraduate Project and Best Overall Undergraduate project
- 2016—Best STEM Undergraduate Project, Best Overall Undergraduate project, OAS Research Award
- 2017 & 2018—Best STEM Undergraduate Project

### Other Honors

- YSU COF-sponsored research projects have been recognized at regional IEEE Student Activities conference
- YSU COF-sponsored research is most-cited article in Elsevier's *Additive Manufacturing* on-line journal; other peer-reviewed papers
- Several COF-sponsored projects lay the groundwork for patent applications
- COF research used in a featured article in *New Scientist*
- Co-ops/internships/REUs/graduate admissions across YSU-COF supported majors/programs

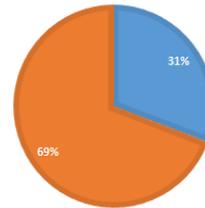
2013 CONFERENCE

■ YSU Posters ■ Other Posters



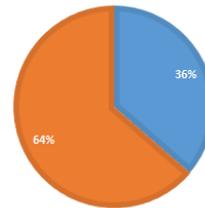
2014 CONFERENCE

■ YSU Posters ■ Other Posters



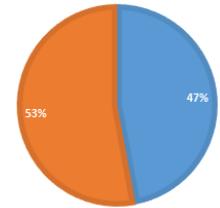
2015 CONFERENCE

■ YSU Posters ■ Other Posters



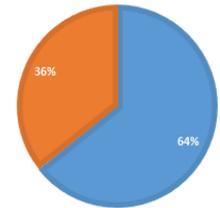
2016 CONFERENCE

■ YSU Posters ■ Other Posters



2017 CONFERENCE

■ YSU Posters ■ Other Posters



# YSU-COF Student Outcomes and Data

## 161 Scholars in Cohorts 2008–2013: Overall

- 109 (67.7%) have earned a degree in a STEM field
- 14 (8.6%) earned non-STEM degrees
- 14 (8.6%) are still enrolled

## 251 Scholars in Cohorts 2008–2016: Female Enrollment

- Women recruited: 84 of 251 total scholars (33.4%)
- Overall STEM: 30%

## 251 Scholars in Cohorts 2008–2016: Minority Enrollment

- Hispanic: 15 of 251 (5.9%)
  - Overall STEM: 2.3%
- Asian: 11 of 251 (4.3%)
  - Overall STEM: 1.9%
- Black/African American: 11 of 251 (4.3%)
  - Overall STEM: 3.4%

*\*overall STEM data from Spring 2017 Dean's Report*

# YSU-COF Student Outcomes and Data

## College of STEM Retention

- F'14 to F'15: **66%**
- F'15 to F'16: **66%**
- F'16 to F'17: **68%**
- F'17 to F'18: **N/A**

## YSU-COF Retention

- F'14 to F'15: **85%**
- F'15 to F'16: **90%**
- F'16 to F'17: **88%**
- F'17 to F'18: **88%**

# YSU-COF Student Outcomes and Data

## Graduation Rates

- **YSU Overall for Cohort Entering 2010**
  - Male—30%
  - Female—33%
  - Hispanic—14%
  - Black/African American—9%
  - Asian—58%
  - Pell Grant Recipients—20.51%
- **Choose Ohio First Recipients (2008-2011 entering cohorts)**
  - Male—66 of 81 (81.4%)
    - *59 received at least two years of support, 56 of which graduated (94.9%)*
  - Female—20 of 24 (83.3%)
    - *16 received at least two years of support, 15 of which graduated (93.7%)*
  - Hispanic—5 of 6 (83.3%)
    - *5 received at least two years of support, all which graduated (100%)*
  - Black/African American—2 of 4 (50%)
    - *2 received at least two years of support, both of which*

# YSU-COF Student Outcomes and Data

## Incoming Metrics

- COF Incoming GPA average: 3.72
  - Range: 2.63–4.00
- COF ACT Composite Average: 26
  - Range: 18–33
- COF ACT Math Average: 27
  - Range: 18–36

## Graduation Metrics (as of F'17)

- COF Graduating GPA average: 3.47
- 122 graduates to date
  - 34 summa cum laude
  - 16 magna cum laude
  - 19 cum laude
- Average time to graduate: 4.37 years (4.33 for those with  $\geq$  2 years support)

# Discussion & Questions



# Muskingum University COF Program Resources and Student Support

**Paul Szalay**

**Choose Ohio First Program**

Networking Meeting

May 18, 2018

# COF Program History

## ▶ Current COF Program

- **Choose Ohio First Scholarship Program (COFS) - Growing STEMM Education in Appalachian Ohio**
- Partner Institution: Zane State College

## ▶ Previously Supported COF Programs

- **Choose Ohio First Scholarship Program (COFS) - Ohio House of Science and Engineering: Success in STEMM through Collaboration** –Joint proposal with The Ohio State University and the University of Cincinnati
  - Funding Period: July 1, 2008 – June 30, 2017
- **Choose Appalachian Teaching Program (CAT) – Building a Community of Mathematics and Science Teachers for Southeastern Ohio**
  - Joint proposal with Ohio University, Shawnee State, Marietta College, Rio Grande University
  - Funding Period: July 1, 2009 – June 30, 2017



# Muskingum University COF Leadership Team

- ▶ **Paul Szalay**, Science Division Chair and Professor of Chemistry
  - **MU COF Program Director**
- ▶ **Rae White**, Professor of Education and Director of the Educator Preparation Unit
  - **STEMM Education COF Recipients**
- ▶ **Cindy Wilkins**, Professor of Nursing and Director of the Nursing Program
  - **Traditional and RN-to-BSN COF Recipients**
- ▶ **Joe Shaeffer**, Assistant Professor of Nursing
  - **RN-to-BSN COF Recipients**
- ▶ **Jan Winland**, Director of Graduation and Continuing Studies and Coordinator of Health Related Programs
  - **Muskingum Adult Program (MAP) Health Program COF Recipients**
- ▶ **Amber Gump**, Director of Student Financial Services



# Muskingum University Administrative Oversight and Support

- ▶ **Nancy Evangelista**, Provost
- ▶ **Mark Sanford**, Vice President of Graduate and Continuing Studies
- ▶ **Steven Soba**, Vice President of Enrollment and Marketing
- ▶ **Beth DaLonzo**, Senior Director of Admission
- ▶ **Dan Wilson**, Director of Institutional Research and University Registrar



# Student Populations Served

- ▶ **Traditional Undergraduate Students**
  - Campus residents
  - Off-campus residents
  - Commute from home
- ▶ **Non-traditional Adult Students**
  - Commute from home



# Educational and Economic Disadvantages of the Regional Population

## Educational attainment level of people aged 25 years or older for Muskingum and all adjacent Appalachian counties

County	No School or Less than HS	High School or GED	Assoc. Degree or Some College	Bachelor's Deg. or Higher	STEMM Bach. Degree
<b>Coshocton</b>	15.9%	48.9%	23.1%	12.1%	4.2%
<b>Guernsey</b>	14.8%	43.4%	28.6%	13.2%	4.6%
<b>Morgan</b>	13.5%	46.9%	28.9%	10.7%	3.8%
<b>Muskingum</b>	13.4%	44.4%	27.7%	14.6%	5.4%
<b>Noble</b>	18.9%	51.8%	19.5%	9.5%	3.1%
<b>Perry</b>	16.0%	45.5%	27.4%	11.0%	3.6%
<b>Average</b>	<b>15.4%</b>	<b>46.8%</b>	<b>25.9%</b>	<b>11.8%</b>	<b>4.1%</b>

TownCharts. (2015). Ohio Education Data. Retrieved from [www.towncharts.com](http://www.towncharts.com)



# Educational and Economic Disadvantages of the Regional Population

**Median household income from 2009-2013 (US Dollars) and state rank (Out of 88) for Muskingum and all adjacent Appalachian Ohio counties**

County	Median Household Income	Rank within the state of Ohio
Coshocton	\$41,274	68 <sup>th</sup>
Guernsey	\$38,841	79 <sup>th</sup>
Morgan	\$37,865	81 <sup>st</sup>
Muskingum	\$40,524	73 <sup>rd</sup>
Noble	\$38,290	80 <sup>th</sup>
Source: Index mundi. (2013). Ohio Median household income 2009-2013 by County. Retrieved from <a href="http://www.indexmundi.com">www.indexmundi.com</a>	\$41,446	67 <sup>th</sup>



# Approved CIP Codes for our Current COF Program

- ▶ 030104 – Environmental Science
- ▶ 110104 – Informatics
- ▶ 110701 – Computer Science
- ▶ 131316 – Science Teacher Educ./General Science Teacher Educ.
- ▶ 140101 – Engineering, General
- ▶ 260101 – Biology/Biological Sciences, General
- ▶ 270101 – Mathematics, General
- ▶ 400501 – Chemistry, General
- ▶ 400601 – Geology/Earth Science, General
- ▶ 400801 – Physics, General
- ▶ 513801 – Registered Nursing/Registered Nurse



# Approved CIP Codes for our Current COF Program

- ▶ 510000 – Health Services/Allied Health/Health Sciences, General
- ▶ 511004 – Clinical/Medical Laboratory Technician
- ▶ 511099 – Clinical/Medical Laboratory Science and Allied Professions, Other
- ▶ 512306 – Occupational Therapy/Therapist
- ▶ 150201 – Civil Engineering Technology/Technician
- ▶ 150399 – Electrical and Electronic Engineering Technologies/Technicians, Other
- ▶ 150499 – Electromechanical and Instrumentation and Maintenance Technologies/Technician
- ▶ 150501 – Heating, Ventilation, Air Conditioning and Refrigeration Engineering Technology/Technician
- ▶ 150599 – Environmental Control Technologies/Technician
- ▶ 150805 – Mechanical Engineering/Mechanical Technology/Technician
- ▶ 510803 – Occupational Therapy Assistant
- ▶ 510806 – Physical Therapy Technician/Assistant
- ▶ 510907 – Medical Radiologic Technology/Science – Radiation Therapist



# Programming – Operations, Oversight, and Advising

- ▶ The COF program has two dedicated program directors to advise the traditional undergraduate students, two for advising the non-traditional students, and one that offers advising to both populations
- ▶ In addition to the COF program advisors, each COF student has at least one dedicated academic advisor
- ▶ Amber Gump, the Director of Student Financial Services, and several professional staff members in Student Financial Services are dedicated to assisting COF students in financial matters
- ▶ Muskingum University senior administrative oversight is in place for our COF program



# Traditional COF Student Supports - Summary

- ▶ Academic Advising
- ▶ COF Programmatic and Financial Advising
- ▶ Scholar support plans as needed
- ▶ The Study Center – Peer Tutoring
- ▶ Research and Internship Programming
- ▶ Recognition Programming
- ▶ The Science Mentoring Program
- ▶ First Year Seminar



# Traditional COF Student Supports – Science Mentoring Program



# Traditional COF Student Supports – First Year Seminar

## ▶ **First Year Seminar Overview**

- Faculty Instructor and COF Student Mentors
- Cohort Unity
- Campus Services - Career Services, Computer & Network Services, etc..
- The Library and a Personal Librarian
- Academic Advising
- High School to Higher Education Transitional Advising
- Internships and Career Preparation Advising
- Science Specific Programming
- New Opportunities Coming – First Year Experience



# Traditional COF Student Supports – First Year Seminar

## ▶ Science specific programming

- Publishing and the peer review process
- The elements of a peer reviewed scientific paper
- Mini-research project
  - Oral Presentation with Visual Aids on a Pre-approved Topic
  - Personal Librarian
- Outreach programming planning and implementation
- Upper class COF student mentoring
- Upper class COF student research presentations



# COF Programming: Non-Traditional Students

- ▶ Academic Advising
- ▶ COF Programmatic and Financial Advising
- ▶ Scholar support plans as needed
- ▶ Educational Programs in STEMM Need Areas
- ▶ Scholarship Support Supplemental Benefits
- ▶ Outreach and Educational Opportunity Programming
- ▶ Regional Workforce Development



# Non-Traditional COF Students

## ▶ Workforce Development – Nursing in Ohio

- In 2010, the Institute of Medicine recommended that by 2020 80% of registered nurses have a BSN degree. Multiple studies have shown that mortality rates and failure to rescue rates as well as other patient care quality indicators directly correlate with the percentage of BSN nurses in a health system/hospital
- According to the 2015 Ohio Board of Nursing report 48% of registered nurses hold a baccalaureate or higher degree in nursing
  - 36% have the BSN
  - 11% have the MSN
  - 0.7% have a Ph.D., DNP, or other nursing doctoral degree
- 14% are currently enrolled in a BSN program
- 33% report that they plan to pursue a BSN or higher degree
- If an ADN graduate is hired by a health system they are typically given 2-5 years to complete a BSN so providing that educational pathway is critical



**Thank You from the Muskingum University COF Team  
to**

**The Ohio Department of Higher Education COF Leadership Team  
Fellow COF Campus Program Representatives**



University of Findlay

# Choose Ohio First Resources / Support

# History of COF @ University of Findlay

- Three Awards
- First Award – Education – In conjunction with Bowling Green State University
- Second Award – Biology, Computer Science, Education, Pharmacy
- Third Award – Computer Science, Education, Environmental Safety and Occupational Health



# History of COF @ University of Findlay

- College of Education
- 29 out of 31 (94%) undergraduate students who completed are teaching in Ohio. Not included in the count 9 students that changed majors or withdrew from UF. 2 are not teaching.
- 25 out of 37 (68%) of post-baccalaureate students are teaching in Ohio. One taught out of state then went into a PhD program at the University of Buffalo in New York. 5 are teaching out of state.
- Scholars were involved with many activities on campus and completed research with some Biology professors during the program.

# College of Education Activities



- STEM in the Park
- NWO Symposium on Science, Technology, Engineering and Mathematics Teaching
- Lecture by Dr. Christopher Emdin, Associate Professor in the Department of Mathematics, Science and Technology at Teachers College, Columbia University
- Assisted with Outdoor Camp for all 7<sup>th</sup> graders in Findlay City and Bluffton schools
- Presented at SSC Day at the University

# College of Education Initiatives

- Partner with over 70 school districts including rural, urban and high need school districts
- In July of 2017 the COE started a Center for Educational Partnerships and Innovation that provides professional development opportunities for educators
- The COE is in the second year of a one-to-one iPad initiative
- The COE works closely with Workforce Development/Raise the Bar on Leader in Me and Literacy initiatives
- The COE has also partnered with the University of Toledo Career Technical Teacher Preparation Program and opened up trainings for COE scholars with *High Schools/Middle Schools that Work* in Northwest Ohio



# College of Education Student Testimonial

I will forever be grateful for receiving the Choose Ohio First funding. It allowed me to continue my education at a highly respected university where I was able to learn all the necessary skills and education that will allow me to teach the future generations. I will be graduating on time in May 2018 because I received this scholarship. It allowed me to focus directly on my classes without having the financial burden that is associated with a four year degree. I can honestly say that without this scholarship many other factors may have derailed me from achieving my goal of graduating this May. I am very appreciative of the opportunity that I was given and very thankful for the funding.

Connor Sullivan '18

# History of COF @ University of Findlay

- College of Pharmacy
- Dating back to fall 2014
- 43 students
- Students have been involved in Research and Presentations-local, state and national levels, summer camps to recruit students to Ohio colleges and universities, community service, presentations to local schools regarding their major, this university, and community health issues at large activities
- 100% STAYED IN OHIO
- One 1 student dropping program

# History of COF @ University of Findlay

- Biology

Activities: Outreach programs such as STEM in the Park and Hancock County Farm Tour that have impacted over 5,000 families in NW Ohio, Rolling Thunder STEM Outreach

- All students have entered into Graduate or Professional school
  - Medical School: 1
  - Veterinary School: 15
  - Physician Assistant: 3
  - Masters of Public Health: 1
  - Unknown: 1



# History of COF @ University of Findlay

- Computer Science
- CSCI COF Program Summary
  - 30 total participants since 2012
    - 24 graduated
      - 17 are employed in Ohio (11 at Marathon Petroleum Corporation, Findlay, OH)
      - 5 left Ohio for employment (one joined the military)
      - 1 employment unknown
      - 1 full-time graduate student in our MSASA Program
      - 3 have earned MBA's and 4 are enrolled in technical masters programs
    - 6 are continuing scholars
    - 4 were dropped from program
    - 4 most recent graduates
      - 1 employed in Ohio
      - 1 employed out of state
      - 2 employment unknown



# History of COF @ University of Findlay

## • Activities

- IA Forum and SSC
- Participation in Programming Team Competition at CCSC Regional Conference
- Student Undergraduate Research Projects
- Lego Robot Project
  - Taught faculty members how to program Lego Robots
- Hour of Code Event with Marathon IT Explorers
  - Lego Robot Maze
- Scholar's Forum
- Provided an Hour of Code session with Android Programming for Marathon IT Explorers
- Taught programming to gifted middle school students
- Attendance at Tech Toledo Holiday Mixer
  - Largest gathering of IT Professionals in NW Ohio

**Robotic Maze Runners**  
Group Members: Mitchell Campbell, Christopher Reaper, Alex Menteer, Nolan Connell, Cody Frick, Joshua Robinson, Heather Beck

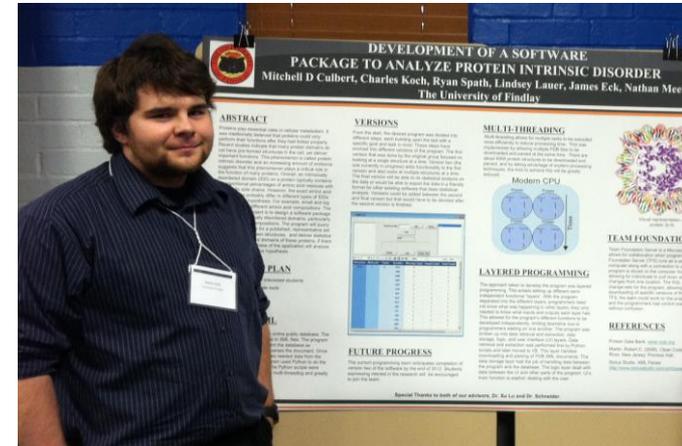
**About Us**  
We are a computer club organization that has been selected for the Computer Club of Findlay Program. This year as part of our department requirements, we are participating in various activities using LEGO MINDSTORMS robots. These robots are controllable robots with several different sensors and attachments. As a group, we have built and programmed these robots. This year a specialty contest as we will be participating in a special outreach program. Our purpose is to experiment with these robots, learn about their capabilities, and share our experiences. Being able to help other people learn, we are especially interested in future high school outreach opportunities using these robots.

**Today's Demonstration**  
In our demonstration today, we program a LEGO robot to navigate through a maze. The robot uses a sensor that is attached to its front to detect a black line. Once the robot has reached the end of the maze, it will return to its starting point. Other team members will be demonstrating the construction and the code behind the robot. Our goal with today's demonstration is to give a basic idea of what these robots are capable of as well as share our ideas and plans moving forward. Most of what we show today will be used in our Hour of Code event.

**Future Plans: Hour of Code**  
This spring we will be participating in our first and "Hour of Code" event. The purpose of this event is to expose students to the world of computer programming. We have worked together to prepare a presentation for our high school students to participate in, and a challenge for the students to solve. In the hour of code, we will give out a "Design a Challenge" that students will be given instructions informing that they have been given a design program. In the morning, they will have a challenge to solve. In the afternoon, we will have a program. We hope that this program will help to inspire students and increase their computer skills.

**What We Have Gained**  
We have gained a wide variety of skills ranging from communication and collaboration to our first experiences with robotics. Effective communication and teamwork has been essential throughout this process. We have gained valuable experience working together with our peers. We have had a chance to see the LEGO culture that encompasses a field of robotics. From working with these robots, we have gained a great deal of knowledge and experience in a field we might not otherwise be exposed to. Through this opportunity, we have been able to share our passion and love of learning and computer science with others.

**Thanks To...**  
• Dr. Christopher Nelson (Department)  
• Dr. Steve Pomeroy (Advisor)  
• COF Member Supporters and Contributions  
• Dr. Heidi-Maria Danks, COF Coordinator



# Current COF Program

- 11 first-year students
- 3 programs with active students / 1 program inactive
  - Education – 3 students
  - Computer Science – 5 students
  - Environmental, Safety, and Occupational Health – 3 students
  - Logistics - inactive



# Current COF Program

- CSCI 5 new freshman
- Mentors:
  - External: CSCI Advisory Board Members & COF Alums
  - Internal: Faculty Advisors & COF Advisor
- Activities:
  - COF Mixer attendance
  - SSC Presentation on COF Experiences
  - Attendance at IA Forum
  - Attendance at Invited Technology Speakers
  - Development of an Hour of Code for Marathon IT Explorers
    - Exploring Virtual Reality topic
  - Attendance at Tech Toledo Holiday Mixer



# Current COF Program

- ESOH

- Participate in two of the following three institutional level events:
  - Attend the Choose Ohio First Reception/Mixer at the President of the University, Dr. Fell's House
  - Present at the SSC Day about professional development you have received through this program.
  - Participate on the ESOH Freshmen team for the Run the World 5K on Thursday, September 7th at 6:30pm.
- Participate in UF-assigned Mentor program and work with your cooperating instructor during experiential courses
  - Meet with Dr. Murphy to discuss your professional development activities and goals
    - Mentors are alumni and non-alumni practitioners



# Current COF Program

- Participate in three of the following five ESOH activities (must attend one of the first two on the list and then two others):
  - Attend the Student Sustainability Leaders Conference, September 23, 2017 at the University of Dayton, Hanley Sustainability Institute
  - Attend and help out at the STEM in the Park on September 23, 2017.
  - Attend the Northern Ohio ASSE Dinner Meeting on September 25th at Martino's International Café in Vermilion, Ohio. Guest speaker is Marc Kolanz of Materion Corporation. Transportation will be provided,
  - Attend 80% of the OESHO/ASSE organization meetings during the academic year.
  - Attend the Fall College of Science Job fair and speak with each of the companies/agencies hiring from the ESOH program. Written verification required.



# Current COF Program

- ESOH
  - Corporate Partners
    - Marathon Petroleum
    - BP Husky Refinery Toledo
    - PepsiCo
    - Pepsi Bottling North America
    - G2 Revolution
    - Watterson Environmental, Inc.
    - Alvada Construction/Kirk Brothers Construction (same owners)



# Current COF Program

- Retention and Academic Support
  - Starfish

▼ Starfish

Starfish Home | Success Network | Profile

Upcoming Appointments

\* No Appointments

Home Appointments Students Services Search for Students

Overview My Students Tracking Zoom In Attendance

Flag Referral To-Do Kudos Success Plan Message Note Download

Search Student Name, Username, or ID Go Connection Choose Ohio First Committee Term Spring 2018 Cohort Choose Ohio First Scholars FA17

Name	Email	Phone	Cell Phone

# Current COF Program

- Retention and Academic Support
- Starfish

	F	G	H	I	J	K	L	M	N	O	P	Q	R	S	T	U	V	W	X	Y	Z	AA	AB	AC	AD	
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12						TO_DO	ACADEMI	COF-Instit	Participat	Manual	1/9/2018				118	0		Johnston,	johnstonv	419-434-5				Active		
13						TO_DO	ACADEMI	COF-Depa	Participat	Manual	1/9/2018				118	0		Johnston,	johnstonv	419-434-5				Active		
14						TO_DO	ACADEMI	COF-Ment	Meet with	Manual	1/9/2018				118	0		Johnston,	johnstonv	419-434-5				Active		
15						TO_DO	ACADEMI	COF-Main	Maintainii	Manual	1/9/2018				118	0		Johnston,	johnstonv	419-434-5				Active		
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# Current COF Program

- Retention and Academic Support
  - Starfish
  
- Intrusive Advising
  - Academic Advisor
  - Oiler Success Center

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**Recent Tracking Item Summary: Tuesday, April 24, 2018**

7 flags included in this summary.

- 
- To-Do: COF-Departmental Events
  - To-Do: COF-Institutional Events
  - To-Do: COF-Mentor Program
  - To-Do: COF-Mentor Program
  - To-Do: COF-Departmental Events
  - To-Do: COF-Institutional Events
  - COF-Below 3.0 Accumulative GPA: [REDACTED]

---

**Subject:** To-Do: COF-Departmental Events

William Johnston has added a new To-Do to your student folder. Below you will find the details of this task. If you have additional questions, please contact your advisor or go to [Starfish](#) to make an appointment.

1. **To-Do:** COF-Departmental Events

We care about your success!

Sincerely,

The Student Success Team

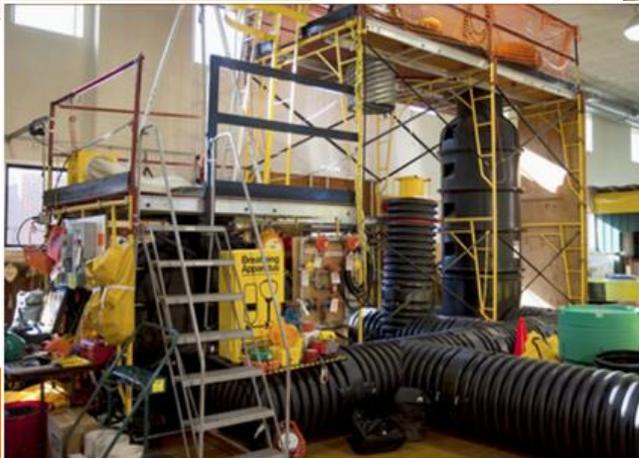
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Dr. Geise & Dr. Schneider,

I wanted to let you both know that I have accepted an offer from Crown Equipment Corporation in New Bremen, Ohio as an Embedded Software Engineer. If you are unfamiliar with the company, they manufacture fork lifts and provide warehouse solutions. I'm not sure exactly which team I'll be on yet, but I will be writing and testing software that goes in to the fork lifts. Also, I will actually be a part of the engineering department, rather than IT.

Thank you both for all of your help along the way. Choosing UF and the computer science major was the best decision I could've made. I've had multiple offers and can find opportunities in so many different areas within IT and engineering. I am so appreciate of the faculty and staff and everyone else that made both my personal and learning experiences so fantastic at UF.

Thanks again,



## Hour of Code: Virtual Reality

Cody Frick, Derek Reinhart, Joshua Robinson, Andrew Alten, Jonathan Allen, Jared Dixon, Skyler Brown, Keaton Frick, Nicholas Finley, Cameron Strahley

### ABOUT US

We are a group of computer science students chosen for the choose Ohio First program. Once a year we meet with the Marathon IT Explorers, a group of middle to high school aged students also interested in computer science. We hold an hour of code event to teach them and get them involved with different aspects of computer science.



### INTRODUCTION

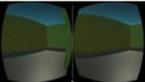
This year we will be providing the students a hands-on experience with virtual reality. Every student will receive a google cardboard headset. Over the course of a semester we've written up and tested a guide on how to build a virtual reality maze. The students will be tasked with building this maze, installing it on their phones, and then attempting to solve their maze in virtual reality. Our goal is to allow these students to explore their own creation within virtual reality. Upon completion of our tutorial, students will be encouraged to expand upon their creation in any way they choose.

### DEVELOPMENT

Development took place in Unity 3D and Visual Studio. Unity 3D is an engine used to create video games and simulations. The maze itself and the user controlled camera were created in Unity. Because the Google cardboard doesn't have any buttons, we also needed a way for users to move. We used Visual Studio to create an auto-walk script that allows users to walk in the direction their head is facing and stop by looking at the ground.



Above and below are two examples of what the students will see when building their maze in Unity 3D.



### GOOGLE CARDBOARD

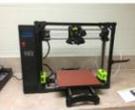
The students will be provided a Google cardboard headset to use and to take home after our event. Google cardboard is a relatively inexpensive alternative to other virtual reality devices. The headset itself is a cardboard smart phone holder with special lenses. The app is loaded on the phone and the lenses create the virtual reality effect.



### PREVIOUS WORK

The computer science choose Ohio First group has been working with the Marathon IT Explorers for four years now. Our previous three projects involved:

- Solving a maze with a Lego robot
- Building an Android smart phone app
- 3D modeling and printing



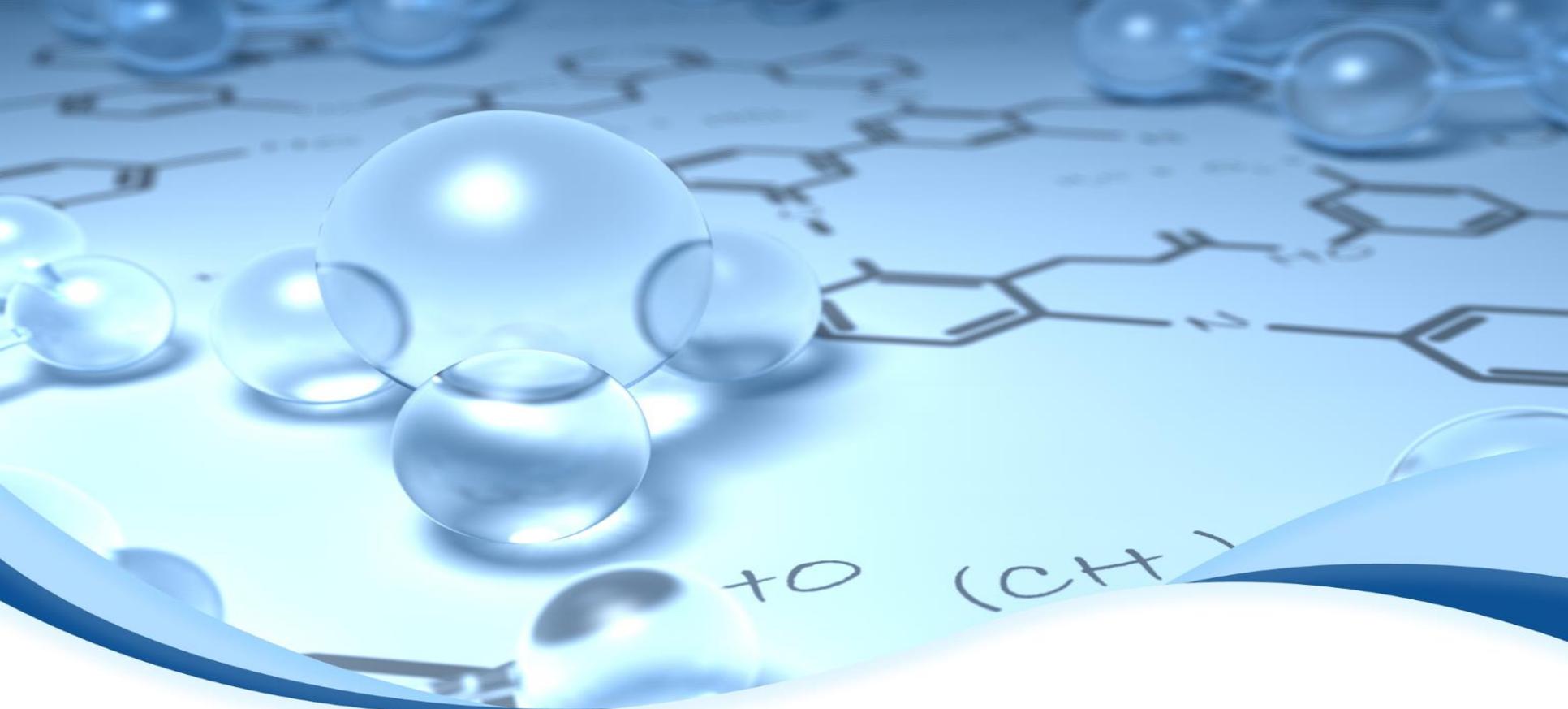
### VIRTUAL REALITY

Virtual reality is a relatively new but quickly expanding field in computer science. Basically, virtual reality is a way to immerse yourself in a virtual world. It can be used for playing video games, exploring the world from the comfort of your home, and learning new fields hands-on. Most commonly, virtual reality involves the use of some sort of headset and a pair of controllers, one for each hand. Some different tasks one can use to explore virtual reality include the Google cardboard, HTC Vive, Oculus Rift, and Playstation VR.

### THANKS TO...

- UF Computer Science Department
- Dr. Mary Jo Geise, Primary Advisor
- COF Scholar Supporters and Contributors
- Dr. Jeff Frye, COF Coordinator
- Marathon IT Explorers
- Marathon VR

# Questions?



# Choose Ohio First STEM Scholars Program

Baldwin Wallace University

Dr. Jim McCargar & Katie Adkins M.Ed.





# Baldwin Wallace University

**BW undergraduates** (approximate figures from Fall 2017 data)

- 3,208 undergraduates
- 54% female; 46% male
- 21% diversity
- 15% first generation
- 34% first-year cohort Pell-eligible
- 26% incoming first-year indicated STEM path





# Associate to Bachelors Transfer Model

## A2BW

- Streamlines completion bachelor's degree
- Guaranteed junior standing with core curriculum complete from associate degree
- Any regionally accredited college or university –recognizes all the credit earned in associate degree
- Relationship building with [LCCC](#) and Tri-C
- A2BW Pathways - Curricular guides for [Tri-C](#)





# Associate to Bachelors Transfer Model

## Relationship Building

## Honors Program Articulation

## On-Site Recruiting at Community Colleges

- Fall 2017 Recruiting with Admission Team
- Spring 2018 Faculty Problem Solving; Honors Symposium





**STEMM at Tri-C® presents:**

**Ed Meyer, Ph.D.**



Chair, Dept. of Physics  
Baldwin Wallace University  
and



Founder, Gedanken Institute  
for Problem-Solving



### ***“Becoming a Contributing Citizen”***

Never before in the history of humankind have the lives of people in one generation been so different from those of their grandparents, and never before has the percentage of citizens who fail to function as vital, contributing members of society been higher. What is the cause of this shift? What are the skills needed to live a purposeful life as a contributing citizen? In his interactive talk, Dr. Meyer will attempt to answer both these questions, supporting his theory with compelling evidence and examples.

**Wednesday, February 28 - 2:30pm**

**WSS 04 A (lower level of the Galleria)**

**Tri-C Western Campus**

11000 Pleasant Valley Road, Parma, OH 44130

<http://www.tri-c.edu/campuses-and-locations/western-campus/images/westmap.jpg>

**Free and open to the public**

**Complimentary pizza and soft drinks provided**

**Approved for one (1) Honors Program Activity Point**

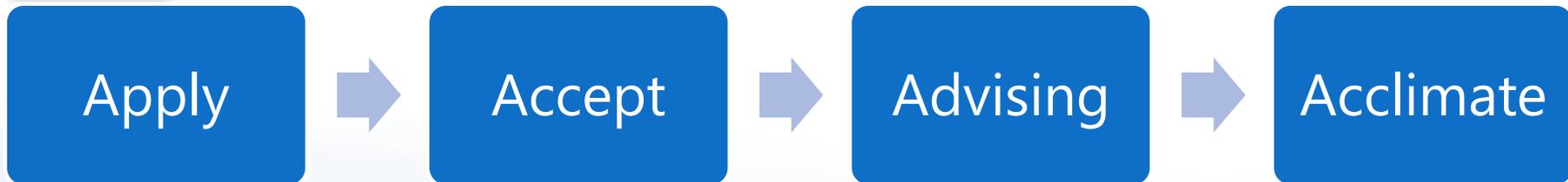
# 2017-2018 Cohort

## Choose Ohio First – Transfer participants (2017-18)

First	Transfer	Major	City	Race/ethnicity	Adult (23+)	First-Gen	Pell-eligible
Shelby	LCCC	Neuroscience	Wellington	Caucasian	Traditional	Not First-Gen	N
Christina	LCCC	Biology	Lorain	Hispanic/Latinx	Traditional	First-Gen	Y
Julye	Tri-C	Biology	Strongsville	Caucasian	Traditional	First-Gen	Y
Carlos	Tri-C	CNSA	Brook Park	Hispanic/Latinx	Adult	First-Gen	Y
Bethany	Tri-C	Biology	Lakewood	Caucasian	Adult	First-Gen	Y
Kenneth	Tri-C	CNSA	Lakewood	Caucasian	Adult	First-Gen	Y
Colin	Tri-C	Biology	Strongsville	Caucasian	Adult	Not First-Gen	Y
Sarah	Tri-C	Chemistry	Strongsville	Caucasian	Adult	First-Gen	Y
Alexandria	Tri-C	Biology	Berea	Caucasian	Adult	First-Gen	Y

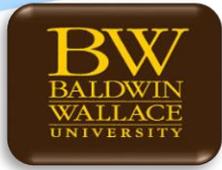


# Understanding the Transfer Process



- **Address Early Concerns:** credit transfer & campus resources, adjustment to new social and academic environments
- **Transfer Shock:** Temporary decline in GPA during the initial transition period to a new institution





# Early Support for Transfer Students

## Before Admitted

- Communicate through phone/email as prospective student
- Invitation to events and coaching before applying to program

## Summer Transfer Orientation

- Before semester begins - Financial Aid & STEM Scholars Program

## Transfer STEM Scholars Orientation

- Introduce academic and support service resources
- Establish academic, professional, and personal goals





# Mentoring for Transfer Students

## Success Coaching

- 2 coaching sessions a semester in their first year
- Encourage involvement (research, service, leadership)

## Faculty Mentoring

- Resources on building relationships with faculty

## Peer Mentoring

- Connect to junior and senior STEM Scholars through COF program events and STEM courses





# Senior Exit Survey

## Data Collection Source

- Electronic Survey Tool using Choose Ohio First Annual Report for template
- Students accustomed to spring progress reporting

## Timeframe

- Open window in April – close before finals (2 weeks to complete)
- Reminders with links to students who have **NOT** completed





# Senior Exit Survey - NEW

## Senior Focus Groups

- Not mandatory
- Breakfast/lunch for program feedback

## Follow Up

- Communicate with those who did not report
- Collaborate with Career Services on Student Outcome Survey
- Connect with LinkedIn Group





# Baldwin Wallace University

## Questions?

- What questions may we answer for you today?



**Choose Ohio First:**  
Recruiting, Retention/Advising  
2+2 transfer partnerships

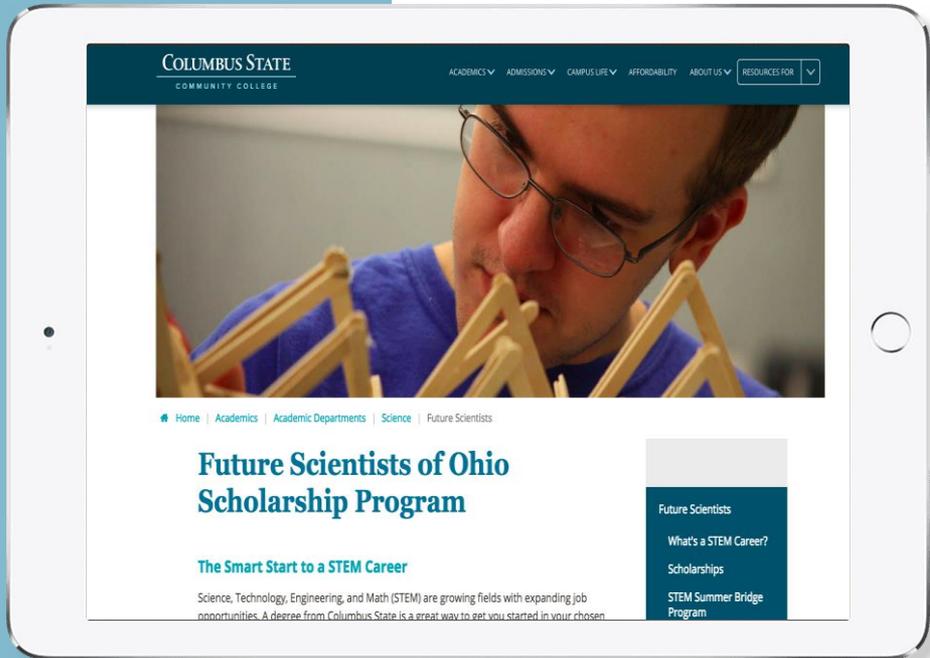
Laura Shady, MS Academic Advisor, STEM Program Coordinator  
**[lshady@csc.edu](mailto:lshady@csc.edu)**

Merideth Sellars, MS, Associate Professor, COF PI  
**[msellars@csc.edu](mailto:msellars@csc.edu)**

# Recruitment

- College Admissions Events/Visit Days
- STEM Community Outreach Events
- Advisory Board Committees
- High School Math and Science Teachers
- Current FSO Scholars

# Recruitment



- Website
- Social media
- Targeted email to admitted students

# Marketing

Science Technology Engineering Math Medicine **STEM**

## STEM at Columbus State

Science, Technology, Engineering, Math, and Medicine

If math and science have always been your best subjects, you're a natural for a career in the STEM fields. At Columbus State, you can explore STEM options, build a strong network, prepare for success in a STEM career, and get the strongest start on your bachelor's degree in a STEM major.

Associate of Science students at Columbus State have access to:

- Dedicated faculty with advanced degrees and professional experience in STEM fields.
- Top-notch facilities, labs, and technologies.
- Valuable community partnerships providing access to internships and research opportunities.
- In-depth STEM resources, including the STEM Room (Nestor 017) for studying, collaboration and idea exchange.
- STEM Summer Bridge Program, a week-of orientation and exploration for Incoming Associate of Science students, to provide a head start on Autumn Semester.

### Scholarship Opportunities for STEM students

#### Future Scientists of Ohio Scholars Program

- For students planning to earn an associate degree in a STEM major, then transfer on to complete a STEM-related bachelor's degree.
- 3.0 High School GPA required
- Provides full tuition for two years, and the opportunity to transfer to an FSO four-year institution with a reduced tuition rate.
- Additional funding available for PELL Grant-eligible students, to cover books, supplies and other educational expenses.

Find out more and apply at [csc.edu/futurescientists](http://csc.edu/futurescientists)

#### Louis Stokes Alliances for Minority Participations (LSAMP) Program.

- Provides access to tutoring, mentoring, student employment, research opportunities and more for minority students entering a STEM field.

Contact Dr. Gandis for information and to apply: [mgandis2@csc.edu](mailto:mgandis2@csc.edu)

**COLUMBUS STATE**  
OHIO SCIENTIST OF THE FUTURE PROGRAM

## Why Get a STEM Education?

The STEM fields (Science, Technology, Engineering, Math, and Medicine) offer countless career options and endless opportunity. The more education you get, the more STEM careers open up for you! STEM professionals are needed in every industry and are critical to keeping our nation on the cutting edge of technology, innovation and global competitiveness.

Here are just a few compelling facts about the STEM fields:

- Data from the U.S. Bureau of Labor Statistics (BLS) project jobs in the STEM disciplines to grow faster than most other fields.
- The national average salary for all STEM occupations is \$87,570 a year – double the national average for non-STEM occupations (\$45,700).
- 67% of all STEM occupations pay wages above the national average.
- STEM occupations grew twice as fast (18.5%) between 2000-2015 as non-STEM occupations (9.2%).
- STEM occupations are projected to grow 2 times faster than non-STEM occupations through 2025.
- STEM workers command higher wages, earning 26% more than non-STEM workers.
- Physical and Life Sciences have the most highly educated workforce, with nearly 40% holding graduate degrees.
- Graduate-degree holders in STEM fields earn \$40 an hour more than their non-STEM counterparts.
- More than 2/3 of STEM workers have a college degree.

**Start your STEM education at Columbus State!**

FUNDED BY:  
Choose **OhioFirst** 

- Brochures
- One page facts about “STEM”
- Customized folders

# Marketing

- Brochures
- One page facts about “STEM”
- Customized folders

## Future Scientists of Ohio Scholars Program

Your tuition-free start to a STEM education



**STEM**

**COLUMBUS STATE**  
FUTURE SCIENTISTS OF OHIO SCHOLARS PROGRAM

### Think of FSO as your springboard into STEM

If math and science have always been your best subjects, you're a natural fit for careers in the STEM fields. You also may be a great candidate for a full tuition STEM scholarship through the Future Scientists of Ohio (FSO) Program if you:

- Attended high school for at least 4 years
  - Scored 24 or higher on the ACT or 1200 or higher on the SAT
  - Plan to earn a bachelor's degree in science, technology, engineering, math or medicine
- As an FSO Scholar at Columbus State, you'll have everything you need to get a strong start in your STEM education.
- Full tuition for two years
  - Personal support and mentoring
  - Guided career exploration in STEM fields
  - Research and scholarship opportunities
  - A cohort of FSO scholars with similar goals and interests

### FSO PROGRAM BENEFITS

#### Tuition

The FSO Program is fully tuition covering tuition for a STEM education, and one of the biggest challenges can be paying for college. FSO Scholars receive a full tuition scholarship to cover the first two years of their education.

#### The FSO Program provides:

- Full tuition for summer and spring semesters, renewable for two years\*
- Continuing scholarship opportunities at four-year colleges and universities in the Future Scientists of Ohio Program
- Additional financial assistance for qualifying FSO eligible students through the NSF S-STEM program

\*Students must meet program requirements to be eligible for renewal.

#### Additional scholarship funding

Students are eligible for external PhD grant funds and meet the FSO Program requirements for PhD degrees for selected research institutions including science, technology, engineering and mathematics (STEM) funding. The National Science Foundation summer scholarship for research and teaching assistants, as well as additional funding to cover other college costs such as textbooks, supplies, and transportation.

#### Mentoring

Because FSO Scholars are a select group, the attention students receive is personalized and focused on their individual goals. A student-to-staff ratio of just 7:1 makes it easy to forge mentorships and build a strong network.

- Students meet with the STEM academic advisor and work with faculty members to:
- Assess all requirements to see how to earn an associate of science degree.
  - Explore career options to meet STEM fields.
  - Find the best transfer program (in eight four-year universities) to achieve their goals.
  - Select Columbus State classes to prepare for their chosen bachelor's degree program.



### Cohort

FSO students take many of the same courses as they enter which creates a cohort experience to:

- Build a strong network of peers who are pursuing careers
- Take courses together for FSO Scholars including some 4
- Forge lasting friendships based on common interests - see the www.fso-year colleges and universities in the area

### Future Scientists of Ohio Scholarship Eligibility

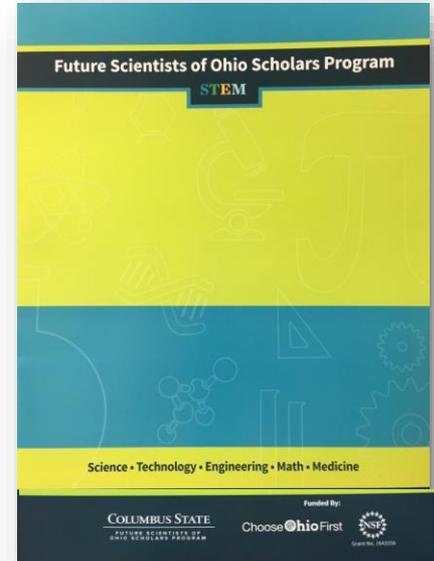
To be eligible for an award through Future Scientists of Ohio, students must:

- Be accepted to Columbus State Community College. Apply for admission at [ccc.edu/admapply](http://ccc.edu/admapply)
- Complete the Free Application for Federal Student Aid at [FAFSA.gov](http://fafsa.gov).
- Be an Ohio resident.
- Have a high school GPA of 3.0 or higher.
- Have an incoming freshman attending college for the first time.
- Have a composite ACT score of 24 or higher, or an SAT score of 1200 or take the Columbus State placement tests and place into Math 1149 and English 1100.
- Write an essay that explains why the student wants to be part of this program.
- Provide a letter of recommendation from a math or science teacher which speaks to the student's academic abilities, as well as their likelihood to complete a college-level STEM degree, work cooperatively in team-based projects, and accept responsibility for their academic success.
- Attend the STEM Summer Bridge program the summer prior to their first semester.
- Commit to attending STEM Club meetings throughout the year (meetings are held every other Friday).
- Complete the scholarship application at [ccc.edu/scholarships](http://ccc.edu/scholarships).

Learn more about becoming a Future Scientists of Ohio Scholar: To find out more about the FSO Program and apply for the scholarship, visit [ccc.edu/futurescientists](http://ccc.edu/futurescientists).

COLUMBUS STATE  
COMMUNITY COLLEGE

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# Retention

## STEM Summer Bridge Program

- Establish peer support networks
- Develop time management and study skills
- Identify campus resources
- Provide remediation



# Retention

## STEM Club

- Explore STEM career pathways
- Provide career networking opportunities
- Community outreach
- STEM related field trips





An all-inclusive CSCC club that features professional guest speakers and field experiences relevant to the fields of:

***Science Technology Engineering Math Medicine***

Meetings will be held at 1pm in DE 121 on:

September 9<sup>th</sup> - Overview of STEM Club, Career Services

September 15<sup>th</sup> - Computer Science Speaker, Manifest Solutions

September 29<sup>th</sup> - Bioscience Technology speaker

October 10<sup>th</sup> - Biology Speaker

October 27<sup>th</sup> - Tour of Byrd Polar Research Center

November 17<sup>th</sup> - Tour of Worthington Industries

December 8<sup>th</sup> - End of semester potluck

January 19<sup>th</sup> – Research Lab Do's and Don'ts

February 2<sup>nd</sup> – Explosives Scientist/Chemist

February 23<sup>rd</sup> – Nationwide Children's Hospital Tour

March 9<sup>th</sup> – Engineering Career Panel

March 30<sup>th</sup> – Transfer Student Panel

April 13<sup>th</sup> – OU Heritage College of Medicine Presentation/Panel

April 27<sup>th</sup> - End of the Semester Celebration

Join STEM Club on the CSCC Hub at [www.csc.edu/hub](http://www.csc.edu/hub)

- CSCC STEM CLUB or Contact: [lshady@csc.edu](mailto:lshady@csc.edu) or [msellars@csc.edu](mailto:msellars@csc.edu)

# Retention

## STEM Club

- Explore STEM career pathways
- Provide career networking opportunities
- Community outreach
- STEM related field trips



# 2 + 2 Partnerships

COLUMBUS STATE

PREFERRED PATHWAY

Capital  
University



FRANKLIN  
UNIVERSITY

M  
MIAMI UNIVERSITY  
OXFORD, OH • EST. 1809

OHIO  
DOMINICAN  
UNIVERSITY



Ohio  
Wesleyan  
University



O  
THE OHIO STATE  
UNIVERSITY

# Future Scientists of Ohio

= COF Partnership with OSU

COLUMBUS STATE

PREFERRED PATHWAY



# Thanks.



# Science and Math Education in ACTION



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Daniel J. Brahier, PhD  
Bowling Green State University  
Friday, May 18, 2018  
Internet: [bgsu.edu/action](http://bgsu.edu/action)

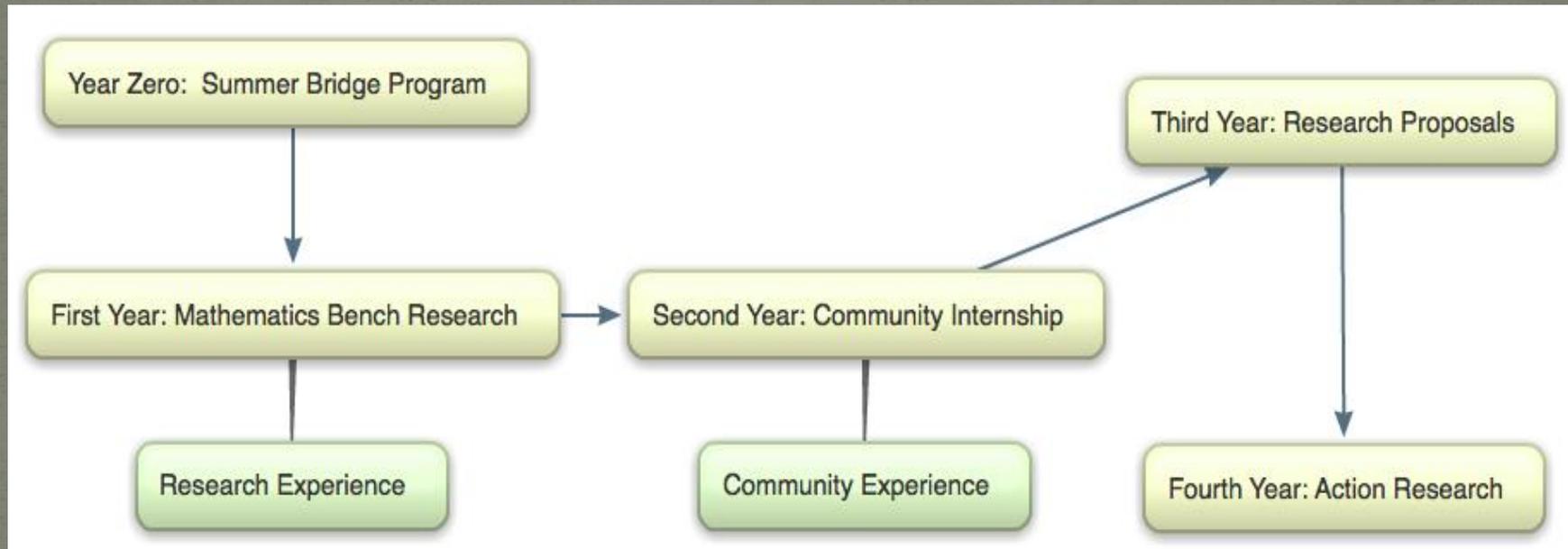
# Science and Math Education in ACTION

- Program began in 2009
- Targeted at Middle Childhood and Secondary Mathematics and/or Science Education majors
- Approximately 25 students per year (in cohorts)

# Participant Selection

- Minimum Requirements:  $ACT \geq 23$ ,  $GPA \geq 3.00$
- Application that includes essays, listing of activities, recommendation letter
- Applications are rated and ranked numerically
- Interviews – for top candidates (by FaceTime)
- Final Decisions based on online application and interview
- Cohort 10: 3.99 GPA, 27 ACT

# Program Components



# Program Components

- Summer Bridge (3-4 weeks, before freshman year)
- Freshman Research Project (pure math or science research in teams)
- Sophomore Practicum Internship (community)
- Junior/Senior Capstone Project (action research)
- Other features, such as presentations, professional development, living/learning community, field trips, and social activities

# ACTION/COF Newsletter

- Published 8 times/year (Sept, Oct, Nov, Dec/Jan, Feb, Mar, Apr, May)
- Sent to nearly 600 (students, families, alumni, administrators, faculty, “friends” of ACTION)
- Director’s column
- Updates on each cohort
- Spotlights on individual students
- Birthdays

# Field Trips



# Field Trips - Examples

- C.O.P.E. Course at Camp Miakonda - team building low-ropes course (optional high-ropes in academic year)
- Toledo Mud Hens Baseball Game - follow up to hands-on statistics session
- Trapped Toledo - team experience to solve clues to “break out” of room
- Toledo Zoo - overnight adventure during Summer Bridge and team building high ropes course during academic year
- Bowling - fun social event during Summer Bridge
- Imagination Station - hands-on science center

# Living/Learning Community



# Living Community

- FIRST YEAR SCHOLARS
- On average, more than half of our incoming freshman scholars choose to live in the ACTION Theme Community each year
- Out of 28 Cohort 9 freshman scholars, 20 lived on the floor (~75%) during the 2017-18 academic year
  
- RETURNING SCHOLARS
- Each year, nearly 1/3 of returning scholars elect to remain on the ACTION floor
- Several scholars have lived in the ACTION Theme Community for 4 years
- For the upcoming 2018-19 academic year, 60% of the rising sophomores plan to stay on the floor (15/25)

# Benefits of ACTION Theme Community

- Deepen friendships through the tight-knit community
- Study groups and collaboration with other highly ambitious and motivated students
- Interaction with older students for guidance and mentorship
- Residence hall in close proximity to the buildings where most of the science and mathematics courses are held

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search ID: aba0739

"I look forward to my first year as a teacher. I wrote lesson plans, attended in-service workshops, and decorated my classroom. Preparation is half the victory. It's the other half that concerns me."

# Science and Math Education in ACTION



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Daniel J. Brahier, PhD  
Bowling Green State University  
Friday, May 18, 2018

**Thank you  
for joining!**



**Networking Meeting**  
**Additional Notes from Discussion and Questions**  
**Friday, May 18, 2018**

**University of Akron Presentation:**

- Two COF recruiters – targeting high school students in their junior and senior years
  - Individual Success Plan for students – If students check one of several boxes (Pell Grant Recipient, First Generation College Student, English Learner, Veteran, etc.), it alerts the COF team that these could serve as potential sources of difficulty for students. UA uses this information to provide needed support to students.
  - Summer Bridge program funding: Students/families pay for books and food, but the university funds the rest of the program.
    - ❖ This year 47 students enrolled in the Bridge Program
    - ❖ Not all COF Scholars are required to enroll in the Summer Bridge Program
    - ❖ Classes Offered: English Comp., Math, Intro to Public Speaking, Human Diversity

**Youngstown State University Presentation:**

- “Math preparation is the most important enabler or impediment to success in STEM disciplines.” – Focus on “pre-calculus readiness” and “calculus readiness.”
- Biggest gap between Algebra II and Pre-Calculus so summer bridge addresses the gap through curriculum
- Summer Bridge Programs is for High School students – The students are responsible for their own transportation
  - Students must have taken Algebra II and received a C or above to get into the program (usually sophomores, but could be at any grade level).
- COF scholars sign a COF contract
- 25 faculty members who mentor research teams

**Muskingum University Presentation:**

- Science Mentoring Program consists of COF upperclassmen who are asked to be a part of the program – they do not apply. Their business cards are then placed in the science building to be selected by any students at the school – not just COF students
  - Training for student mentors: informal conversations and regular check-ins
  - Student mentors are not paid, but tutors are paid

**University of Findlay Presentation:**

- Strong business partnerships that they sought out by university: Corporate Mentors, Advisory Boards, Internships and Co-ops
- Corporate/Professional Mentorship program created discussion of the creation of COF Alumni Mentorship programs and maintaining COF Alumni connections by institution and statewide

**Baldwin Wallace University Presentation:**

- Senior Focus Groups for COF Scholars allow the program coordinators to ask open-ended questions and give the scholars a chance to have their voices heard.
  - Discussion of the focus groups possibly helping with COF alumni relations by allowing them to have their voices heard and forming a lasting connection with the program.

**Columbus State Community College Presentation:**

- Marketing materials for COF
  - Ask scholars how they found out about the scholarship – this information helped CSCC with marketing decisions
  - Had more applicants this year than any year before – believed to be directly impacted by COF updated marketing materials such as folders and brochures.
  - Community Colleges often have difficulty explaining who is eligible for the COF scholarship, so this information is broken down in marketing materials.
- Focus on different career paths because many students do not know the different career paths available to them in STEM.
- Students are interviewed and asked about their intentions before transferring to a 4-year institution (such as COF partner OSU). This information is used when tracking students.

**Bowling Green State University Presentation:**

- Publishes a quarterly newsletter of COF updates sent to 600 contacts including current scholars, community members, parents and alumni