



2021-2022 ANNUAL REPORT



# OHIO

## *Informal Learning Program*



A PROGRAM DEDICATED TO  
FOSTERING THE TECH CULTURE AT  
THE OHIO STATE UNIVERSITY

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### PROGRAM STAFF

Julia Armstrong  
Cal King

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# OVERVIEW

## MISSION

The OHI/O Program fosters a tech culture at Ohio State and its surrounding communities, ultimately providing students the opportunity to learn and build with real technologies outside of the classroom.

## STRENGTHS

- Corporate Support & Partnership
- Multifaceted Tech Talent Pipeline
- Education for Career Development
- Diversity + Inclusion for Excellence
- Campus + Community Partnerships

## VISION

OHI/O enhances learning experiences and engagement between students, community, industry, and alumni. OHI/O emphasizes providing students an informal and diverse learning platform regardless of experience or background.

## COMPONENTS

- Collegiate Competitions
- Alumni Engagement
- Industry Mentorship
- Hands-on Workshops
- Education & learning research
- Scholarships + Grants
- K-12 Outreach

## PROGRAM ENGAGEMENT

**1500+**

Over 1500 students participated in experiential learning opportunities.

**20%+**

All OHI/O portfolio events boast that 20% (or more!) of participants identify as women.

**150+**

Over 150 Ohio State alumni volunteered or attended an event as a guest.

**200+**

Over 200 pre-college participants through community development events and programs.



# GOALS

## FISCAL SUSTAINABILITY

OHI/O takes a comprehensive approach to building long-term relationships with sponsors. All events are funded through industry support and managed within a set operating budget.

Due to years of fiscal responsibility, the goal is finally realized to establish an endowment fund to offset future program overhead. The next steps include further cultivating alumni donor relations and seeking additional Program Level sponsorships.

**In February 2022, the Dean of Engineering and the Board of Trustees approved a long term use fund to start building the future sustainability of the OHI/O program.**

## EDUCATIONAL OUTREACH

OHI/O is committed to supporting educational experiences in the community beyond campus.

- High School I/O offers any high school student across the state a hackathon experience.
- Partner in the Computer Science Engineering department's Explore Computer Science Research program.
- Provided financial support for MakerX, Code I/O and Cool tech Girls focusing on STEAM outreach and support for middle school girls.
- Sponsored the first Climate Focused Hackathon at Ohio State.
- Provided logistical support to Can't Stop Columbus where hundreds of volunteers produced over 65 impactful projects since March 2020.

## PARTNERSHIPS

OHI/O continues to cultivate new partnerships on campus and beyond. With our proven success hosting large events, various student organizations and academic centers partnered with OHI/O on topic-specific events.

In 2021-2022, Julia Armstrong, the OHI/O Director:

- Volunteered as a judge for the TechnoFashion program.
- Served on the CSE Outreach committee
- Was an invited speaker for the Digital Solutions Gallery forum.
- Project coach for Can't Stop Columbus

In 2021-2022, Program Coordinator Cal King

- Worked with Columbus Young Professionals as a leadership fellow
- Partnered Student Life Multicultural Center to host a Trans Awareness event
- Volunteered at MakerX to host an outreach event for families



# University Alignment

**OHI/O is a part of the greater university and strives to support Ohio State's strategic plan through these pillars of excellence. This living framework guides the University and the OHI/O program, driving forward the future of higher education.**

## Teaching and Learning

OHI/O offers unique informal and experiential hands-on learning opportunities with aid from industry experts, alumni, faculty and staff to provide support. Informal learning elements are integrated into coursework in CSE and ECE.

I

## Access, Affordability and Excellence

OHI/O creates informal and experiential learning programs open to every student, regardless of major or experience level, and completely free to participate. Online, in-person and hybrid options make access personalized for each student.

II

## Research and Creative Expression

Self-guided learning is an essential component for successful research. Similarly, creative problem solving and expression is found in the core of all OHI/O Program facets. Partnerships with faculty research labs are encouraged. Program administration focuses on research of learning through OHI/O events.

III

## Academic Health Care

Medical industry tech challenges and resources are a component of the OHI/O Program, thanks to strong partnerships with the College of Nursing, Innovation Studio, Biomedical Engineering, BMES, and the Center for Medical and Engineering Innovation.

IV

## Operational Excellence & Resource Stewardship

With limited funding, care is taken to minimize waste and offer only the most impactful opportunities. The OHI/O Program runs on a lean staff and many volunteer hours.

V

# COVID19 RECOVERY

**OHI/O was uniquely positioned to pivot in response to the pandemic. As an agile tech organization, OHI/O was able to quickly take all competitions and events virtual. This past year, OHI/O has offered hybrid events and a mixture of both virtual and in-person experiences.**

## ACCESSIBILITY

Taking collaborative events virtual, such as HackOHI/O, opened the door for nationwide participation and made events more accessible for students with disabilities. Teams could connect and collaborate from anywhere, and virtual platforms provided more tech integration with every experience. Virtual gatherings and events not only protected the community from the pandemic, but also offered an engaging and valuable outlet for creation. OHI/O events are more inclusive than ever before.

## NEW EXPERIENCES

Transitioning events between virtual and hybrid gave OHI/O the opportunity to explore new ways to deliver experiences. By offering an event as a fluid in-person and remote access event, it was clear what features were most important to participants and sponsors. For the first time, MakeOHI/O was offered as an in-person makerspace without food and beverage or an overnight stay. The funds were redirected to provide participants with even more tools and gear to work on their projects. Keeping a focus on remote participation provided the opportunity for mentors and judges to participate from across the country, diversifying and increasing the value of the event.

## THE FUTURE

Based on the successes from 2021-2022, OHI/O will continue to explore hybrid options to offer remote access in combination with the option to gather. The focus will be on fostering the connections people experience in person, while also capitalizing on the accessibility and reach of virtual events. Fall 2022 will involve safeguarded in-person participation that continues to protect our communities with a focus on experience quality and diversity. As OHI/O builds greater networks of alumni and industry support, having flexible engagement options is a benefit to all.





# FISCAL PRINCIPLES

## ACCESS

Financial standing will never stand in the way of a student participating in an OHI/O opportunity.



Thanks to generous contributions, OHI/O provides all opportunities free of charge, and provides supplies & resources to each participant.

## COMMUNITY

OHI/O gives back to Ohio State students and the families of our Central Ohio community to support a growing tech culture.



Striving for a minimum of 10% of spend on K12 programs, OHI/O supports projects, tech scholarships, and other entities with a shared mission.

## RESPONSIBILITY

A focus on fiscal responsibility to provide high quality events at a low per-person cost to the program.

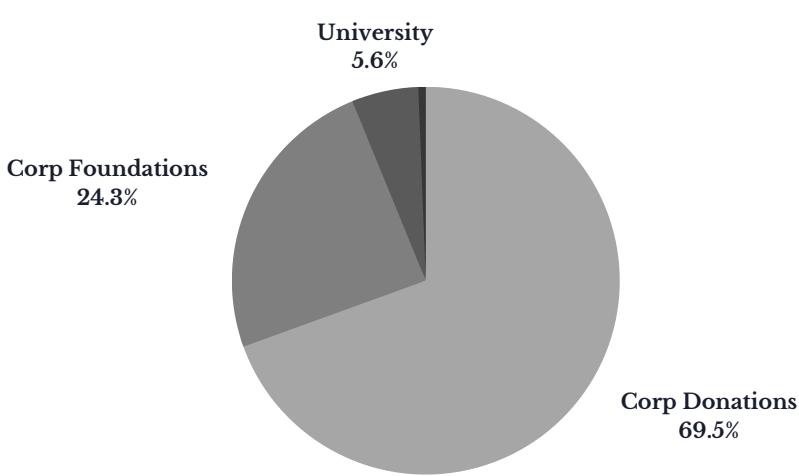
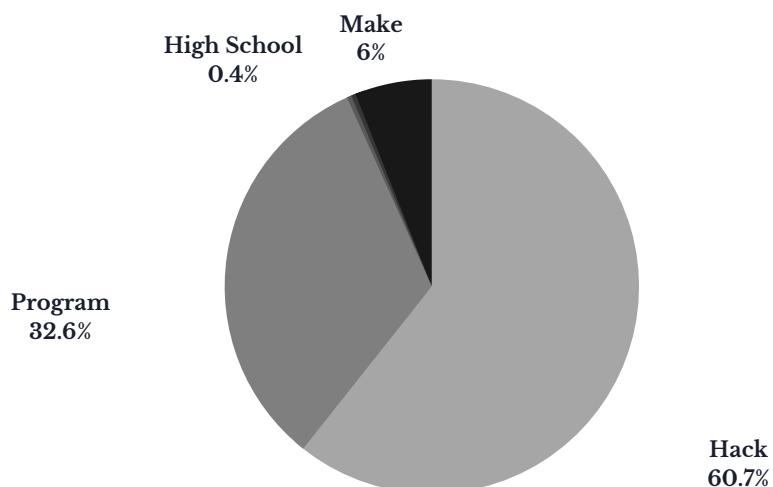


Sourcing the most cost effective supplies, spending time developing partnerships, and focusing on the most impactful community support.

# REVENUE & EXPENSE

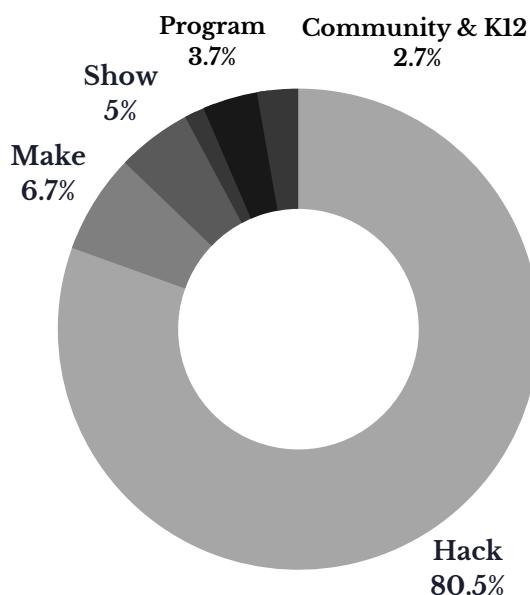
## REVENUE BY EVENT

- Sponsors are able to choose individual events or the entire program when pledging funds.
- HackOHI/O continued to attract the most donors.
- Microsoft renewed for the fourth year as lead Program Sponsor.



## REVENUE BY SOURCE

- In 2021-2022 OHI/O also sourced a small amount of individual funding from reoccurring gifts and private donors
- Corporate donations remain the main funding source for OHI/O events due to interest in recruiting participants, coming in at over \$250K.
- As HackOHI/O remains a University Signature event, a refund was provided to help offset Ohio Union expenses.



## EXPENSE BY EVENT

- HackOHI/O was again the largest and most expensive event of the year, as catering and rental costs are rising across the university.
- MakeOHI/O had similar supply costs to last year as electronics kits were provided to all participants (even though catering was removed from the budget).
- This year, ShowOHI/O was more expensive as event benefits increase and rising rental costs in combination with lesser university support impacts total OHI/O expenses.

# OUTREACH



## CODE I/O

A free computer-science workshop for students ages 10 - 15 (girls strongly encouraged to apply). This workshop aims to enable students to see the power and fun of programming. Led by ACM-W leaders.

## HIGH SCHOOL I/O

A one day hackathon for high schoolers, offered online this past spring reaching a larger, statewide audience of participants. Led exclusively by the OHI/O team, with assistance from various faculty and alumni.

## MAKERX

An annual festival of digital design and creation featuring exhibitors with robots, video games, digital art and performance, VR, 3D printing, makerspaces, drones, inventions and more.

## OHIO TECH DAY

OhioX curates a full day interactive experience bringing together an Ohio tech audience featuring prominent speakers, tech demos, and networking opportunities. While free and open to anyone, the focus is on high school students and teachers. A few OHI/O student leaders sat on an interview panel to talk about Ohio State's Computer Science program.

## COOL TECH GIRLS

The TechnoFashion program is a year-long, immersive, hands-on exploration for middle school girls of wearable tech and design.

## CLIMATATHON

24-hours of student collaboration and innovation to build Ohio's climate resilience.

BYRD POLAR AND CLIMATE RESEARCH CENTER

## BUCKEYE CTF

Capture the Flag (CTF) is a hacking competition in which teams compete to obtain "flags" by solving security-based problems.



## EXPLORE CSR

Research-based futures: pipeline for minority populations to explore grad school Computer Science Research options

THE OHIO STATE UNIVERSITY  
COLLEGE OF ENGINEERING

Department of  
COMPUTER SCIENCE AND ENGINEERING

## HACK AI

A 2-day hackathon where students can choose from challenges or tackle their own projects with the use of artificial intelligence.



## DATA I/O

A concentrated experience with data and analytical tools where participants collaborate with peers, professors, and professionals. Groups of 1-4 work on projects relating to AI and predictive algorithms, data visualization, and/or actionable insights. Open source data sets are provided or groups may also provide their own if data.



## PARTNER EVENTS



# CORNERSTONE EVENTS

## HACKOHI/O

HackOHI/O is an annual 24-hour hackathon attracting over 500 participants for a full weekend of coding, building, learning, networking, and innovation. In 2021, HackOHI/O offered participants a fully hybrid experience allowing teams to be any combination of remote and in person throughout the event. This model also offered mentors, judges and sponsors the opportunity to engage students both in-person and online from across the country.



### Angry Pixies

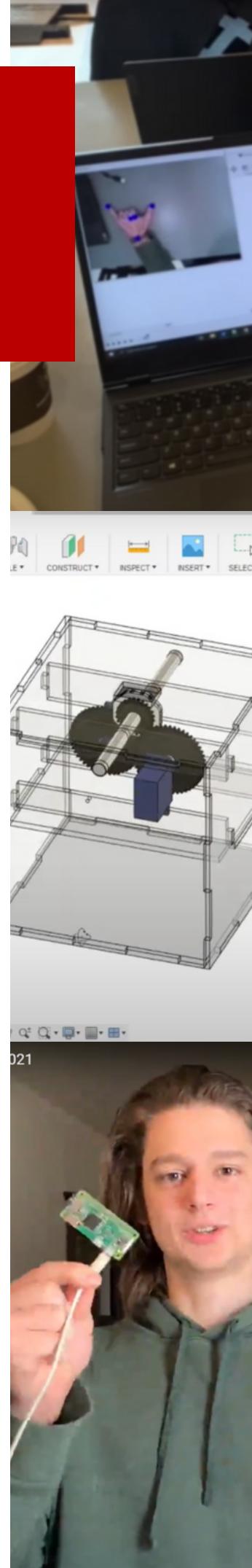
A webcam based gesture mouse software for ease of use and accessibility with applications for 3D Modeling programs.

1

First ever "Winner's Circle" event hosted with EVP Grace Wang celebrating work from top teams

44

Alumni returning as mentors, judges or industry representatives.



## MAKEOHI/O

250 undergraduate and graduate students design, build, and demonstrate projects. In 2022 MakeOHI/O embraced a new event format focusing on a virtual experience while still offering a makerspace for participants to use. OHI/O provided gear to each team for their build and to keep. The hybrid model with a virtual focus allowed for greater accessibility while the take home kits empowered students to work on their projects even after the event.



### A Cubed

A single cell braille reader, able to output any combination of a braille character which are more affordable and expandable.

32

Different majors represented across participants.

50

Customized hardware kits provided to teams.

# SHOWOHI/O

This formal event highlights outstanding and innovative technologies developed by Ohio State faculty, students, and alumni. This event reaches beyond campus, linking students and faculty to alumni and the entrepreneurial community to celebrate and support tech entrepreneurs making an impact.

## RESOURCE TABLES

For the first time in 2022 ShowOHI/O invited startup and tech support resources from campus and the community to table and connect with entrepreneurs. We aim to create connections that support tech entrepreneurs reach their next stage of development.

- **SEA Change**- A columbus based nonprofit providing training for social entrepreneurs.
- **The Entrepreneurial Business Law Clinic** at The Ohio State University Moritz College of Law.
- **Can't Stop Columbus**- a community-wide movement addressing our community's biggest challenges.
- **Book + Street**- a comprehensive finance and administration services for private and pre-IPO companies, and also design and administer equity-based compensation plans
- **Big Kitty Labs**- providing business solutions, software development services, and mobile app development.

## VIP Q&A PANEL

For the second year ShowOHI/O featured a panel of experts to discuss topics most important to budding tech entrepreneurs. Guests were invited to vote for their favorite project to receive the Buckeye Choice award sponsored by the American Electric Power Foundation.

### Panel:

- **Paige Wilson**, Assistant Clinical Professor of Law
- **Derek Dehart**, the head of product development at Battleface
- **Dr. Emre Koksal**, PhD MIT, Founder of DAtAnchor, and Professor at Ohio State University
- Hosted by **Cheryl Turnbull**, Senior Director, Keenan Center for Entrepreneurship



### A Cubed

The Enigma reader - An affordable refreshable braille display. Born at MakeOHI/O, has gone on to receive the **Buckeye Accelerator award of \$50,000.**

**125+**

Attendees: students and professionals

**20**

Tech Entrepreneurs launching new ventures presented

In partnership with:



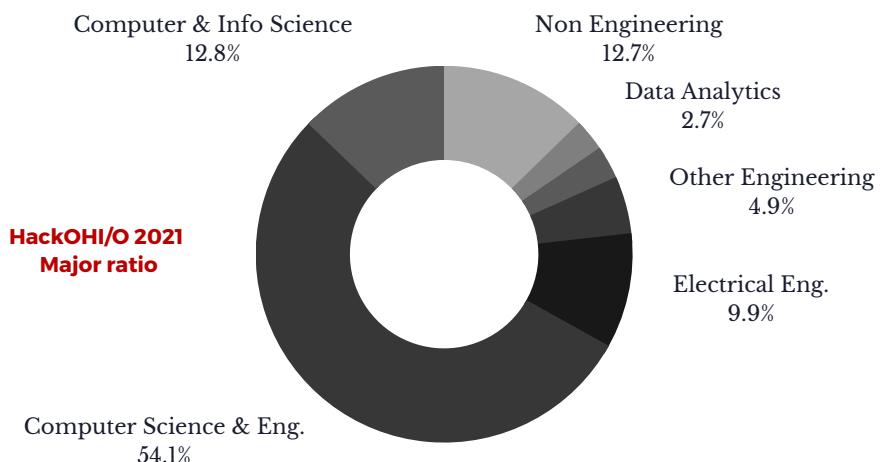
# PARTICIPANTS

## OHI/O PROGRAM

Events are 100% free, promoting the best in creative problem solving. Many events connect students to industry sponsors to form long-lasting relationships. The OHI/O program reaches over 60 majors and more than 2000 students, faculty, staff and alumni each year.

## HACKOHI/O

At HackOHI/O 2021, more than 60 different majors from 512 participants in the event. This is one of our most diverse events. Over half of the registrants were Computer Science Majors. The others represented a mix of engineering, data analytics, arts and science, business and medical majors.

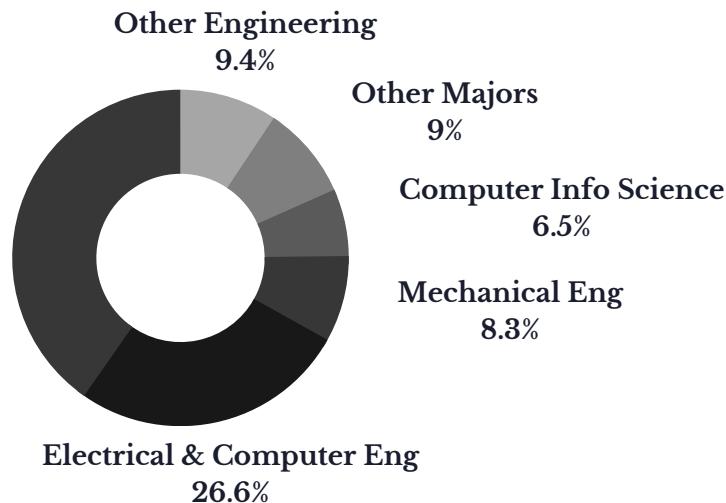


## MAKEOHI/O

In 2022 MakeOHI/O offered a fully virtual experience with an in-person makerspace. This allowed teams to form in person or online and for mentors/judges to interact in a variety of ways. Each team was provided a starter kit and access to additional gear in the makerspace. 291 students registered across 36 majors. 50% of the 62 teams submitted for judging, 23 of which submitted for sponsor challenges.

Computer Science & Eng  
40.3%

MakeOHI/O 2022  
Major ratio



# FUTURE TARGETS

## TECH ENTREPRENEURSHIP

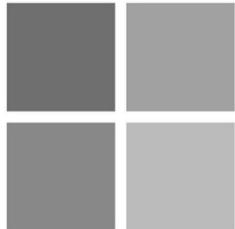
Harnessing the engineering mindset is the next step in supporting future generations of engineers. We aim to not only encourage but support students in their pursuit of entrepreneurship and the development of their tech projects at any part of their journey. Our hackathons provide a launch pad for students to kickstart a new idea while ShowOHI/O helps connect them with valuable resources on campus and across the community. Through these staples and partnerships with the Ohio State Keenan Center, we hope to drive students to the President's Buckeye Accelerator program and help make the impossible, possible.

## ALUMNI ORGANIZATION

As the OHI/O Program matures and more students each year graduate who participated in OHI/O events or served as OHI/O student leaders, we will stay connected to alumni returning to volunteer as mentors and judges. These young professionals are interested in forming an official alumni organization to better support the OHI/O Program and their own professional career journeys.



# SPONSORS



# Microsoft

**HONDA**  
The Power of Dreams

**AMERICAN  
ELECTRIC  
POWER  
FOUNDATION™**  
BOUNDLESS ENERGY™

**ENGIE**

**Root** Insurance Co    **Veeva**    **BATTELLE**

**Big Lots**

**Capital One**

**Cardinal Solutions**

**Amazon Web Services**

**Deloitte**

**Crown Equipment**

**Genpact**

**JobsOhio**

**Lamden**

**Mobikit**

**Nationwide Insurance**

**Key Bank**

**Olive**

**Quantum Health**

**Ford Foundation**

**CHN Analytics**

**Capital One**

**Rev One**



# PARTNERSHIPS

OHI/O partners across Columbus.



THE  
**INNOVATION STUDIO**

the  
**Electronics Club**



**CMEI**



**BMES** BIOMEDICAL  
ENGINEERING  
SOCIETY

**KEEN**  
ENGINEERING UNLEASHED



**BDAA**  
BIG DATA & ANALYTICS ASSOCIATION

**DIGITAL FLAGSHIP**

Institute for  
CYBERSECURITY & DIGITAL TRUST

cooltechgirls

 THE PAST FOUNDATION

**CYBER SECURITY CLUB**

BYRD POLAR AND  
CLIMATE RESEARCH CENTER

 **THE OHIO STATE UNIVERSITY**  
COLLEGE OF ENGINEERING

Department of  
ELECTRICAL & COMPUTER ENGINEERING

Department of  
COMPUTER SCIENCE AND ENGINEERING

 **THE OHIO STATE UNIVERSITY**  
UNIVERSITY LIBRARIES

 **THE OHIO STATE UNIVERSITY**  
OFFICE OF STUDENT LIFE

 **THE OHIO STATE UNIVERSITY**  
ALUMNI ASSOCIATION

 **THE OHIO STATE UNIVERSITY**  
KEENAN CENTER FOR ENTREPRENEURSHIP

# LEADERSHIP

## FACULTY ADVISORY COMMITTEE

In its fourth year, the Faculty Advisory Committee (FAC) met twice. Members are volunteers from around campus who are passionate about the work of OHI/O, can offer various elements of support, and understand what it means to the students and for the community.

<b>Meris Longmeier, Faculty Director</b>	<b>University Libraries</b>
<b>Jeremy Morris, Faculty Director</b>	<b>Computer Science and Engineering</b>
Steve Bibyk	Electrical and Computer Engineering
Rachel Kajfez	Engineering Education
Sandra Metzler	Mechanical and Aerospace Engineering
Amy Thaci	Engineering Career Services
Danny Dotson	University Libraries
Tim Raderstorf	College of Nursing & Innovation Studio
Zach Sanderson	Innovation Studio
Josh Roush	Translational Data Analytics Institute
Chris Orban	Physics
Jessica Philips	ODEE Digital Flagship
Rick Voithofer	Program Chair of Educational Studies, EHE

## INDUSTRY ADVISORY BOARD

Peter Glotfelty, Software Engineer	Microsoft
Beth Pan, Software Engineer	Microsoft
Eric Bauer, R&D Engineer	Honda
Samantha Lynch, Sr. Coordinator	Honda
Wiley Elliot, Project Manager	AEP
Aaron McCarty, Cyber Computer Scientist	Battelle
Ken Mulh, Sr. Engineering Manager	ROOT Insurance
Derek Ochs, Sr. Dir. of Engineering	ROOT Insurance
Rob Cary, Program Manager	Engie
Ted Griffith, Managing Director for Information Technology and Logistics	JobsOhio
Dave Brewster, Director, Technology Industry	JobsOhio
Abhishek Mendiratta, Consummate Innovation & Transformation Specialist	Genpact
Manu Goel, Senior VP for Data, Cloud, Experience, Digital Commerce	Genpact
Amit Bhaskar, Transformation Partner & Analytics Site Leader	Genpact
Catherine Allshouse, EVP Internal Operations & CIO	Veeva Systems
Sheri Jones, Manager, Enterprise Architecture	BigLots
Rachel Gough, Lead Corporate Talent Acquisition Specialist	BigLots

# STAFF

## **Program Director: Julia Armstrong, PMP**

Julia (BM, BS, M.Ed.) has been in the role of Program Director for OHI/O since August 2017. She has grown OHI/O from two events to a comprehensive platform including over 12 events, the Faculty Advisory Committee and the Industry Advisory Board. In this time, Julia has fundraised over \$1 million for the program. She has worked to build strong connections and cross-support around the university and the community. Her interests go beyond event planning into cultivating student leaders, educational research, curricular development, and the ever changing landscape of workforce development.

## **Program Coordinator: Cal King**

Cal (BA, BS) comes from a background of community building, marketing, and MAKE-ing in her previous role as Chief of Staff at the Idea Foundry. Starting her OHI/O role in 2020, she helped transition OHI/O events to virtual experiences and facilitate distance learning experiences. Her strengths are in community activism and cultivating student leadership. Her drive is to make space for inclusive tech programs that empower individuals to impact their neighborhoods and make positive change in the world.

# STUDENT EXECUTIVE BOARD

Adit Anup .....	Sponsorship and Marketing
Matthew Ayers .....	Marketing and High School I/O Lead
Grace Cao .....	Finance Lead & Hack Co-Lead
Amber Phillips .....	ShowOHI/O Lead
Christopher Egolf .....	Registration Lead
Thomas Dawit .....	Website Lead
Matthew Hu .....	Sponsorship Lead
Harshi Kosaraju .....	MakeOHI/O Lead CO-Lead
Josh Wang .....	MakeOHI/O Co-Lead
Dominik Winecki .....	HackOHI/O Co-Lead

