

TIES Staff



Jan Morrison ***Founder and CEO of TIES***

Jan Morrison is the Founder and CEO of TIES – Teaching Institute for Excellence in STEM and has served as the Senior Consultant for College Ready STEM Education as well as Post-Secondary Success for the Bill and Melinda Gates Foundation, Battelle Memorial Institute, Carnegie Corporation of New York, Innovate to Educate, S.D. Bechtel, Jr. Foundation, Senior STEM Education Consultant for the Ohio STEM Learning Network and many other statewide STEM networks, and served as an advisor with the White House and Department of Education for the past four administrations.

Currently, Jan and TIES serve as the designer and lead for the National STEM Funders Network, a collaboration of more than twenty-eight STEM funders seeking to fund STEM for the USA with greater return on their investment and therefore for the nation's students. Jan and TIES are co-designers of the STEM Learning Ecosystem Initiative of the STEM Funders Network and run its National Community of Practice, 54 STEM Learning Ecosystems current with 100 within three years.. Jan consults with MIT Center of Bits and Atoms, The Woodrow Wilson Foundation, Chevron, Siemens America, NASA, Virginia Tech, North Carolina New Schools Project, many state governments seeking to create statewide STEM networks, STEM platform schools, programs and many more STEM institutions.

With an international vision for STEM education, Jan was adviser to the National Academy of Engineering as it developed the Engineering for K-12 Education report and reviewed the Achieve-authored Next Generation Science Standards. Jan and TIES organized the Race to the Top STEM Conference, which served to educate thirty states on the vital importance of STEM education and public-school transformation and is now assisting numerous states as they seek to implement their STEM vision through STEM network design and implementation.

"STEM has been my life's path and TIES the vehicle to dream, innovate, cultivate, execute and scale what is often challenging but needed for children to realize their STEM potential.

Jan's work also focuses on the Learn and Earn space, which offers all STEM students the opportunity to work in STEM fields while earning credits that have real labor market value as they matriculate at community colleges or universities. TIES was the technical assistance provider for the Healthcare Core Curriculum Consortia of community colleges funded by the USA Department of Labor. Jan and TIES served as the designer and lead for the National STEM Funders Network, a collaboration of more than twenty-eight STEM funders seeking to fund STEM for the USA with greater return on their investment and, therefore, for the nation's students. Currently TIES holds the Office of Naval Research Grant to design and implement a maritime Fab Lab for northeast Ohio's new Davis High School for Aerospace and Maritime. TIES under Jan's vision and guidance is the leading designer/installer/support for digital fabrication labs, Fab Labs, in schools throughout the world. Working with the Fab Foundation at MIT, TIES brings a level of skill to all students in schools with Fab Lab capability. With MIT and other partners, TIES and Jan designed Fab Labs for the military through a DARPA grant and agreement.

TIES works hardest and most with school districts and states throughout the country and internationally (Egypt, Bermuda, etc.) to design new STEM schools as platforms for change. MC2 STEM High School's nine years of great success was the result of the design work Jan did in partnership with the Cleveland Metro School District. Many more STEM schools thrive from the TIES STEM School design work including the newly created Egyptian STEM Model School, meant to lead Egypt into a strong and vibrant education reform, Decatur County School District, Oakland Unified School District, Baltimore City Public Schools, Tulsa Public Schools, Polk County Florida, etc. With Carnegie Corporation of New York as a funder and supporter, TIES codified design studio processes that are supporting schools and students throughout the world.

As a former science teacher for thirty-five years and middle and high school principal, Jan helps those she touches to understand the importance of a college/work ready education for all children. TIES' incredible group of world-class STEM education, systems engineers and education visionaries with Jan's leadership works to "Help all children make sense of the world and find themselves STEM literate, STEM capable and excited about make STEM their life's work."

Xan Black

Senior Consultant, SLECoP

Xan Black has a quote at the end of her emails from Winston Churchill. It reads, “Never, never, never give up.” While they were Churchill’s words, they are Xan’s life and work.

Xan, who retired in March as the executive director of the Tulsa Regional STEM Alliance, TRSA, has now joined TIES and the STEM Learning Ecosystems Community of Practice to coach leaders of the 94 Ecosystems and to share what she learned in her years of building a thriving STEM Ecosystem made up of more than 180 stakeholders.

“My greatest hope is to encourage ecosystem leaders and share the things I’ve learned so that they can go further and faster in serving students, teachers and families across the SLECoP,” Xan said.

Xan’s own STEM journey began as a Petroleum Engineer in Oklahoma. She then transitioned to education, working first as a substitute teacher and then volunteering in her children’s schools. She eventually went back to college, earning a Master’s Degree in Education with an emphasis on Middle and Secondary Education. She taught middle school and high school Math, Physics and Pre-Engineering.


She then moved to a position with Tulsa Community College as the lead for the Tulsa Alliance for Engineering which grew into the Tulsa Regional STEM Alliance. Throughout her career transitions, she said she has been fueled by a fundamental belief in the right of every child to have hope, quality education, goals and pathways to achieve them.

“I worry about children who do not have hope. I don’t want to miss a single child. I want to be a part of the huge movement that is working to create a world in which students are encouraged, to learn and grow. I want every student to have a desirable goal, see a clear pathway to that goal and a cadre of adults cheering like mad for them,” Xan said. “I will be the one with face paint on leading the cheer!”

Toby Bothel

Director of Engineering, Design and Fabrication

Toby graduated in 1979 with a Bachelor’s degree in Physics from Cornell University, and joined the staff of the Naval Surface Warfare Center in Carderock, Maryland, the U.S. Navy’s prime experimental facility for testing the hydrodynamic designs of ship and submarine models. She received her Master’s Degree in Ocean Engineering from the George Washington University in 1987. For the 34 years, she led model-scale and full-scale experiments aimed at measuring the flow around surface ships and submarines. From 2007-2014, Toby directed the National Defense Education Program’s K-12 STEM Outreach effort at Carderock, engaging fifty lab STEM professionals in bringing authentic engineering projects to local school districts.



Toby retired from the Naval Surface Warfare Center in 2014 and joined TIES where she leads a Digital Fabrication team of Fab Lab designers and installers, Fab content developers, and educator professional development trainers. Toby also leads TIES' work with the Defense STEM Education Consortium, including the deployment of a Mobile STEM-on-the-Go Digital Fabrication Van.

Toby and her husband Bob live near Tarcoles, Costa Rica. When she is not working, she loves ocean kayaking, birdwatching, exploring the biodiversity of Costa Rica, and spending time with her two grandchildren.

Alyssa Briggs

Senior Vice President of Innovation and Transformation

As the vice president for Innovation, Alyssa leads development of many of TIES' partnerships and new initiatives.

Alyssa moved to her role with TIES after serving as the director of the STEM Learning Ecosystems Community of Practice, helping to grow the initiative to its current level of 100 communities operating globally.

Alyssa's work with TIES brings together many of the skills she has honed in earlier phases of her career as a college professor and newspaper reporter and editor, winning some of the nation's top prizes for investigative reporting.

Alyssa co-founded a statewide collaborative public-private reporting initiative that served as a model for other statewide and national initiatives. Before taking over the directorship of the STEM Learning Ecosystems, Alyssa served as the founding director of the NeoSTEM Ecosystem in Ohio.


She holds a bachelor's degree from Northwestern University, a master's in English from Youngstown State University and a Ph.D. in interdisciplinary studies from Union Institute and University.

Andrea Lane Fields

Engineer/Digital Fabrication Consultant

Andrea started her Fab Lab career as a founding student at MC2 STEM High School in Cleveland, Ohio. This unique high school is located at GE Nela Park and the first to have a Fab Lab physically located in the school and incorporated in the curriculum. In this learning environment, Andrea gained real time hands on knowledge and experience in digital fabrication, and the day to day operations of a fabrication laboratory.

In 2010, Andrea would be one of a few student leaders to travel to regional STEM schools across the state of Ohio, introducing students and teachers to hands on digital fabrication learning opportunities.



In 2011, she traveled to Lima, Peru as one of the youngest students to attend MIT's International Fab Lab Network annual meeting and conference. Later, Andrea would manage both the MC2 STEM mobile fab lab and the new fab lab at the school's Cleveland State University campus while in obtaining her engineering degree. Andrea continues her engagement with MC2 STEM High School and the Cleveland School District as a trainer and technology consultant. Additionally, she works with a number of organizations including the Fab Foundation, TIES, General Electric, and the Great Lakes Science Center on a contractual basis teaching students, teachers and community members digital fabrication in Fab Labs and makerspaces across the country.

Andrea is a sought after speaker and spokesperson for minority women in STEM. Her speaking engagements have included a speech at the Ohio State Senate, interview for "Deeper Learning" book, TEDxCLE talk, GE, Chevron, U.S. News and World Report, and more. She is a BS/MS candidate at Cleveland State University in Civil Engineering and matriculating in the Fall of 2018.

William Fisher

Measurement Consultant

William P. Fisher, Jr., consults in measurement design and implementation across a wide range of fields. In addition to his role with the BEAR Center at UC Berkeley, he is a Senior Scientist with the Research Institute of Sweden, and works independently with Living Capital Metrics LLC. Fisher's current efforts focus on how to make sustainable development economically self-sustaining. Instruments measuring human, social, and natural capital in units traceable to metrological standards are key components in information infrastructures capable of both lowering market transaction costs and giving voice to individuals' creative improvisations. Logos and Eros are both manifestations of the human spirit; tuning the instruments of the human and social sciences to well-tempered scales will enable us to harmonize and choreograph relationships in infinitely diverse arrays of jazzy and bluesy rhythms and melodies.

Tim Francisco

STEM Consultant

Timothy Francisco, PH.D is a professor in the English department at Youngstown State University (YSU), where he is also director of The Center for Working-Class Studies. At YSU, he has worked on the university's community engagement and diversity equity and inclusion committees. He has helped develop and execute several grant-funded, multi-stakeholder community engagement projects, and has consulted on several grant-funded initiatives. He is currently Chairman of the Board of The Community Foundation of the Mahoning Valley, and serves on the advisory board of The Buckeye Flame, Ohio's statewide non-profit LGBTQ+ media source. He has written scholarly and journalistic articles on journalism education, working-class issues, and Humanities education. A former, newspaper and magazine journalist, he hosts a weekly public affairs program on WYSUFM, a podcast on working-class politics, and has moderated and facilitated community conversations for a number of civic organizations on topics from refugee resettlement, to gun violence, to food insecurity.



Mike Harris

STEM Consultant, Mobile Digital Fabrication Manager

Mike Harris is a mobile Fabrication and Machining Lab manager with Teaching Institute for Excellence in Stem (TIES). Mike is passionate about helping to open the eyes of students and teachers to possible STEM careers by providing hands-on STEM experiences using the engineering design process and digital fabrication technology in the mobile lab. He is a Marine Corps. veteran and holds a bachelor's degree from the University of North Carolina in Education. During Mike's time in the Marines, he served as a MV22 Tiltrotor Helicopter mechanic instructor. He managed and trained hundreds of Marines on safety, software, equipment operation, and maintenance to ensure aircrafts were safe for flight. Mike applies his military experience to his dedication to service at work and in the community. He's a big believer, that teamwork makes hard work easy work.

Lauren Hoefling

TIES Communications Consultant


Lauren is the newest addition to the 2022 TIES Communications team after spending two summers working with NeoSTEM, a member of the SLECoP, as a marketing intern. At NeoSTEM, her favorite initiatives involved constructing a STEMMap of local stem-related opportunities, working with the Cleveland Cavaliers on Score With STEM, and a poster series of local STEM rockstars called I AM STEM. She is a graduate of Providence College with an undergraduate degree in Marketing and a master's degree in Business Administration. At Providence College, she was a founding member and the social media chair of Mental Health PC, a club designed to break the stigma of mental health and help her fellow classmates gain access to on-campus aid.

Growing up in the rapidly growing digital age has given Lauren a passion for graphic design, social media, and its capability to unite people together through its use. As a lover of teams, Lauren is so excited to join the incredible group of individuals at TIES and pool their unique skills together for their common goals.

Sheri Homany

STEM Consultant

Sheri is the Associate Head of School at Hathaway Brown School, an independent girls school that is nationally recognized for its STEM curriculum and programs. Sheri has been working in STEM education since 1986 as a teacher, department chair and in school administration. She received the inaugural National Association of Biology Teachers' Award for promoting young women in science. In her current role as Associate Head of School she has lead initiatives in vertical alignment of the curriculum PreK-12, hiring, onboarding and mentoring new faculty, and designing professional development opportunities PreK-12. Sheri has worked for the College Board writing test content and training teachers to score Advanced Placement essays in Biology. She also spent more than eight years designing science curriculum and training teachers and school leadership in Egypt. Sheri has worked nationally evaluating science departments, designing STEM curriculum and training teachers in STEM activities.



Ebony Hood

STEM Consultant, NeoSTEM Ecosystem Director

Ebony Hood, director of the NeoSTEM Ecosystem joins the team with 20+years of experience in grassroots community organizing. In her role, she will be working to improve meaningful STEM learning opportunities for all students in the Northeast Ohio region while also focusing on underrepresented youth and families. She graduated from Baldwin Wallace University with a Bachelor of Science degree in Biology/Sustainability and serves on the Sustainability External Advisory Council. She also holds a Master's in Education for Science Curriculum and Instruction from Kent State University. As a student, she co-authored "Beyond an Acronym, STEM is..." Perceptions of STEM, recognizing the value of research findings to STEM professionals, educators, and policymakers. Ms. Hood is the co-founder of Syatt, a non-profit organization with more than a decade of programming and advocacy efforts that have been featured in USA Today addressing the nature gap of diversity in green spaces. You will likely find her enjoying the trails or cooking out with family in all seasons.

Angie Kastning


Manager of STEM Learning Systems

Angie Kastning joined the TIES team in July 2011 and presently supports the consultant team as the Project Coordinator.

She serves as Project Coordinator specifically for the STEM Funders Network and serves as the Assistant Deputy Director of the STEM Learning Ecosystems Initiative/National Community of Practice.

Prior to her position at TIES, she served as the Development Specialist at College Now Greater Cleveland helping to promote college access and success to underserved populations in the Cleveland region. As an integral member of the development team, she spearheaded the organization's \$2 million proposal program by identifying new funding sources and securing ongoing contributions, developing and fostering strategic partnerships and supporting collaborative fundraising efforts to ensure the organization was able to best meet the needs of its clients.

Angie's experience in the development field also includes serving as the Associate Director of Development at the YMCA of the Palms in Naples, Florida, where she managed all association events and annual fundraising campaigns. She began her career in financial development while working in the Miami University Development Office connecting with alumni and community business leaders. Angie holds a B.S. in Business Marketing from Miami University. She and her family reside in Mentor, Ohio.



Steve Krak

Senior STEM Consultant

Steve Krak is a “STEMist.” He has integrated traditional STEM silos over a 25-year history as an engineer in photonics and microfabrication, program manager, project manager, group manager, intellectual property manager, and business developer at Battelle, the world’s largest independent R&D company. While at Battelle, he helped to stand up the Ohio STEM Learning Network as a program manager for four years.

Steve brings this experience to TIES as a STEM Consultant who plays a leadership role in a successful USAID project to design and stand up the first STEM schools in Egypt and facilitating the work of STEM Learning Ecosystem communities building coherence in their education pathways.


His specialties are systems, design and capstone programs from design to implementation. In addition to the Ohio STEM Learning Network, Steve helped other states initiate STEM networks, managed winning Ohio’s Race to the Top proposal team, and was a member of the National Academies Committee on Integrated STEM Education, which published STEM Integration in K-12 Education.

Steve has three patents and co-authored eight technical publications. When he’s not supporting TIES, he works part time at Denison University as the coordinator of a new cross-curricular design lab for students, faculty and staff. I mentor students in the use of design thinking, engineering design processes and other tools from industry as they strengthen their problem-solving skills.

Christa Krohn

Director of Learning Systems

Christa Krohn has been an educator for 20+ years teaching 5th grade through college in Math and Physics. She has worked as a teacher, gifted teacher, adjunct college professor, Instructional Math Coach, and a Curriculum and Instruction Specialist PK-12. Additionally, she holds principal, curriculum instruction, and professional development licenses. Christa founded the NASA moonbuggy program at Lima Senior High School and has worked at MC2 STEM school where she wrote curriculum and helped develop a model for PBL and capstone project planning. Christa has worked with the Ohio Department of Education, Innovation Lab Network, Stanford University’s Center for Assessment, Learning, and Equity(SCALE), and Envision Learning Partners to integrate Performance Assessments and Competency-Based Education into Ohio’s practices and has presented twice with Ohio’s State Superintendent at the SXSW edu conference regarding this work and Ohio’s progress. She enjoys collaborating with educators, policy makers, and districts to reimagine current educational practices and systems including transformation around instructional coaching models, performance assessment, integrating STEM and PBL, and revamping PK-12 math curriculum and instructional practices. Christa was instrumental in securing a sizable grant to support innovation for the Orange City School district which included the creation of a digital fabrication lab. She was the recipient of the 2017 Ohio Council of Teachers of Mathematics (OCTM) middle school teacher award.



Christa has served as an elected member of the OCTM board and the President of Learning Forward Ohio. Currently, Christa serves as the Executive Director of Learning Forward Ohio. She and her husband are recent empty nesters residing in Shaker Heights, OH with their dog, Millie.

Heather Landskroner

Digital Fabrication Consultant

Heather Landskroner comes to TIES as a new addition in 2017 as Brady Middle Schools Fab Lab, Assistant Manager. She is a graduate of the University of Toledo and obtained her Masters degree in Student Affairs Higher Education Counseling at Wright State University. After college, Heather started a family, while at the same time taking on free-lance work as a design animator for American Greetings and as an independent web and graphic designer. She planted her roots in Moreland Hills, Ohio 20 years ago, with her husband, three daughters and son who all have been/are students in the Orange School systems.

As a vested resident and parent in the Orange community, Heather served 11 years as a board member of the Orange Community Athletic Association and as an active Orange PTA member. She has worked with teachers, students and parents in various environments, and wants the best possible positive and engaging opportunities for children, teachers and the community. Her experience working in the classrooms during her children's educational process has allowed her to appreciate the opportunity that STEM provides for children, including her own kids, who are inventors, math-elates, GEMS president and just fun loving curious kids!

Rita Mikita

STEM Consultant

Rita Mikita is a STEM educator specializing in Project Based Learning. Her innovative work as a teacher has been recognized by Lemelson-MIT, The Gund Foundation, The Cleveland Foundation, The Martha Holden Jennings Foundation, and the Cleveland Teacher's Union. Rita lives in Cleveland, Ohio and enjoys spending her time with her husband and two children.

Emily Neill

Virtual Executive Assistant

Emily joined TIES in March 2022, and supports the TIES team with administrative and scheduling requirements. Prior to joining TIES, Emily owned a Floral Design & Event business in Columbus, OH. Emily has an aptitude for organization, previously holding positions as a sales analyst for a manufacturer's rep, and a billing administrator for a Mayflower agent. In 2021 Emily and her husband relocated from Ohio to central Arkansas, where they bought a 24 acre farm. It's a work in progress, but they are working to add chickens and goats this year, along with expanding their garden plot to include lots of vegetables and cut flowers.



Sadie Norwick

STEM Consultant

With over 16 years in education, Sadie is a driven leader with a proven track-record of scaling and operationalizing national, innovative education solutions and partnerships. Sadie currently serves as a consultant with TIES. Prior to TIES, Sadie was the Senior Manager of STEM Solutions and Partnerships at the National Math and Science Initiative, where she led the strategic vision, development, and scaling of innovative, live and digital, national STEM education programs. Additionally, Sadie has a wealth of experience and knowledge in urban and non-formal education settings, having spent many years working in non-formal STEM education institutions, connecting their resources, programs, and people to underserved students in the Chicagoland area.

John Roszczyk

Communications Consultant

John is a communications consultant for TIES, and the communications director for the NeoSTEM Ecosystem in Northeast Ohio. John is passionate about expanding STEM education opportunities for students and families as a part of NeoSTEM's community-based initiatives. Through those programs, John has worked to connect high school students and small business owners to provide students with meaningful, real-world STEM experiences and improve the businesses' online operations during the COVID-19 pandemic, and has helped expand the visibility of STEM career pathways for Black and Brown students.

Prior to joining NeoSTEM, John spent 15 years as a civil litigation attorney, the past five of which as a founding partner of his own law firm, where he focused his practice on consumer, insurance, and business law. John tried cases in courts throughout Ohio, and has argued before Northeast Ohio's courts of appeals. John was raised in Warren, Ohio, and graduated from the E.W. Scripps School of Journalism at Ohio University and the University of Akron School of Law.

I Bet You Didn't Know:


"I love spending time with my family, reading, and exploring new parks and trails."

What I Love About My Job:

"Connecting with other people. Our work gives us opportunities every day to meet new people, hear their stories, and learn about their perspectives."

A Transforming Moment:

"Through the WIR'ED program, I've seen high school students take charge as leaders, and teach business owners how to improve their communications through digital media. Watching students embrace those roles, and feel empowered by them, has been inspirational."



Noa Russ

Director of International Engagement

Noa has been engaged in education for over 20 years, believing in constant learning, collaborations, engagement, and, more than all, in people.

For the past three years, Noa has been a member of TIES team of global consultants, managing the relationship and activities of TIES in Israel.

Prior to that, she led the STEM education in the Valley of Springs Regional Council in Israel, developing and mentoring the teaching staff, school principals, and education leaders. In addition, Noa led and developed a unique program for youth on the verge of dropping out, centered on active learning in an education-oriented makers-space, combining personal and group support for their emotional and mental needs. That program was granted the “Ashalim” prize for educational innovation. Noa also worked for a decade in the Branco-Weiss school network, first as a high school teacher and a member of the school’s leading team and then as the leader of the social field in the school network. In that role, she guided and mentored the social coordinators in the network’s schools and was a member of the network’s development team. Noa has a B.Ed. in democratic education with a teaching certificate and an M.A. in Educational Policies from Tel Aviv University.


Today, Noa lives with her spouse and three children in Chapel Hill, North Carolina, USA. She loves hiking and rowing to enjoy the beauty of nature.

Jeremy Shorr

Director of Digital Innovation and Early Learning

Jeremy Shorr is an education consultant and futurist who is passionate about innovating the instructional experience for learners of all ages. Jeremy supports clients through thought partnership to define and reach goals that move the organization forward. Before consulting, Jeremy had several leadership roles in two K12 districts in Ohio. As part of his consulting work, Jeremy currently serves as the Director of Digital Innovation and Early Learning for the Teaching Institute for Excellence in STEM (TIES).

Jeremy is the past chair of the Chief Technology Officer’s Network for ISTE (the International Society for Technology in Education), and of the Ideastream (PBS/NPR) advisory council. Jeremy also serves on the Board of Directors for the EDWINS Leadership and Restaurant Institute, a program focused on providing formerly-incarcerated adults an education in the hospitality industry while providing the support network necessary for successful reentry. Jeremy serves on the Education Advisory Committee of the City Club of Cleveland, the board of directors for Project Explorer, and on several advisory boards for the Council of School Networking (CoSN).



Jeremy has keynoted, presented, and consulted at conferences, workshops and school districts across the United States and abroad and works with districts and organizations around the world who are looking to implement new instructional strategies through workshops, thought partnership, and ongoing support.

Jeremy has been recognized as one of the National School Boards Association's "20 to Watch", as the Ohio Technology-Using Administrator of the Year, the Ohio Educational Leader Innovator, one of the Center for Digital Education's "Top 30 Technologists, Transformers and Trailblazers", as one of the Crain's Cleveland Business "Forty under 40", and received Ideastream PBS/NPR's Betty Cope award and ISTE's Making It Happen award. Jeremy's programs have received awards such as the Ohio Trendsetter Award and the Best Blended Learning Implementation in Ohio from the Ohio Department of Education, and admission into the Digital Promise League of Innovative Schools. Jeremy is a Certified Educational Technology Leader (CETL), a Google Certified Educator, an Apple Distinguished Educator (ADE), a Raspberry Pi Certified Educator, and received his MBA in Executive Leadership from Cleveland State University. Jeremy was an Educational Policy Fellow with the Institute for Educational Leadership in 2015-2016.


Jeremy, his wife Kimberly, and his daughters Lila, Lucy and Luna live in Twinsburg, Ohio.

Barb Skarzynski ***STEM Consultant***

As Program Coordinator for Digital Fabrication Labs, TIES, Barb provided vital support to the TIES Digital Fabrication team including contributions to the professional development framework workshops, organizing Fab Lab Learning Tours, supporting Design Studios, installing labs and supporting Fab related event planning

Prior to 2011, Barb served as TIES Director of Technology and Project Support with contributions to Race to the Top, Learn and Earn, multiple state STEM networks and individual STEM school design. Her work focused on building networks through the capture and sharing of data used to replicate and scale program successes with new states and programs as they were added to the TIES portfolio.

As Project Manager for Learn and Earn, she worked to connect community colleges with one another and businesses to develop an infrastructure that will facilitate accelerated, competency-based, pathways for students to earn a degree while earning a livable wage. In 2010, TIES, under Barb's leadership, convened a team of national experts to create a vision for Learn and Earn in states with existing STEM networks. The resulting Learn and Earn Design Challenge was launched at STEMtech 2010. States created Learn and Earn blueprints that support PK-20 students throughout their education and career progression. Barb facilitated the ongoing work of this ambitious goal.



When not working for TIES, Barb splits her time between her home in Baltimore, Maryland and her home in Ocean City, Maryland. She fills her days spending time with her six grandchildren, taking classes at the local DIY facilities and travelling. Barb received a Bachelor's Degree in Elementary Education from the University of Maryland and taught public school fifth grade in Baltimore County, Maryland.

Julie Stolzer


Senior STEM Consultant/ Director of Strategic Initiatives

Julie has been working with TIES since 2007 and provides support on a variety of projects and programs including advising corporate and private philanthropies on STEM investing strategies, Corporate Social Responsibility, and coaching communities to catalyze robust collaborations around STEM education and connection to workforce and economic development. Julie was the founding Director of the STEM Learning Ecosystems (SLE) Initiative designed by TIES launched in 2015 and since 2020 has been working with the Department of Defense STEM office (DoDSTEM) to bring the STEM Ecosystem approach to DoD mission critical Hubs as a part of the Defense STEM Education Consortia. She frequently serves as a sort of translator between the corporate, academic, and philanthropic organizations and other partners where jargon and unrealized biases can impede truly impactful collaborative progress. "I am most excited about this work when I see how what we do impacts students and when I see communities recognize the value the of the student voice."

Sarah Wallace

STEM Consultant, Fab Lab Design and Execution

Sarah is currently running the Fab Lab Programs for Cleveland Metropolitan School District, including the CLE Mobile Fab Lab, STEAM Teacher Fellowship Program and The Cleveland Cavaliers and Goodyear Digital Fabrication + STEM Lab, a professional development space for educators.. After studying at Kenyon College and New York University she taught Math and managed the Senior Project Program at the NYC iSchool as a Math for America Teaching Fellow and Master Teacher. In NYC Sarah was a leader in the Mastery Education movement in the city and worked with MfA, The Digital Teaching Core, The Mastery Collaborative and the STEM Teachers NYC to provide PD for educators. After completing the NYU ITP Summer Educator program, her focus shifted to Maker Education and she began teaching Maker Ed classes including Bridge Building, Paper Engineering, Pop-up Book Design, and Mathematical Art. After returning to her hometown of Cleveland, Ohio to work in Fab Labs she grew the MFL program into a STEAM fellowship program and has worked with sponsors to build a Professional Development lab and is in the process of designing seven STEM labs for CMSD schools and training over 100 teachers on 3D modeling and printing. She also is an education consultant working with The Fab Foundation, The Teaching Institute for Excellence in STEM (TIES), and other organizations, providing educators with professional development around Mobile Fab Labs in formal education, how to create Fab projects focused on SEL or standards based learning and how to integrate 3D printing into K-12 classes. She has presented on these topics and at Fabrication and Education conferences around the world including Ohio, New York City, France, China and Egypt.



Kelly Zona

Digital Fabrication and Engineer Design Consultant

Kelly works with Fab Labs and Makerspaces across the world to help them with every phase of development including community stakeholder identification, equipment selection, space planning, installation, and program and curriculum development. She specializes in teaching design and engineering, digital fabrication, and electronics and programming. She particularly enjoys creating professional development sessions for participants to build interactive projects utilizing multiple digital fabrication tools and microcontrollers. Previously she has worked in various roles centered around creative technology for organizations including Northeastern University, US Special Operations Command, the Fab Foundation, the Defense Advanced Research Projects Agency, Fab Academy, Johns Hopkins University, Fab Lab Baltimore, and Fab Lab DC. She holds a Master of Architecture from Cornell University, a Bachelor of Science with a concentration in architecture from SUNY Buffalo, and a Diploma in Digital Fabrication from Fab Academy.