ANNUAL REPORT

2023–2024

Millersville University
COLLEGE OF SCIENCE
AND TECHNOLOGY

millersville.edu/scienceandmath

YEAR IN REVIEW

From Dean Harris

Colleagues and Friends,

It has been another year of outstanding academic programming, student recruitment and engagement, partnership cultivation, and creating many new lanes of professional and academic opportunities for the students and faculty in the College of Science and Technology. The following pages in this annual report spotlight many of the signature lectures and events, community collaborations and outreach activities, and the many truly amazing accomplishments from the members of our learning community.

The College of Science and Technology continues to be a great community partner and leader in supporting science, technology and math education in our region. We served as the host site for the North Museum of Nature and Science's annual North Museum Science and Engineering Fair, and we welcomed over 200 competitors from 35 regional schools for the 49th Annual Millersville University High School Math Contest. This competition provides a great opportunity for high school students to test their mathematical knowledge, skills and creativity with the hope that students will be encouraged to study more mathematics and participate in future competitions, such as the American Mathematics Competitions and the William Lowell Putnam Mathematical Competition.

The College of Science and Technology continues to provide best-in-class opportunities for students to "professionalize" their academic experiences throughout their academic programs. This report showcases the work of our faculty and students engaged in collaborative projects leading to numerous conference papers, journal and monograph publications, and extramural funding to support further work. It has been my mission as dean to provide as many lanes of opportunity as possible for our students in the College of Science and Technology to participate in a high-impact learning experience, which is the accelerant and objective proof points that our graduates use to launch into their next successful steps. I hear on a regular basis how students have leveraged their world-class education, their internship experience, their faculty student research project, their independent study project, or their service-learning project and beyond to sensational new opportunities. The College is highly invested in cultivating our current industry partnerships in the Lancaster County region and beyond and in forging new industry and business partnerships, including many new international educational partnerships, which serve to elevate the opportunities for students and raise the visibility of the outstanding education that students are receiving at Millersville University.

Finally, I am so thrilled to be able to share with our learning community that Millersville University has been approved by PASSHE and the Pennsylvania General Assembly to receive funding towards the construction and renovation of a new science complex to replace the Roddy and Caputo science buildings. The University learned about this capital project last year, when it was approved to go through a new building feasibility study process, which it started immediately last summer, and the work was completed throughout the academic year. The design, planning and fundraising efforts that will be needed to build a new science complex will be a major undertaking for Millersville leadership, the academic departments, and for the many internal and external stakeholders that are positively impacted by the science and technology graduates that we produce for the region. Millersville offers a transformational educational experience for students, and now we will be able to greatly enhance their learning experience by building a transformational classroom, laboratory and research facility to help them achieve even greater outcomes.

There is so much to celebrate and reflect on from the past year, and I want to thank everyone who is directly involved in supporting students' success. This includes the numerous scholarships and donations the University and College receive, the many hours of service and mentorship time offered, the many professional opportunities created and the entire learning community's commitment to paying it forward to support the current and future generations of College of Science and Technology graduates. Please enjoy reading about the many student, faculty and programmatic accomplishments spotlighted in this year's report.

Sincerely,

Marc Harris
Dean, College of Science and Technology
Millersville University

MAJOR COLLEGE SPONSORSHIPS

As a public-serving institution, the College of Science and Technology has hosted several signature events throughout the year which engage the local, regional and state communities; K-12 school systems; industry and governmental partners; and friends and stakeholders of the Institution.

The following is a list of significant touch points for the College of Science and Technology and the MU learning community and its surrounding stakeholders:

Dr. Sophia Lunt and Dr. Marc Harris with student competitors.

The 37th Annual Brossman Foundation and Ronald E. Frisbie Sr. Science Lectureship was held in October. Dr. Sophia Lunt, professor at Michigan State University, Princeton (Ph.D.), MIT (postdoctoral fellowship), spent the day on campus meeting with students in Biochemistry, Biology, Chemistry and Biostatistics, giving two keynote addresses and visiting with high school teams competing in a comprehensive science exam. The exam was taken by 11 regional high schools spread over eight counties. All levels of participants received so much from Dr. Lunt's many stories, personal advice and truly inspiring research accomplishments, which are transforming how we detect, target and treat many forms of cancer.

The afternoon keynote, "My Life as a Scientific Researcher," was targeted at middle-schoolers and was attended by approximately 300 area students. The evening culminated with a public lecture in the Winter Center, where she outlined several areas of investigation, including cutting-edge cancer detection and innovative, individualized therapeutic treatments.

Approximately 250 community members attended the evening keynote, "Deciphering Metabolic Reprogramming in Cancer." Dr. Lunt is a top cancer researcher in the field, discovering breakthroughs in personalized therapies, metastasis prevention and cutting-edge imaging technologies.

Dan Albert (Chemistry) and Laura Ramos-Sepulveda (Biology) led Millersville University's participation in the **Pennsylvania Science Olympiad competition**, which took place in March. The College of Science and Technology has been hosting this event for the past 16 years. Over 500 students from 30 regional schools participated in the 23-station daylong event.

Science Olympiad is an international nonprofit organization devoted to improving the quality of science education, increasing student interest in science and providing recognition for outstanding achievement in science education. Science Olympiad tournaments are rigorous academic interscholastic competitions that consist of a series of individual and team events, which students prepare for during the year.

Dr. Marc Harris, Dr. Nazli Hardy, Holly Walter Kerby, Marianne Frantz and Rhiannon Cahoe

The 36th annual Glenna Hazeltine Women in Mathematics, Science & Technology Conference was held Tuesday, April 2, in the Student Memorial Center. More than 250 middle and high school students and their advisors from 50 schools in six surrounding counties enjoyed presentations by 20 female Role Models who shared their experiences as women in the sciences. This year's Role Models included six MU alumni! The event featured keynote speaker Professor Holly Walter Kerby, who is a professor of chemistry and creative arts. Professor Kerby presented an engaging and innovative address to a packed audience entitled, "Using Secrets of Story to Create Demonstration Shows That Teach Chemical Concepts."

NEW SCIENCE BUILDING

The University contracted with Spillman Farmer Architects and with Page Scientific to oversee the science building feasibility study. During this process, many factors were considered, including best campus location for a new building, the detailed space requirements for all departments in the college – including faculty and departments that currently reside outside of the Roddy and Caputo footprint – areas of program expansion and future growth, industry incubator and collaboration space, and the key factors involved in building a new facility vs. renovating existing spaces.

Like most projects of this scale and scope, budget is also going to be a significant factor in accomplishing our goals in constructing the transformational space that the College of Science and Technology needs to remain a top producer of science, technology and mathematics graduates for our region.

A few of the key takeaways from the study are: 1) we can maximize our budget by utilizing a combination of new construction and renovation, 2) the most appropriate structure to renovate is Caputo Hall, since it was built 30 years after Roddy Hall and 3) Roddy Hall will likely need to be demolished, since the cost to renovate would be equivalent to building new, and this will free up additional space that can used for greenhouses and other facilities that support our plant sciences, ecology and environmental sciences, and our earth sciences programs. These three takeaways from the feasibility study have evolved into the three proposed phases of the new science building project.

Phase I – Construction of a new ~40,000-square-foot building that would house multiple departments and state-of-the-art teaching and laboratory spaces with the overarching theme of putting "science on display." This new structure would sit just to the south of Caputo and would be connected through a third-story skybridge.

Phase II – Renovate the 88,000-square-foot Caputo Hall. The entire building will get upgraded mechanicals, electrical, and plumbing, and the shading in the floorplan renderings indicate different levels of renovation from a complete redesign of interior walls and spaces to updating ceilings, floors, and lighting. The theme of placing "science on display" will carry over to this phase of the project as well.

Phase III – Demolition of Roddy and repurpose of green space for greenhouses, storage, and outdoor learning and recreational space.

As dean of the College of Science and Technology, I am so excited to enter these next phases of new building design and planning with my faculty colleagues, with current and future students, with MU leadership and with the alumni, staff and board members who agreed to serve on the Building Campaign Steering Committee.

The Educational Philosophy of SCTE appears on the back cover of this report – there you will read about our central theme of preparing students (graduates) to meet the needs of a 21st-century workforce through innovation. I cannot think of a better project of innovation than building a world-class teaching and research complex to facilitate the next 30+ years of immersive and experiential learning. For more information about this project and how you can get involved, please turn to the last page (inside cover) of this report. We are going to need the entire MU Science and Technology community to be invested in this project for Millersville to stay competitive in science, math and technology education, and to provide the transformational learning experiences and graduate outcomes that we espouse in our mission and educational promise.


LAB
LAB
BIOLOGY OFFICE
BIOLOGY RESEARCH LAB
BIOLOGY RESEARCH LAB
BIOLOGY OFFICE
BIOLOGY OFFICE
BIOLOGY RESEARCH LAB
CADAVER
BRIDGE CONNECTION ABOVE
STAIRS
WORKING STOR.
MECHANICAL
STOR.
STOR.
STOR.
ELEC/MECH
LAB
PREP
MICROSCOPE LAB
LAB
RESEARCH
RESEARCH
DEAN SUITE
FLEX INSTRUCTION
FLEX INSTRUCTION
OPEN COLLABORATION
RAMPING SIDEWALK

EXTERNAL PARTNERSHIPS

Precision Cobotics – Robotic WorX Solutions Lab
A $75,000 grant provided by the Lancaster STEM Alliance will provide high school and college students interested in robotics an opportunity to gain real-world experience. The grant provides support for the Workforce Development & Career Exploration in Robotics Engineering (Robotic WorX) program, a partnership between Precision Cobotics and Applied Engineering, Safety & Technology. The program provides internships to students in local high schools and at Millersville. Students gain hands-on experience solving real manufacturing problems with the application of robotic and automated technologies.

The program partnered with six school districts, three community groups, two granting agencies and at least seven businesses to provide tours, job shadows and internships to elementary through high school students as well as solve real-world automation problems (lab connected with nearly 600 individuals!).

UPMC Lititz Medical Center
Millersville University offers two degree programs for aspiring respiratory therapists: the respiratory therapy option within the biology major consists of three years of study at MU followed by 19 months of clinical training at UPMC Lititz Medical Center. At the completion of the training, students are awarded a Bachelor of Science (B.S.) in biology with an option in respiratory therapy. The respiratory therapy option within the Allied Health Technology major consists of two years of undergraduate liberal arts and science coursework at Millersville followed by a 19-month professional education and training phase at UPMC Lititz Medical Center. At the completion of the training, students are awarded a Bachelor of Science (B.S.) in Allied Health Technology with an option in respiratory therapy.

Harrisburg Area Community College (HACC) and Millersville RN to BSN Concurrent Enrollment Program (CEP)
The Millersville/HACC BSN concurrent enrollment program is designed to allow HACC ASN students to take Millersville BSN courses online while completing the program at HACC to get a head start on their BSN program.

Any HACC student who is accepted into the HACC Associate in Nursing program is eligible to apply for the Millersville RN to BSN concurrent enrollment program (CEP).

Woodstream Corporation
Department chairs Jessica Kelly (Geography), Jack Ogutu (Applied Engineering, Safety & Technology) and Lynn Marquez (Earth Sciences) joined Dr. Marc Harris in a site visit to Woodstream Corporation, a local manufacturing company. The team presented to Woodstream leadership regarding student preparation and talent needs in engineering, environmental science, data management and environmental compliance. Woodstream corporation has committed to a new internship program with Millersville which will include 3–5 interns per year from multiple disciplines.

Roddy Research Pond and Ecological Teaching Preserve
Last year, the College of Science and Technology partnered with the Alliance for the Chesapeake Bay (ACB) to replant and restore a native tree barrier to beautify and protect the research site ecosystem. Docks were installed as well as a teaching pavilion and an ADA-accessible sidewalk.

This year, the use of the pond is in full swing. In an article written by Janet Kacskos, Dr. John Wallace, professor of biology, says the improvements at Roddy Pond brought multiple benefits. "From an educational perspective, the restoration has improved the pond in terms of classroom and independent research use. Biology, earth science, chemistry and geography classes use the pond for various water, organismal and biomonitoring activities."

The overall project had several sources of funding. A donor funded the pond restoration and improvements around the pond. MU WETI established a collaboration with the Lancaster office of the Alliance for the Chesapeake Bay to provide the 177 trees, representing 31 different species. Funding was also provided by a Lancaster Clean Water Grant to cover the cost for approximately 10 different species of wetland herbaceous plants.

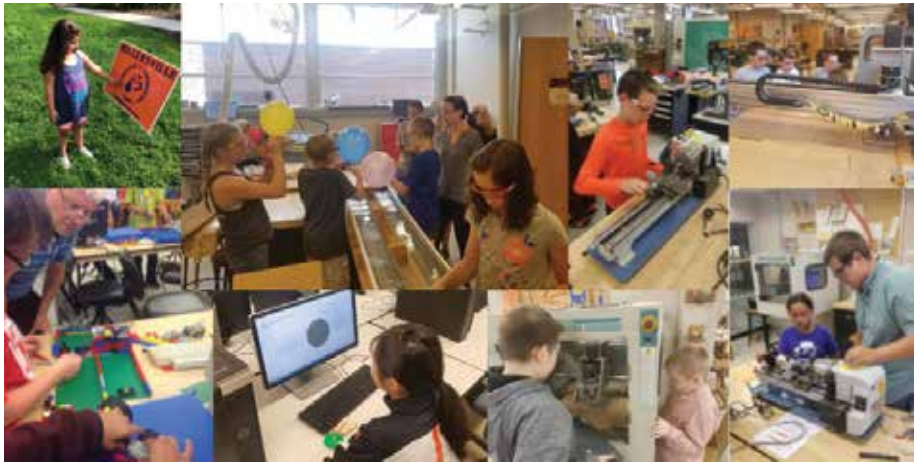
COMMUNITY ENGAGEMENT AND OUTREACH

Millersville University and the College of Science and Technology were the host site for the annual **North Museum Science and Engineering Fair**, held by the North Museum of Nature and Science. Over 200 students participated in hands-on demonstrations run by MU faculty/student presenters. Participating students toured Osburn Hall, Caputo/Roddy Hall and Brossman Hall.

The **49th Annual Millersville University High School Math Contest** provided a great opportunity for high school students to test their mathematical knowledge, skills and creativity with the hope that students will be encouraged to study more mathematics and participate in future competitions such as the American Mathematics Competitions and the William Lowell Putnam Mathematical Competition. This year's event was one of the biggest, with over 200 competitors from 35 regional schools.

Discovering Path (STEAM) Day, hosted by the Lancaster Chamber of Commerce, included eight SCTE departments presenting hands-on sessions as part of an educational and career pathways exploration event held at Spooky Nook Conference Center. The event was attended by 152 students from 15 high schools throughout Lancaster County, along with their industry mentors. Millersville was one of only four higher-ed institutions asked to participate and was the most represented in offering sessions.

The **Annual Summer Science Training Program (SSTP**) included two distinct five-day sessions the weeks of June 24–28, 2024 (Session 1), and July 8–12, 2024 (Session 2). Each session consisted of 10 stimulating topics under the STEM umbrella. SSTP provides students with learning opportunities typically not available at the precollege level through a wide range of academic disciplines and a focus on intensive student-teacher interaction, advanced-level learning, research and problem-solving experiences. Approximately 20 students participated in each one-week training session.



The **Applied Engineering & Safety Technology Department Tech Camps**, sponsored by LancasterMakes and MANTEC, hosted approximately 180 registrants over 19 camps and one institute for high school–aged students. Programs highlighted include Build Your Own Robot, Machining for Kids, Intro to Solidworks and 3D Printing, Engineering Camp, and Advanced Lego Robotics, to name a few.

Preparedness Day, sponsored by CDRE in recognition of September as National Preparedness Month, had over 20 external vendors, including PEMA, LEMA, NWS, Red Cross and the PA Turnpike, among others, who presented and talked with students about their work and community engagement related to preparedness efforts in Pennsylvania.

On Wednesday, September 27, 2023, Millersville University hosted a "**Fall (Into) Wellness Fair"** to promote health and wellness across the campus community. The fair was attended by over 600 employees and students, who had opportunities to visit over 60 vendor tables, each representing one of the nine dimensions of wellness. The Wehrheim School of Nursing (WSON) participated in the fair, where faculty member Dr. Susan Moyer, along with five WSON students, assisted in blood pressure screenings and provided heart health education and games. The students who assisted were Natalie Travitz (RN-BSN student), Valerie Jones (RN-BSN student), Krystle Hosler (MSN student and WSON graduate assistant), Jessica Borthwick (DNP student and WSON graduate assistant) and Rachel Mowry (DNP student and WSON graduate assistant).

Faculty, Student, Staff and Alumni Service to Profession

Sepi Yalda, Director of the Center for Disaster Research and Education (Earth Sciences), was invited to serve as a National Science Foundation AR VR Integration Technology panelist. She was also recently one of the keynote speakers at a news conference highlighting climate-smart farming practices. Yalda was on the docket with PA State Rep. Ismail "Izzy" Smith-Wade-El, Lancaster County Commissioner John Trescot, Lancaster City Council members Jaime Arroyo and Ahmed Ahmed, and Eric Sauder, Founder & Executive Director of RegenAll. The group discussed how Lancaster County agricultural producers and rural communities are beginning to harness resources vital for climate solutions, all while fortifying their economic foundation.

Richard Clark, Professor of Meteorology Emeritus (Earth Sciences); elected vice-chair of the Federation Assembly of the American Institute of Physics (AIP). The Federation Assembly is the governing body of the AIP.

Sharon A. Brusic (Applied Engineering, Safety & Technology) and **Jocelyn Long** (alumni) were reviewers for the Pennsylvania Department of Education (PDE) and Data Recognition Corporation (DRC) during the summer of 2023. They were tasked with writing and reviewing Performance Level Descriptors (PLDs) that describe the specific knowledge and skills students typically demonstrate at each performance level for the newly released PA Standards for Science, Technology & Engineering, and Environmental Literacy & Sustainability (STEELS). Sharon will work with a team to develop the fifth-grade PLDs, which will eventually lead to testing of all fifth-graders on the PSSA (Pennsylvania System of School Assessment) test.

Kevin Robinson (Mathematics); Table Leader – AP Statistics Reading (ETS) – June 2023

Angela Cuthbert (Geography); became a member of the Millersville Borough Planning Commission.

Aaron Haines (Biology) and Millersville students **Darian Hauf**, **Andrew Strange and Jennifer Juarez** were featured on lancasteronline.com and on WGAL for their studystudy "'Green' roofs bring more bats into city, and that's a good thing," which talked about their research project to improve bat populations in Lancaster city.

Richard D. Clark, Professor of Meteorology Emeritus (Earth Sciences), presented "Causes, Impacts, and Vulnerabilities to Weather, Water, and Climate Extremes" as part of the spring 2023 Quest for Learning program offered by Trinity Lutheran Church in Lancaster, Pa. The Quest Program was a set of six presentations starting on March 23 and ending on May 4, 2023. Presentation topics included "How Did We Get Here? From Hurricanes to Haboobs," "Extreme Weather: Coping with Extremes and Possible Long-Term Solutions."

Lyman Rickard (Chemistry) led a group of students in performing chemistry demonstrations at the Lancaster Science Factory on Saturday, November 11, 2023. Students included Gleidy German Rodriguez, Ariana Marshall and Munachukwuso (Muna) Charles-Monwuba.

STUDENT OUTCOMES

Dr. Edward C. Shane, Somer Barrett, Dr. Ajoy Kumar and Dr. Marc Harris

Dr. Edward C. Shane, Timothy Lerch, Dr. Ed Rajaseelan and Dr. Marc Harris

More than 250 students have participated in faculty-mentored experiences, industry internships, independent projects and service projects from the summer 2023 through spring 2024 terms. For summer 2024, we anticipate an additional 70 students will participate in high-impact cocurricular experiences in research, internships, fieldwork courses and professional preparation.

Twelve undergraduate students were accepted into nationally competitive National Science Foundation Summer Research Experiences for Undergraduates (REU) programs.

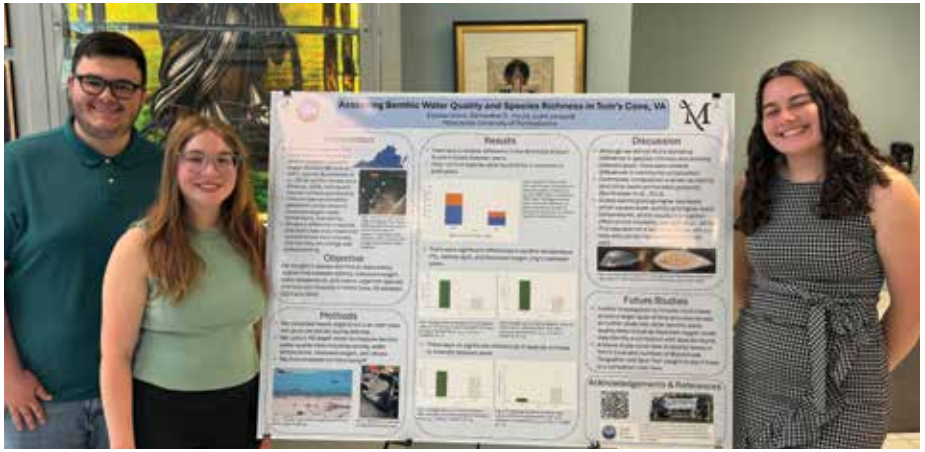
Thirty-five SCTE students completed internship experiences for credit.

The annual **Dr. Edward C. Shane Undergraduate Student Research Recognition Ceremony,** held on Tuesday, April 23, 2024, recognized 160 students. This year marks the 21st year that we have been recognizing students for their research. More than 2,000 students throughout the School of Science and Math/SCTE have been acknowledged for participation in various types of research since 2007.

The **Biology Mentorship Program** (or BMP for short) is an initiative aimed at promoting and celebrating the academic success and retention of underrepresented minority students in the biology major. The BMP provides academic and social support via peer mentoring and faculty guidance to enhance performance in the classroom, foster the establishment of a strong sense of community among biology students of color, encourage greater engagement in departmental and University activities and inspire the development of scientific identities. The peer mentors are themselves underrepresented students with demonstrated success in the biology major. We currently provide BMP Open Study sessions and BMP Coffee Breaks each week. Open Study sessions are aimed at helping students with their coursework, exam preparation and study habits; each session is staffed with a peer mentor who is qualified to tutor for one or more biology core courses. Coffee Breaks are designed for social mentoring and building connections among students. In addition, we hold Program Meetings twice monthly where participants, mentors and invited guests share a meal and engage in discussions and activities aimed at building camaraderie and developing skills necessary for success in the biology major and beyond. We also offer one-on-one mentoring for biology students. Finally, we provide support and guidance for the peer mentors to invest in their continued success in biology and beyond. The BMP has established a campuswide network of support by forming links with the chemistry and math departments, as well as the Offices of Student Success, Financial Aid, Learning Services, Academic Advisement, Athletics, and Enrollment Management. We have also joined forces with other ongoing campus initiatives invested in underrepresented student success. These growing connections are increasing the BMP's ability to meet the diverse needs and interests of our biology students of color.

The BMP was launched in the fall of 2017 by Brent Horton with the support of students and several members of the faculty, staff and administration. The BMP became nationally recognized in the summer of 2018 with an Inspiring Programs in STEM Award by INSIGHT Into Diversity magazine. Over the years, the BMP has become a model for the Biology Academic Support program and other campus initiatives aimed at promoting the academic success and retention of Millersville University students.

Ryan Jetter, Avery Neff and Melanie Jones



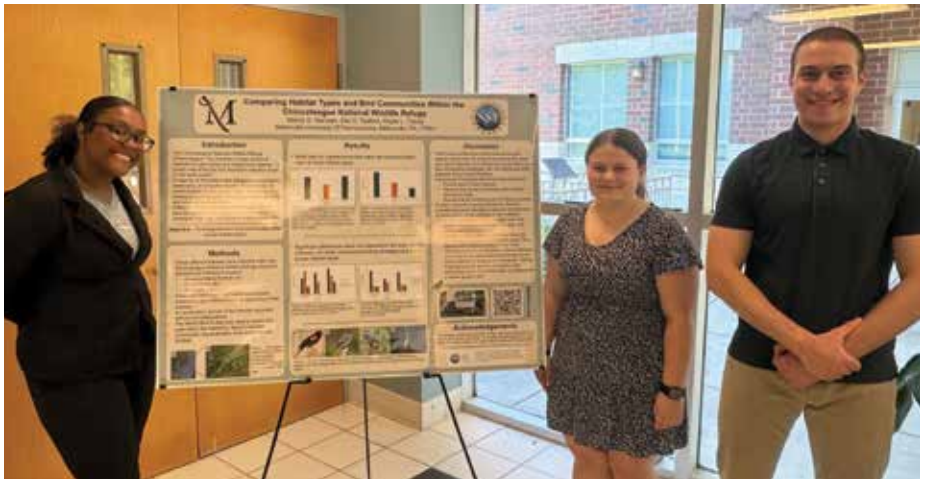
Luke Leopold, Elyssia Good and Samantha Houtz

S-STEM Scholars Program; CO-PIs – Janet White and Carolyn Weaver

In fall 2021, the National Science Foundation Scholarships in STEM program (NSF S-STEM) awarded a team of Millersville University faculty a $1.5 million grant to fund scholarships for students in the Millersville University College of Science and Technology.

The program, named "Supporting Student Success (S^3)," features support of unmet need up to $10,000 per academic year (renewable for four years) for each scholar, as well as support services for each scholar to prepare them for the STEM workforce. Among these support services are peer mentoring, a paid workforce development program and community-outreach activities.

As part of the program, scholars, along with coprincipal investigators Judy Cebra-Thomas and Carolyn Weaver, participated in a two week immersion research experience at Chincoteague Bay Field Station. The program culminated in a poster presentation of their research on May 13, 2024.



Gleidy German, Kayla Tracey and Zacaria Tawfick

The **American Society of Safety Professionals (ASSP)** selected Millersville University for its Outstanding Student Section Award (OSSA). The OSSA recognizes and encourages the activities of established ASSP student sections at colleges and universities, honoring those sections that make the most significant contributions toward advancing safety education and research. Millersville's student section was strong in all three critical areas, which include professional development, research, and campus and community involvement. The OSSA committee was extremely impressed with the amount of student participation at meetings and events.

STUDENT ORGANIZATION SPOTLIGHT

Project TILTTING (**T**hermodynamic **I**nvestigation of **L**CL **T**hresholds during **T**ornado-genesis and its **I**nfluence in the **N**ortheast and **G**reat Plains) is a student-led research project aiming to improve upon severe weather warning lead times, ultimately to save lives. The project is run completely on crowdfunding, and thanks to the generous donations, seven students along with Greg Blumberg, Ph.D., had the opportunity to travel to the southern Great Plains in May 2024 to conduct fieldwork by launching radiosondes into supercells capable of producing tornadoes. The data will help students determine if there is something more in the atmosphere that can be helpful to improve warning lead times.

STUDENT GRANTS AND OTHER ACHIEVEMENTS

Millersville biology students were awarded multiple grants to travel and present their research at the joint meeting of the Pennsylvania Chapter of the Wildlife Society and the Pennsylvania Biological Survey.

Maja Klosinska's research student, **Frank Schaeffer,** was awarded the Keever Grant for their project, "Determining How the Root Microbiome of Arabidopsis Lyrata Varies Between Serpentine Barrens and Non-Serpentine Soils."

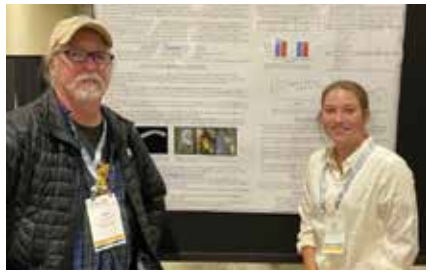
Chad Hogg, with students **Marshall Feng, Mitchell Harrison, Evan Magill, Tristan Rush, Tawfick** and **John Hershey**, participated in International Collegiate Programming Contest, with the team of Tristan, Zac and John placing 3rd in Division 2 at our site, Wilkes University; the global competition was overseen by the Association for Computing Machinery.

Environmental and Spatial Sciences major **Annisa Saengdara** '25 was one of 10 students awarded the NSF Research for Undergraduates Award in Interdisciplinary Problem Solving.

Ben Troyano

Millersville University Graphics and Packaging Technology students recently won awards in two different competitions. **Sydney Hargrove** '24, **Reagan Steinberg** '25, **Kaylena Travitz** '24 and **Ben Troyano** '25 won awards in two different competitions. Hargrove and Steinberg were awarded for their submissions in the Neographics competition, sponsored by the Print & Graphic Communications Association. Travitz and Troyano's "Ville Hardware" design was selected by the Association of Independent Corrugated Converters' Student Packaging Design Competition committee as the second-place winner in the structure category.

Abigail Horst, BIOL '24, won 1st place for undergraduate student posters in the Medical, Urban and Veterinary Entomology section of the Entomological Society of America (ESA) Conference held in National Harbor, DC. Abigail's paper was titled Role of Non-Biting Midges (Diptera: Chironomidae) in Carrion Decomposition: Forensic Applications. Abigail is mentored by Dr. John Wallace, emeriti professor of biology. Many conference attendees thought Abigail's work was from a master's or Ph.D. thesis.



John Wallace and Abigail Horst at ESA Conference

STUDENT GRANTS AND OTHER ACHIEVEMENTS *continued*

Five seniors completed chemistry department honors; two also Honors College (UHC): **Madison Cherubin** (Dr. Rickard), **Rebecca Drager** (Dr. Schiza; UHC), **Betel Erkalo** (Dr. Mullen-Davis), **Elliott Newman** (Dr. Rajaseelan), **Joshua Rushlow** (Dr. Rajaseelan; UHC).

Olivia Rozenberg and **Naomi DeLuca** achieved first place in their undergraduate poster presentation on Construction Exoskeletons at the American Society of Safety Professionals (ASSP) Region VI in Myrtle Beach, S.C.

PACISE 2023

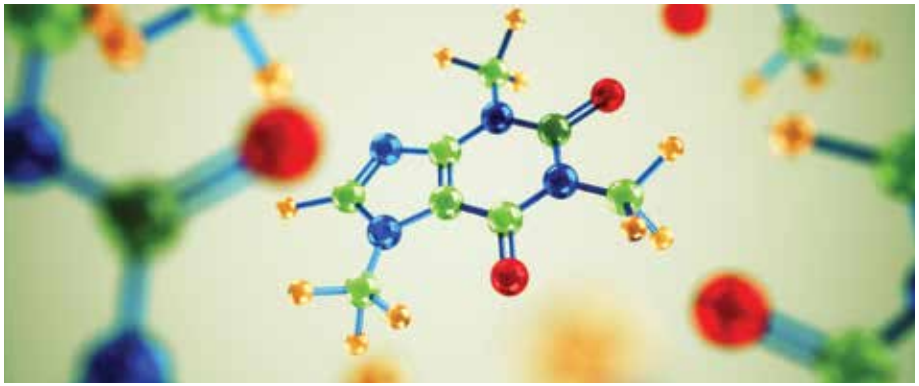
Marshall Feng, John Hershey, Evan Magill, Lincoln Craddock, Tristan Rush and Zacaria Tawfick competed in the PACISE Programming Competition held at Kutztown University; Marshall, Evan and John came in second place.

Timothy Lerch (second-year chemistry major) was accepted into and is attending an National Science Foundation Research Experience for Undergraduates at Kent State University in 2024 at their Liquid Crystal Institute.

Kelly Sprenkel, Millersville chemistry major, accepted an NSF-REU at the University of Delaware for summer 2024.

Khush Shah received multiple grants to support his research with Dr. Cebra-Thomas – Biology Student Investigator, CPUB, SGRCA, MUSE.

Seven students will enter chemistry Ph.D. programs following graduation: **Elisabel Balbuena** (UTexas-Austin), **Madison Cherubin** (Penn State), **Rebecca Drager** (Ohio State), **Betel Erkalo** (Yale), **Amanda McKee** (WVU), **Elliott Newman** (PSU–Hershey), **Joshua Rushlow** (Texas A&M).



Meteorology students with President Wubah, Provost Gasparich and Dr. Marc Harris.

The following 27 students representing meteorology, MSEM, BSEM and MSISA programs attended the Annual Meeting of the American Meteorological Society, Baltimore, Md, Jan. 27–Feb. 1, 2024: **Gabe Pena, Gabriel Keller, Keelie Steiner, Gavin Morgan, Mark Battle, Nelson Tucker, Sanyaa Graves, Eliza Fries, Joshua Kinsky, Wesley Taylor, Victoria McPeek, Matthew Teare Jr., Matt Panetta, Christopher Martz, Peyton Simmers, Liam Pastelak, Melodie Martinez-Manahan, Shawn Smith, Kayleigh DeWalt, Anthony Williams, Rhiannon Cahoe, Jacob Biondo, Alex Sullivan, Ethan Kerr, Owen Hook, Brayden Nornhold, Brandon Skalniak.**

Camree Patterson (BIOL student) – full scholarship to attend and present at the Mid Atlantic Telehealth Resource Center annual conference (MATRC).

Samantha Nace (NURS student) – full scholarship to attend the Mid Atlantic Telehealth Resource Center annual conference (MATRC) and serve as a facilitator of the Elevator Speech Sessions.

The following 25 preservice teachers, along with three math faculty, attended Preservice Teacher Day 2024 at West Chester University: **Benjamin Bicking, Kaitlin Costanza, Ariana Cuba Rivera, Jessica Dieckman, Brendan Donough, Serena Eberly, Gracie Eberly, Micah Emig, Julia Fischer, Amber Forehand,Taylor Getz, Libby Haney, Nurudeen Kaffo, Kevin Knott, Michael Kurten, John Long, Tyler Miller, Maria Nguyen, Claire Pisanick, Madison Stebila, Eric Then, Karen Walters, Colton Whitehead, Genesis Zayas-Garcia.**

STUDENT SCHOLARSHIP HIGHLIGHTS

The College awarded more than $400,000 in scholarships to deserving students this academic year.
We would like to thank all the supporters of our students. Below are some highlights of our gracious donors.

Applied Engineering, Safety & Technology

- Wujcik Design Award
- American Industrial Hygiene Association Endowment
- ASSP/Raymond C. Mullin Award
- Brent D. Frey Technology Education Scholarship
- Burl N. Osburn Award in Industrial Arts Endowment
- C-P Flexible Packaging – Gary Nicholas Memorial Scholarship
- Dalton E. Smart Humanitarian Award Industry & Technology Department Endowment
- Dr. Dale H. Messerschmidt Technical Education Scholarship Endowment
- Dr. Paul G. Specht Occupational Safety and Environmental Health Alumni Scholarship
- Dr. Joseph J. Abromaitis Family-Industry and Technology Department Scholar-Athlete Scholarship
- Gene Haas Scholarship
- Harry A. '65 and Carolyn J. Lohss Manufacturing Engineering Scholarship
- Henry J. Kauffman Award in Industrial Arts Endowment
- Karl E. Gettle, Ph.D. Scholarship
- Lehigh Valley Chapter of the American Society of Safety Engineers Scholarship
- Paul W. Eshelman Memorial Scholarship Endowment
- Richard F. Brenner 1941 Industrial Technology Scholarship
- Robert V. and Virginia K. Brown Scholarship in Industrial Technology
- Steinman Foundations Intelligencer Printing Upperclassmen Scholarship
- Steinmetz Industrial Arts Teaching Award
- Susquehanna Engineering & Manufacturing Society/Gravell Scholarship
- Susquehanna Litho Club Underclassmen Scholarship
- The Robert Clark Hosler Scholarship in Industry and Technology

Biology

- Dr. Charles Winter Scholarship
- Dr. William J. Yurkiewicz Undergraduate Research Fellowship
- Gail and Kenneth Twiford Biology Award
- N. E. Shoemaker Biology Teaching Scholarship Endowment
- The Arthur and Claribel Gerhart Scholarship in Biology
- Alex Henderson Scholarship in Biology Endowment

Chemistry

- Barbara Rogers '63 Scholarship for Excellence in Chemistry Endowment
- Cecil M. Upton Organic Chemistry Award
- Gerald S. Weiss Chemistry Scholarship Endowment
- Karen A. Murley Student Undergraduate Research Fellowship Program in Chemistry
- Sandra A. Yeager, Ph.D., Chemistry Scholarship
- The Richard Sasin Endowed Scholarship in Chemistry
- Yvonne and Sandra Turchi Biochemistry Endowment

Computer Science

- Beth Ann Barry Memorial Scholarship Endowment in Computer Science
- Lee E. and Laura H. Boyer Award in Math and Computer Science Endowment
- Millersville University Computer Science Award Endowment

Earth Sciences

- William Malcolm Jordan Earth Sciences Scholarship Endowment
- Dr. William B. McIlwaine Scholarship in Earth Sciences

Continued on next page

Earth Sciences *continued*

- Harry A. '65 and Carolyn J. Lohss Geology Scholarship
- Harry A. '65 and Carolyn J. Lohss Meteorology Scholarship
- James and Judith Hower Scholarship in the Earth Sciences
- Paul H. Nichols Scholarship Fund Endowment
- Rettew Associates Scholar in Geology Endowment
- Scott and Deborah Jacobs Meteorology Scholarship

Geography

- Dr. Joseph W. Glass Geography Scholarship

Mathematics

- Class of 1928 Endowment
- Dr. Charles G. Denlinger Memorial Scholarship
- Edna Butler Cohen Memorial Scholarship in Mathematics
- Edna H. Myers Mathematics Scholarship
- George R. Anderson Mathematics Scholarship
- Harry E. Canter Statistics Award Endowment
- Robert M. Loeb Mathematics Scholarship
- Secondary Mathematics Education Scholarship
- Secondary Mathematics Education Upperclassmen Scholarship
- Stephen '73 and Linda '73 Williamson Math Scholarship
- The Dr. Bernie and Mary Anne Schroeder Scholarships for Mathematics Education Majors
- The Isaac F. Seiverling/Charles A. Rutter Scholarship in Math Endowment
- The Joseph and Anita Meier Memorial Scholarship
- Warren L. Godshall/Class of 1866 Endowment

Nursing

- CVS Health Family Nurse Practitioner Scholarship
- Forty et Eight Endowment for Nursing Education
- The Liselotte R. Wehrheim Scholarship in Nursing
- Lockey Nursing Scholarship
- Lt. Col. Jo Ann Cashman Scholarship Endowment
- Margaret K. Shenk Scholarship Trust Endowment
- Martha B. Gross Culbertson and Bradley J. Culbertson Nursing Scholarship
- The Luelle Hamilton, B.S., D.O., Scholarship in Nursing

Physics

- Chip and Kathy Brabson, PhD '70 Physics Scholarship
- Daniel G. Engle Scholarship Endowment
- Harry A. '65 and Carolyn J. Lohss Physics Scholarship

DONOR SPOTLIGHT

Additional scholarships for the College of Science and Technology provided by our gracious donors.

- ISA Central Keystone Section Outstanding Student Annual Award
- William McGrorty '82 Excellence in Printing Technology Award
- NRBC Scholarship
- Class of 1911 Endowment
- Dr. R. Edward Rajaseelan Chemistry Scholarship
- Dr. Benjamin J. Del Tito Jr. '77 & Anna DeBlois Del Tito Scholarship
- Dr. Charles Scharnberger Geology Scholarship
- George F. Stauffer Scholarship Endowment
- Henry Franklin Bitner Science Award Endowment
- James E. Koken Science Scholarship
- McCollough Family College of Science and Technology Scholarship
- Mervin W. Hess Endowed Scholarship
- Philip C. and Karen Ashkar Murley '63 Science Scholarship
- Philip C. and Karen Ashkar Murley '63 Scholarship
- Wubah Family Endowed Scholarship
- Miller-Averett Geography Scholarship
- Predmore-Cornogg Geography Scholarship Endowment
- The Robert N. and Darlene I. Ford Merit Scholarship in Geography
- Joseph Anthony and Linda Ryan Caputo Scholarship in Chemistry
- Clark-Yalda Scholarship in Atmospheric Science
- The Esther M. Kilheffer Endowment of Earth Sciences
- Margaret V. Farster and James R. Farster Scholarship Fund
- Hoffman Family Endowment for Honors Program Students
- Richard G. Kokat and Andrei Georgescu Scholarship
- Joyce Denelsbeck King '83 Scholarship for Women in STEM
- Matthew C. Bruns '83/John A. Yuska '71 Scholarship
- Chip and Kathy Brabson, Ph.D. '70 Physics Scholarship
- Dr. Sydney Radinovsky Scholarship in Biological Research
- Ratzlaff Scholarship Fund
- Robertson Biology Scholarships Endowment
- The Faraday (Robertson) Physics Scholarship
- The Aaron and Dr. Kisha Dread–Earnest E. Just STEM Inclusion Scholarship Fund
- UGI Utilities, Inc., Community Safety Scholarship
- Dr. Samuel P. Wallace '41 Endowment
- Trudy Tyler Yefko '77 Biology Scholarship

STUDENT PUBLICATIONS AND PRESENTATIONS

PUBLICATIONS

Many students were listed as coauthors on 24 peer-reviewed journal publications and 41 faculty conference presentations (mostly undergraduate students), and 67 students presented papers at national and regional conferences.

- **Natalie Pinder** and Ligocki, Isaac Y. and Horton, Brent M. and Hoover, John E., Valerenic Acid Reduces Anxiety-Like Behavior in Young Adult, Female (C57BL/6J) Mice. This peer-reviewed publication originated with Natalie Pinder's thesis research conducted in Dr. Hoover's lab. After graduation, Natalie completed a master's in public health and is now a first-year medical student.
- Ed Rajaseelan (Chemistry) and Daniel Albert (Chemistry) published a peer-reviewed article with Millersville student **Aaron Maynard** and Millersville chemistry alumni Drs. Michael Gau and Taylor Keller (University of Pennsylvania) in IUCrData titled "1-Ethyl-4-isopropyl-1,2,4-triazolium bromide."
- Ed Rajaseelan (Chemistry) and Daniel Albert (Chemistry) published their recent peer-reviewed publication with Millersville student **Aaron Maynard** and Millersville chemistry alum Dr. Michael Gau (University of Pennsylvania) in IUCrData titled [(1,2,5,6-η)-Cycloocta-1,5-diene](1-ethyl-4-isopropyl-1,2,4-triazol-5-ylidene)(triphenylphosphane)iridium(I) tetrafluoridoborate dichloro-methane sesquisolvate.
- **Sarah Keller** (May 2024 DNP graduate), "Timely Recognition of Posterior Circulation Stroke: Triage Nurse-Driven Dizziness Screen," Eastern Research Nursing Society, Boston, MA, April 3–5, 2024, published in Journal of ERNS.
- **MiKaila Lugo-Schlegel** (May 2024 DNP graduate), "Breaking Mental Health Stigma: Incorporating NAMI's in Our Own Voice Into a Family Nurse Practitioner Program," Eastern Research Nursing Society, Boston, MA, April 3–5, 2024, published in Journal of ERNS.

PRESENTATIONS

MADE IN MILLERSVILLE CONFERENCE

This year's Made in Millersville marked the 10th anniversary of this conference, which celebrates student scholarship and creativity. The College was well represented by many of our students.

- The following 11 chemistry students presented posters at Made in Millersville on their research projects with faculty from Millersville University (4/11/23). **Madison Cherubin** (Lyman Rickard), **Joshua Rushlow** (Baoling Ma), **Elisabel Balbuena** (Steven Kennedy), **Rebecca Drager** (Maria Schiza), **Emma Witmer** (Melissa Mullen Davis; Aimee Miller), **Natalie Weinmann** (Melissa Mullen Davis), **Ashleigh Dell** (Jeremiah Mbindyo), **Amanda McKee** (Daniel Albert), **Madison Adams** (Jeremiah Mbindyo), **Betel Erkalo** (Melissa Mullen Davis) and **William Trinh** (Jeremiah Mbindyo.)
- The following 16 OSEH students presented six projects at Made in Millersville. Topics included Substance Abuse in Construction, Lockout Tagout, Fall Protection, Safety Helmet in Construction, Artificial Intelligence in Safety, Artificial Intelligence vs. Human Controlled Safety. **Jordan Branch, Levi Brubaker, Jacob Burke, Dominick DeLorenzo, Kerri DeWitt, Sophia Farrell, Garrett Groshong, Sydney Hargrove, Sean Harris, David Kahler, Brennen Kersey, Adam Kriesman, Ben Kuhn, Simon Maier, Nigel Marquez, Zachary Rinehart, Olivia Rozenberg** and **Halee Schick**. In addition, the students presented their projects at the ASSP Research Poster/Presentation at the Central PA Safety Council (4/4/24) in State College, at the Central PA ASSP Chapter meeting (March 2024 meeting) and at a Lancaster Safety Council meeting on April 18, 2024.
- **Dominick DeLorenzo** and **Abby Rodriguez**, "Enhancing Safety Standards in Excavations and Trenching," Made in Millersville Conference – 2024.
- **Christopher Moyer** and **Ian Peradilla**, "Noise Pollution," Made in Millersville Conference – 2024.
- **Ryan Sarge, Christopher Moyer** and **Ian Peradilla**, "Evaluating the Financial Cost of Ergonomic Stressors in the Workplace," Made in Millersville Conference – 2024.

- **Darvel Young, Asia Eames** and **Seth Pychinka**, "Implication of AI Technology in the Field of Construction," Made in Millersville Conference – 2024.
- **Sabrina Zimmerman** and **Naomi DeLuca**, "Benefits of Using AI to Improve Workplace Safety," Made in Millersville Conference – 2024.
- **Philip Gomba** and **Stanton Riley**, "How Specific Absorption Rates Impact Human Health," Made in Millersville Conference – 2024.
- **Kyle Procopio**, poster presentation, "Exploring Adaptation and Gene Flow Between Arabidopsis Lyrata Populations Growing on Serpentine and Non-Serpentine Soils", Made in Millersville, April 9, 2024.

OTHER PRESENTATIONS OF NOTE

- **Tyler Love, Brandt Hutzel** and **Sharon Brusic** (Applied Engineering, Safety & Technology) (June 27, 2023). "An Overview of State-Developed P-12 Standards for Technological and Engineering Literacy. Peer-reviewed paper by T. Love, B. Hutzel and S. Brusic. Presentation delivered by T. Love at the 2023 Annual Conference of the American Society for Engineering Education (Baltimore, MD).
- **Madison Cherubin, Victoria Hans** and **Jordyn Levine** presented their poster "Development of an Aptamer-Based Biosensor for the Detection of Myoglobin," SEPSACS Education Night, Millersville University.
- **Emma Witmer** presented "Exploration of a Multistage Isolation of Horseradish Peroxidase for Biochemistry Lab," National American Chemical Society Meeting, Indianapolis, IN.
- Nine chemistry majors presented their student-faculty research projects at the national American Chemical Society meeting in New Orleans in March 2024. Those students were mentored by five different chemistry faculty (Steven Kennedy, Melissa Mullen Davis, Aimee Miller, Daniel Albert and Ed Rajaseelan) and accompanied to the meeting by Lyman Rickard.
- **Grudovic, C.**, Brink-Roby, D. Walsh, T. "Incorporating Temporal Changes in Material Properties Into Analog Modeling," GSA Abstracts With Programs, NE Regional Meeting 2023 – Reston, VA.
- **Olivia Rozenberg** and **Naomi DeLuca** achieved first place in their undergraduate poster presentation on Construction Exoskeletons at the American Society of Safety Professionals (ASSP), Region VI, in Myrtle Beach, SC.
- **Matthew Teare Jr.**, "Radar Characteristics of Tornadic Convection in Pennsylvania Sampled by Radar at Short Range." Student Poster Session – Annual Meeting of the American Meteorological Society. Baltimore, MD, 2024.
- **Victoria McPeek**, "Quantifying Meltwater on the George VI Ice Shelf, Antarctica." Annual Meeting of the American Meteorological Society – Student Poster Session. Baltimore, MD, 2024.
- **Wes Taylor**, "A Comparison of Boundary Layer Heights for the Washington, D.C., Area During Late-Spring and Early-Summer 2021 Between a WRF Model and Processed Ground – Based LiDAR Data." Annual Meeting of the American Meteorological Society. Student Poster Session. Baltimore, MD, 2024.
- **Wes Taylor, Melodie Martinez, Alex Sullivan**, Town Hall, Annual Meeting of the "AMS Project HALO (Heliophysical and Atmospheric Analysis of Lunar Obstruction): An Effort to Provide Continuous Meteorological Observation of the April 8, 2024, Total Solar Eclipse. Part II: Coordination."
- **Yohannes Geleta, Jingnan Xie**, "Using Mchine Learning Algorithms to Detect Bots on E-Commerce Websites," PACISE 2024, Kutztown University, Kutztown, PA.
- **Sarah Keller** (May 2024 DNP graduate), "Timely Recognition of Posterior Circulation Stroke: Triage Nurse-Driven Dizziness Screen," Eastern Research Nursing Society, Boston, MA, April 3–5, 2024. Published in Journal of ERNS.
- **MiKaila Lugo-Schlegel** (May 2024 DNP graduate), "Breaking Mental Health Stigma: Incorporating NAMI's in Our Own Voice Into a Family Nurse Practitioner Program," Eastern Research Nursing Society, Boston, MA, April 3–5, 2024. Published in Journal of ERNS.
- **Sarah Abrahem** '24, Poster Presentation, "An RNAi Screen to Identify Novel Genes Involved in Meiotic Chromosome Segregation." The Allied Genetics Conference (National), Washington, D.C., March 6–10, 2024. Sarah's work was from her summer 2023 PCCDI Fellowship.
- **Brandi Wolfinger** '24, Poster Presentation, "Prophase Pause Activity of CENP-C Is Independent of CAL1." The Allied Genetics Conference (National), Washington, D.C., March 6-10, 2024. Brandi's work has been through her independent research funded by the SGRCA.
- **Darian Hauf** (BIOL student), "Green Roofs and Urban Bat Ecology." Joint Meeting of the Pennsylvania Chapter of the Wildlife Society and the Pennsylvania Biological Survey.

- **Evelyn Orlowski** (BIOL student), "Barn owl pellet analysis for small mammal use of landscapes." Joint Meeting of the Pennsylvania Chapter of the Wildlife Society and the Pennsylvania Biological Survey.
- **Claire Rohrer, Kevin Bratina, Mary Weiss** and **Orion Groff** (BIOL students), "Remote Small Mammal Trapping Techniques." Joint Meeting of the Pennsylvania Chapter of the Wildlife Society and the Pennsylvania Biological Survey.
- Jeremiah Mbindyo (faculty) and chemistry students **Tyler Rodenberger, Zachary Nikolaus** and **Rachel Bonner** presented their research with industry partner Fontana Candle Company at the Manufacturing PA Innovation Program Expo conference in Harrisburg, PA.
- CSCI students **Mitchell Harrison, Jonathan Rivera** and **Justin Stevens**, and Chad Hogg (faculty), "Training Artificial Intelligence Agents to Play a Tower Defense Game Using Reinforcement Learning." Spring Conference of the Pennsylvania Computer and Information Science Educators (PACISE), Kutztown University.

FACULTY GRANTS

SCTE faculty were awarded more than $2 million in fundamental research, professional and career development, and educational grants. Grant dollars are being spent on student experiences in the current cycle.

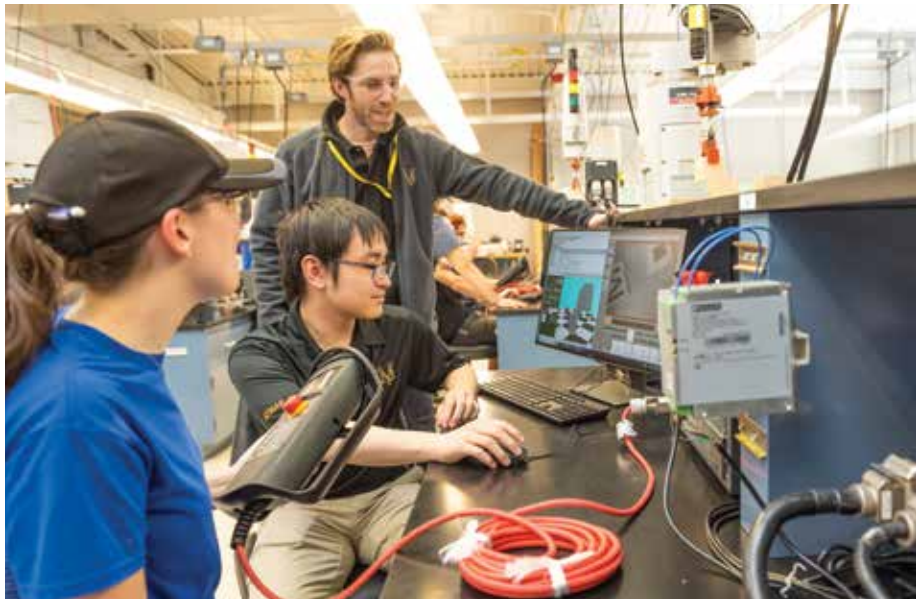
Department of Agriculture's Ag and Youth Grant

Sharon Brusic (Applied Engineering, Safety & Technology) was awarded a grant from the Department of Agriculture's Ag and Youth Grant Program for a project that she is working on with Tommy Kuhns '25 (TECE),, an undergraduate student in Technology & Engineering Education. The purpose of the grant is to run a competition for middle school and high school students to design hydroponic or aquaponic systems. The concept was Kuhns' brainchild, and he is playing the key role as competition facilitator. Three winning teams were given funding from the grant to pay for materials to build and test their systems. Mr. Kuhns will be visiting each site, accompanied by a representative from InTag Aquaponics.

Pennsylvania Department of Community and Economic Development Innovation in Manufacturing Expo Grant Recognition Ceremony

Students, faculty and Millersville industry partner **Precision Cobotics** were recognized with a grant award and keynote address at the Expo held in Harrisburg, Pa., on Friday, April 5, 2024. **Jeremiah Mbindyo** (Chemistry) was recognized as a two-time recipient of a Pennsylvania Manufacturing in Innovation Program (PMIP) grant recipient. This is Dr. Mbindyo's second PMIP grant, and he is the only PASSHE faculty member to receive a grant of this type.

The Expo featured a keynote address by **John Bridgen, president of Precision Cobotics**. Mr. Bridgen showcased the partnership between Precision Cobotics and the College of Science and Technology in the development of our grant-funded innovation lab called **Robotic WorX**. The engineering solutions lab is overseen by **John Haughery** (Applied Engineering, Safety & Technology) and has already engaged with more than 500 high school students through site demonstrations and hands-on internship training. The College is looking to expand the project with additional grant support that would bring in additional cobots (robot arms) and additional staffing from Precision Cobotics.



Lancaster STEM Alliance

John Haughery (Applied Engineering, Safety & Technology) and **John Bridgen** (Precision Cobotics) received a $25,000 grant for Workforce Development and Career Exploration in Robotics Engineering (Robotic WorX).

Robotic WorX Workforce Development

The PA Department of Community and Economic Development awarded a $200,000 Training-to-Career grant for the Robotic WorX private-public partnership program for high school and undergraduate students in automation and robotics engineering.

Kittatinny Ridge Mini-Grant Program

Aaron Haines (Biology) received $5,000 from the PA Game Commission for applied research titled "Noninvasive Survey of Weasels and Other Rare Mammals Along the Kittatinny." Starting January 1, 2024, multiple student researchers have been supported in Dr. Haines's Applied Conservation Lab.

NSF Noyce Teacher Scholarship Program Track 1 Grant Award
Principal investigator **Laura Ramos-Sepulveda** (Biology) led MU faculty collaborators **Nanette Dietrich** (Educational Foundations), **Ann Gaudino** (Educational Foundations), **Dan Albert** (Chemistry), **Bob Vaillancourt** (Earth Sciences), **Tyrone Washington** (Mathematics) and **Cynthia Taylor** (Mathematics) in the development of a successful grant application to the National Science Foundation to recruit and prepare STEM teachers to work in high-needs districts. The $1,199,953 five-year Noyce Scholarship grant will provide scholarship funding and academic support to STEM education majors. The project will continue forward with new PI Dr. Cynthia Taylor.

PA Labor and Industry Comprehensive OSHA Study
Co-PIs **Jack Ogutu** (Applied Engineering, Safety & Technology) and **Betty-Jo Bowers** (Applied Engineering, Safety & Technology) were awarded a $168,431 contract by the Governor's Office of Administration (OA) to "conduct a comprehensive review and analysis of the effectiveness of the Commonwealth's workplace safety program." The policy review and analysis will compare Pennsylvania's state worker protection standards and requirements with those of the federal government and private sector.

NSF's Louis Stokes Alliances for Minority Participation (LSAMP)
Collaborative grant between Millersville, East Stroudsburg University, Slippery Rock University and West Chester University. **Gail Gasparich** (Provost) is the primary investigator, and Brent Horton (Biology) is faculty grant coordinator for Millersville University. The first cohort of eight scholars started in fall 2024.

FEMA Grant for Scholarships
Duane Hagelgans (Earth Sciences) was awarded a four-year, $296,000 grant for scholarships for students. The grant serves several purposes: 1) It gives scholarship money to students, 2) it provides volunteers to the local volunteer fire company and 3) it provides both community service opportunity to students and better community relationships with our local community.

Aaron Haines (Biology) was awarded $1,000 by the Pennsylvania Chapter of the Wildlife Society to present at the International Meeting of the Wildlife Society.

Christopher Stieha (Biology) continues to serve as project director for Millersville University's role in the Pennsylvania Alliance for Design of Open Textbooks (PA-ADOPT), which consists of four participating institutions from Pennsylvania's a State System of Higher Education (PASSHE) that are all regional and primarily undergraduate institutions, situated in Southeastern Pennsylvania. The grant funding for Millersville's part is passed through West Chester University and supports the training in textbook development and the creation of Open Educational Textbooks. Currently, two books have been completed, with one being Dr. Daniel Albert's "Chemistry Techniques and Explorations: An Introductory Chemistry Laboratory Manual." Six other textbooks are currently being written by six biology faculty.

Select Millersville University Faculty Grants Committee Grants to SCTE Faculty:

Daniel Albert (Chemistry) was awarded a travel grant for two presentations: (1) "Structuring Student-Developed Procedures and Analysis in the Physical Chemistry Laboratory" and (2) "Passer Award Committee Keeps Alive the Vision of Dorothy and Moses Passer."

Greg Blumberg (Earth Sciences) was awarded a research grant for Project TILTTING 2024.

Jessica Fellmeth (Biology) was awarded a research grant for the "Investigation of CENP-C Mutants."

Aaron Haines (Biology) was awarded a travel grant to present "Impacts of Invasive Species on Endangered Species."

John Haughery (Applied Engineering, Safety & Technology) was awarded a special activity grant for his participation in the "31st Annual Intelligent Ground Vehicle Competition (IGVC)."

Alex Johnson (Applied Engineering, Safety & Technology) received a research grant for the "Development of Recycled Plastic Extruder for the Creation of 3D Printing Filament."

Maja Klosinska (Biology) was awarded a research grant for her work "Exploring Root Microbiomes in Serpentine and Non-Serpentine Populations of the Lyre-Leaf Rockcress, Arabidopsis Lyrata."

Ajoy Kumar (Earth Sciences) was awarded a travel grant to present " "Satellite-Derived Chlorophyll Estimates in Highly Stratified Regions of the Mid-Atlantic Bight."

Continued on next page

FACULTY GRANTS *continued*

Isaac Ligocki (Biology) received two research grants, one for "The Evolution of Patterning in the Striped Killifish, Fundulus Majalis" and the second for "Validating Exposure Concentrations of a Chemical Pollutant Believed to Have Estrogenic Properties." He was also awarded a travel grant to present "Range Expansion and Behavioral Variation in Two Gambusia Fishes in the Susquehanna River Watershed."

Jeremiah Mbindyo (Chemistry) was awarded a travel grant to present "Green and Sustainable Chemistry in the Undergraduate Curriculum."

Aimee Miller (Chemistry) was provided a special activity grant for her service as Chemical Education Division Program C-Chair for the Fall 2024 National Meeting of the American Chemical Society.

Melissa Mullen Davis (Chemistry) was awarded a travel grant to present at the Biennial Conference on Chemical Education.

Jack Ogutu (Applied Engineering, Safety & Technology) was awarded an overseas travel grant to present "Constructing a Hierarchy of Affects Experienced by Workers Working With Industrial Robots in a Manufacturing Factory."

Ed Rajaseelan (Chemistry) was awarded a publication grant proposal titled "[(1,2,5,6-[eta])-Cycloocta-1,5- diene](4-isopropyl-1-methyl-1,2,4-triazol-5-ylidene)(triphenylphosphane)iridium(I)tetrafluoridoborate dichloromethane 0.8-solvate."

Lyman Rickard (Chemistry) was awarded a travel grant to present on the "Development of an Aptamer-Based Biosensor for the Electrochemical Detection of Myoglobin."

Robert Vaillancourt (Earth Sciences) was awarded a travel grant to present "OT34B-1585 A Glider Study of Seasonal Changes in Bio-Optical Properties and Phytoplankton Biomass at the New England Shelf Break Front."

Talor Walsh (Earth Sciences) was awarded a travel grant to present "A New Model for the Dominant Control on Fault Propagation in Duplexes: Insights From Numerical and Analog Approaches."

Carolyn Weaver (Biology) was awarded a travel grant to present "Improving Retention in the STEM Fields With High-Impact Undergraduate Research Experiences at Wallops Island, Virginia."

Jingnan Xie (Computer Science) was awarded a publication grant titled "Pumping Lemmas Could Be Harmful."

SELECT FACULTY PUBLICATIONS AND HIGHLIGHTS

PUBLICATIONS

- J. Hu, J. B. Griffith, **Michael Elioff** (Chemistry). Polymer Bound Acridinium Derivative as a Turn-Off Fluorescent Sensor For Cu (II) and Fe (III) Ions in Acidic Condition. J. Photochem. and Photobiol. A: Chemistry, 2023, 443, 114848-114857.
- **Aaron Haines** (Biology). published two book chapters in "Inclusive Practices; Ideas for Classroom Integration From Millersville Classrooms to Yours." millersville.tind.io/record/109943?v=pdf
- **Jessica Fellmeth** (Biology). "A Dynamic Population of Prophase CENP-C is Required for Meiotic Chromosome Segregation" has been accepted for publication in PLOS Genetics. This work bridges her postdoctoral fellowship research at Rutgers, The State University of New Jersey, and her new lab here at Millersville University. Nov. 29, 2023. https://pubmed.ncbi.nlm.nih.gov/38019881
- **Melissa Mullen Davis** (Chemistry), Schmeisser, J., Crawford, G. (2023). Distance Learning With Food Chemistry. In Kloepper, K. D. & Crawford, G. (Eds.). Chemistry in General Education [Online]; ACS Symposium Series; ACS Books. Ch 4, pp. 49–70. Published a collaborative chapter, "Distance Learning With Food Chemistry," in American Chemical Society e-book "Chemistry in General Education."
- **Ed Rajaseelan** (Chemistry), **Dan Albert** (Chemistry), Tim Lerch (student), Dr. Michael Gau (University of Pennsylvania, alumnus). "(4-Butyl-1-ethyl-1,2,4-triazol-5-yl-idene)[(1,2,5,6-η)-cycloocta-1,5-diene](triphenylphosphane) rhodium(I) tetrafluoridoborate," *IUCrData*.

- **Kathleen Schreiber** (Geography), 2022. Ch. 3: Best Management Practices as an Alternative Approach for Urban Flood Control. Flood Handbook, Vol. 3: Flood Impact and Management, Ed. by Eslamian, S. and F. Eslamian, Taylor and Francis, CRC Group, USA, pp. 53–76.
- **Todd Sikora** (Earth Sciences). "Elevated Mixed Layers During Great Lake Lake-Effect Events: An Investigation and Case Study from OWLeS, Monthly Weather Review." Author information: Steven J. Greybush (Penn State), Todd D. Sikora (Millersville), George S. Young (retired, Penn State), Quinlan Mulhern (Penn State), Richard D. Clark (retired, Millersville) and Michael L. Jurewicz Sr. (National Weather Service). Nov. 16, 2023.
- Jackson, C., Buchheister, K., **Cynthia Taylor** (Mathematics) (2023). "A Planning Framework Foregrounding Equity in Mathematics Teaching and Learning." Investigations in Mathematics Learning, 15(2), pp. 103-117.
- **Cynthia Taylor** (Mathematics). Publication titled "Attending to what prospective teachers notice about students' intersecting identities." Published in School Science and Mathematics, 123(8), pp. 461–475, Jackson, C., Buchheister, K. W., & Taylor, C. E. (2023).

- **Jingnan Xie** (Computer Science). On Teaching Recursion in Lower-Level Courses. Journal of Computing Sciences in Colleges, Volume 38, Issue 801, p 216.

FACULTY AWARDS AND RECOGNITIONS:

Sepi Yalda

Cayleigh Minter

Duane Hagelgans

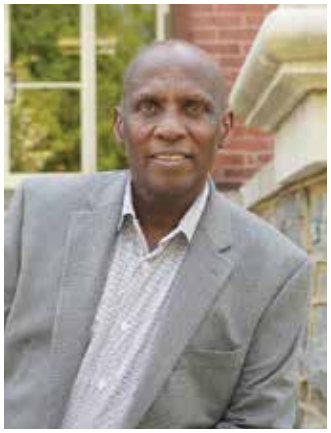
- **Sepi Yalda** (Earth Sciences): Nominated by the American Meteorological Society (AMS) Nominating Committee and Executive Committee for the 2024 AMS President-Elect position.
- **Cayleigh Minter** (Nursing): Promoted to Senior Advanced Practice Provider (June 2023) and UPMC APP Recognition Award Nominee (July 2023).
- **Tracee Matincheck**, CRNP (Nursing): APP Clinical Ladder Appointment in June 2023, designated as "Senior CRNP"; UPMC Pinnacle.
- On August 8, 2023, in a surprise ceremony, **Duane Hagelgans** (Earth Sciences) was honored by the Blankets of Honor organization. The organization honors veterans and first responders for their service. During the ceremony, he was told of the 332 Blankets of Honor awarded to date, and he was the first firefighter honored.

ALUMNI SPOTLIGHT

Emma (Montgomery) Wertz '18 was a finalist for the Next Gen Award as part of the 2023 7th Annual Women in Technology Awards, presented by the Technology Council of Central Pennsylvania. She is very active in the local tech community. She was nominated for her work as head coach for the Girls Code Club at Lancaster Science Factory.

Amy Fraley '14 was recently named a tenure-track assistant professor of medicinal chemistry in the Department of Chemistry and Applied Biosciences at ETH Zurich (a top global university in STEM).

Terry Papavasilis '23 B.S. in biology (marine concentration) with honors, and a minor in oceanography. She is currently a Ph.D. student in biology at East Carolina University, working on using passive techniques such as hydrophones to study fish behavior to contribute this knowledge to fisheries managers to make fisheries more sustainable. Terry credits here research experiences from Millersville University with her graduate school readiness. *"I would not be here at East Carolina without the amazing opportunities to conduct independent research at Millersville University. Dr. Didier and Dr. Kumar were very supportive of my desire to apply lessons learned in their classrooms to the real world, and this resulted in the establishment of Lake Allure, one of the Northeast's premier SCUBA diving training facilities. I would also like to thank Dr. Stieha for helping me learn the intricacies of R so that I could present my research at national conferences. These experiences prepared me very well for graduate school, and I am always happy to come back to Millersville to lend a hand to those who want to pursue marine science."*



Nasser Bogale '13, an associate professor of mathematics at Thaddeus Stevens College of Technology, will spend the 2024–25 academic year in Ethiopia as a Fulbright Scholar in mathematics and statistics. Dr. Bogale, who has been teaching at Thaddeus Stevens College since 2009, was selected as a Fulbright U.S. Scholar by the U.S. Department of State and the Fulbright Foreign Scholarship Board. He'll be teaching research methods and advanced statistics to Ph.D. program students at Hawassa University in Ethiopia. Prior to teaching at Thaddeus Stevens, Bogale served as a dean of academic affairs at Nelson Mandela College in Ethiopia and as deputy head of the education department in the Sidama Region of Ethiopia. He holds a doctoral degree in leadership from the University of the Cumberlands, a master's degree in mathematics from Millersville University, a master's degree in education leadership from University College Dublin Belfield in Ireland and a Bachelor of Science degree in mathematics from Addis Ababa University in Ethiopia.

DONOR SPOTLIGHT

$10,000 or greater
Mrs. Susan F. Glass '84
Mrs. Nancy C. Adams '73
Ms. Karen A. Murley '63
Mr. Brent D. Frey '83

$5,001–$10,000
Dennis Denenberg
Stephen J. '73 & Linda L. '73 Williamson
Carroll (Butch) J. '72 & Cheryl A. Staub
H. James II '69/'70 & Dorothy G. Reisinger
Kathleen S. '79 & Richard Hellstern
M. Diane Koken '72 & John Herr

$1,001–$5,000
Steven M. Kennedy
Mr. Robert Severn
Henry M. Hershey
Kathy J. G. Hershey
Dr. Dorothee J. Blum
Andrea M. '85 & Terrance P. Chamberlain
William '82 & Gaye McGroty
Mr. Kenneth A. Twiford
Mr. Michael K. McInerney '76
Linda L. Clark
Mr. James Katzman
Robert J. Chesko
Ms. Joyce Cohen
Saul W. '85 & Tracy L. Fink
Joseph Y. '84 & Eileen E. Choi
Kristen L. '84 & Gerry W. Gray
Dale H. '60 & Doris Messerschmidt

$500–$1,000
Ximena P. Catepillan
Mr. Chan M. Dang '87
Laverne S. Hauck Jr '69
James S. '80 & Susan M. '82 Hewlett
Ms. Joyce D. King '83
Carol Kosel
C. Clair & Margaret D. McCormick
Paul G. Specht
Mr. Mark A. Sutcliffe '07
Kristene E. Whitmore, '75
Deborah J. '88 & Douglas Willwerth
Daniel A. & Judith Wubah
Curtis J. '85 & Elisa M. '85 Zimmermann
Edward W. '66 & Carol L. Checket
Evan M. '05 & Lisa Lowery
Matthew N. '95 & Jamile L. '13 Olphin
Ms. Kathryn R. Ross
Mr. Alan E. Yefko
Eric A. H. '96 & Gayle Kipp-Boltz
Earl B. Frederick '69 & Theresa A. Thompson
Peter T. '82 & Kathleen K. '81 Howe
Edward C. & Carol T. Shane
Erin Smith
Mr. Clark E. Taylor '56
Mr. Donald P. Witter Jr. '67
Mr. Leonard F. Wujcik '73
Esther Zechman

New Funds/Planned Gifts
Wayne MacKenzie '04
Meteorology Support Endowment

Corporations/Organizations
AccuWeather
AT&T
Bristol Myers Squibb Company
Climavision
Cognex Corporation
CVS Health Foundation
East Otis Studio LLC
Fidelity Charitable – Philip C. and Karen Ashkar Murley Fund
Glatfelter Insurance Group
Gochenauer Kennels Inc.
Harden Architectural Security Products
Hewlett-Packard Co.
Merck & Company Inc.
Millersville University Alumni Association
Millersville University Technology Camp
Millibar Robotics
Mulak Farms Inc.
Neff Automation
Phoenix Contact, USA
Pledgling Foundation
Precisionform Incorporated
Robonation, Inc.
Sew Eurodrive
SICK Inc.
Student Lodging Inc.
Susquehanna Litho Club
The National Board for Respiratory Care
UGI Utilities Inc.
United Way Worldwide
UPMC
Vanguard Charitable Endowment Program – Brent Frey/Deb Vasil
Weather Trends International Inc.

SCTE ADVISORY BOARD

DEDICATED TO STUDENT SUCCESS

Collaboration and communication are integral to scientific discovery and are also central to the leadership counsel provided to Dean Harris by the College of Science and Technology Advisory Board. The board members listed at right give selflessly of their time in serving the students of the College, in strategizing with the dean to increase the visibility of the College's academic programming and public events, and in helping the dean to fundraise for high-impact experiences for students and for various capital projects. Thank you!

In addition to the College-level board, many of the College's departments have assembled program-level advisory boards, which are made up of industry leaders, educational partners, alumni and community members, and Dean Harris would like to take this moment to thank all of these individuals for their dedicated work to helping our departments and faculty develop and refine the career-ready curricula and student opportunities that are central to our mission. Thank you!

SCTE Advisory Board Mission

The College prepares students for a lifetime of professional work and responsible citizenship by offering curricular programs and cocurricular activities that foster their intellectual development, stimulate their curiosity and support their personal growth within an inclusive, welcoming environment.

SCTE Advisory Board Vision

The College creates dynamic educational experiences to provide our students with the knowledge, skills, experiences and confidence to excel in whatever they choose to pursue.


Dr. Saul Fink


Mr. Brent Frey


Dr. Jon S. Kauffman


Mr. Wayne Mackenzie


Mr. Will McGrorty


Mr. Jeffrey Pinegar


Ms. Deborah Willwerth


Dr. Curtis J. Zimmermann

SCTE ADVISORY BOARD MEMBERS

Dr. Saul Fink, Normunity, Sr. Vice President of Pharmaceutical and Nonclinical Development

Mr. Brent Frey

Dr. Jon S. Kauffman, Eurofins Lancaster Laboratories, Inc., Vice President, Biopharma Biologics

Mr. Wayne Mackenzie, National Oceanic and Atmospheric Administration (NOAA), Chief of Observations and Research Support Division, Weather Program Office

Mr. Will McGrorty, Intellicor Communications LLC, Vice President

Mr. Jeffrey Pinegar, Phoenix Contact, Inc., Product Manager Development and Manufacturing Division

Ms. Deborah Willwerth, UPMC Pinnacle Lancaster Region, President

Dr. Curtis J. Zimmermann, Chief Legal Counsel, Corporate Secretary, Forge Nano

MAKE A GIFT TO SCTE

The achievements highlighted in this annual report reflect the remarkable progress of our students, and we are committed to providing each one with a comprehensive professional and experiential learning journey at the College. Our cutting-edge science complex will serve as a dynamic center for innovation, creativity and teamwork. With your support, we can equip our students with essential tools and resources, empowering them to excel academically and emerge as leaders in their respective fields.

We encourage you to join us in this exciting initiative. Your generosity can help realize this vision, ensuring our students are prepared to lead with creativity and confidence. For more information on how your contributions can create a lasting impact, please call **717-871-7520** or email **giving@millersville.edu**. We have various opportunities for you to make a meaningful difference in support of the new science complex.

To give online, visit millersville.edu/give.

Once there, please enter your gift, then scroll through the dropdown list where it reads **"Please direct my support,"** select **"Other"** and type in **"New Science Complex."** This way we can ensure that your generous gifts are applied to the appropriate fund.

Does your company offer matching gifts? You can find out by going to **millersville.edu/give/how-to-give/matching-gifts.php**.

LEADING THE WAY IN IMMERSIVE AND HANDS-ON EDUCATION

SCTE Educational Philosophy: The College of Science and Technology prepares students to meet the needs of a 21st-century workforce by implementing innovative directions in science and technology education and by utilizing emerging technologies and immersive learning strategies.

Educational Promise: Provide all students with the depth and breadth of education and the hands-on learning needed for success in contemporary fields of science and technology.

Delivering on this promise:

- We are active scholars and researchers who bring our passion and knowledge into the classroom, using research, scholarly work and technology as teaching tools.
- We facilitate and encourage students to work TOGETHER to be strong and capable learners, collaborating as cross-functional teams.
- We embed high-impact educational practices into the curriculum and mentor students through experiential and professional learning opportunities, cultivating the skills necessary for them to become independent, lifelong learners and to achieve their academic and professional goals.

Millersville University
COLLEGE OF SCIENCE AND TECHNOLOGY

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