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6 ADDITIVE
MANUFACTURING

10 IMPACTS
GRANT

13 MCDONOUGH
MUSEUM





The Youngstown State University College of Graduate Studies provides an integrated program of advanced study leading to discipline mastery and an understanding of related subjects. Graduate students working with highly qualified graduate faculty members demonstrate mastery of their discipline and document discovery of knowledge through research and scholarly activity.

2017 Spring Dissertation Titles

Kelly L. Colwell
Educational Leadership
Disseminating the Cost of the Empty Chair: Improving Health care Access and No Show Rates Through Age and Disease Specific Education in the Pediatric Asthma Patient Population

Kelly Sue Darney
Educational Leadership
Vocational Nursing Programs in Appalachia: The Effects of Technology Efficacy Across Traditional and Non-Traditional Post-Secondary Students

Edward Joseph Dombroski
Educational Leadership
Local School Districts Developing Their Future Leaders

George David Kubas
Materials Science and Engineering
Detection of PETN Using Peptide Based Biologically Modified Carbon Nanotubes

Kurt Richard Meader
Educational Leadership
A Mixed-Methods Study of the Shortage of Males Teaching Elementary School

James Patrick Moran
Educational Leadership
The Impact of Extracurricular Activity on Teacher Job Satisfaction

Susan M. Olive
Educational Leadership
The Value of Science Fair and the Factors that Have Led to the Decline in Ohio Science Fair Competition

Nicholas Donald Perry
Educational Leadership
Teacher Attitudes and Beliefs about Successfully Integrating Technology in their Classroom During a 1:1 Technology Initiative at the Secondary Level and the Factors that Lead to Adaptations in their Instructional Practices

Lynda Marie Ricciardi
Educational Leadership
The Perception and Reported Impact of the Patient Protection and Affordable Care Act on Participation in Health Care and Health Maintenance by Caucasian Males

William Franklin Young
Educational Leadership
1:1 Laptops in Education and Achievement Test Results in One Rural Ohio High School

2017 Spring Thesis Titles

Kelsey Marion Aeppli
Criminal Justice
A Cultural Analysis of Police Stress: An Application of Grid/Group Theory

Alexander Austin Ayers
Music Jazz Studies
Tradition and Training: A Look at Folk Elements Within Modern Jazz and a New Approach to Composition Using Elements From Appalachian

Denis Crawford
History
It Wasn't a Revolution, but it was Televised: The Crafting of the Sports Broadcasting Act

Amber Lyn Durkin
Gerontology
Care Management Workforce Issues: An Analysis of Indiana, Ohio and Pennsylvania

Brooke Renee Dyer
Mechanical Engineering
Additive Manufacturing of Copper Electrodes and Bus Work for Resistance Welding

Janah Salama Emeeshat
Electrical Engineering
Isolated Word Speech Recognition System for Children with Down Syndrome

James Kole Gasior
Chemistry
The Gas-Phase Ligand Exchange of Trivalent Metal B-Diketonates

Aricka Lynn Gates
Mathematics
Professional Members' Perceptions of Proposed Rule Changes in All Star Cheerleading

Taryn Elizabeth Hanna
Environmental Science
Evaluation of Watershed Land Use and Water Quality in Mill Creek, Youngstown, Ohio

Kayla Kristen Jeswald
Creative Writing
Stages of Blue

Roger Dale Juntunen
History
Death of a Fadno: A Short-Lived Musical Instrument of Sami Material Culture

Oscar Kipruto Keino
Chemistry
Studies and Synthesis of Mixed anion-analogs of Manganite Perovskites and Strontium Nitride Fluoride Compounds

Sanjit Khanal
Electrical Engineering
Artificial Intelligence in Power System

Joseph Brian Korchnak
Computing and Information Systems
Implementation of Probabilistic Smart Terrain in Unity 2D game

Krishna Chaitanya Kundeti
Electrical Engineering
The Properties of SiC Barrier Diodes Fabricated With Ti Schottky Contacts

Anthony John Kunovic
Music Jazz Studies
Pat Metheny Plays the Blues

Ashley Nicole Martof
Industrial and Systems Engineering
Analysis of Business Models for the Use of Additive Manufacturing for Maintenance and Sustainment

Susan Renee Maruca
English
Revealing the Erosion of Identity through Class Stratification: The Elusiveness of Sherman Alexie's Authentic Indian

Constance Lousie Massey-Hight
Criminal Justice
Characteristics of the Victims of Domestic Violence

Emily Quinlan Mogg
Criminal Justice
Criminal Behavior in Juveniles with Mental Health and Substance Abuse Issues: What Works?

Eric Myers
Mechanical Engineering
Development and Modeling of Porous Additively Manufactured Ferromagnetic Shape Memory Alloy Using ANSYS Finite Element Software

Ahmad Yousef Ali Omishat
Electrical Engineering
A Real-Time Harmonic Detector Design and Development for Utility Grid

Michael Anthony Pieton
Criminal Justice
The Effectiveness of Capital Punishment in Reducing the Violent Crime Rate

Bhishan Poudel
Engineering CEEGR
Causes of Corrosion in the Bottom Reinforcement of Pier Caps Supporting a Pedestrian Bridge at YSU and Possible Solutions

Alex James Puncekar
Creative Writing
The Bright Garden

Abhijit Sharma Subedi
Engineering CEEGR
Pier Encasement Effect on Headwater Elevation

Sabin Shrestha
Engineering CEEGR
Impact of Future Climate Change on Extreme Flows on a Large Agricultural River Basin: A Case Study of Great Miami River Watershed, Ohio

Sanjay Shrestha
Mechanical Engineering
Wear and Tribo-corrosion Response of Additive Manufactured Ti6Al4V Joint Implants: An Experimental Study

William Ryan Soldan
Creative Writing
In Just the Right Light

Danielle Briann Strong
Industrial and Systems Engineering
Analysis of AM Hub Locations for Hybrid Manufacturing in the United States

Kevin Michael Summerville
Environmental Science
Effectiveness of Amendments and Microbial Treatments on Plant Growth in Urban Garden Soils

Janga Bahadur Thapa
Engineering CEEGR
Trenchless Technologies Survey Questionnaire Data Analysis for North American Municipalities

Muhammad Erfan Uddin
Biological Sciences
Characterization and Quantitation of Collagen-I Oxidation in TGF- β Stimulated Fibroblast Culture

Nishitha Yedla
Computing and Information Systems
An Eye Tracking Study Assessing Code Readability

GREEN TEAM IS CAMPUS CLEAN MACHINE



When the Ohio Department of Natural Resources performed a waste audit of Ohio state colleges in 1999, the results brought bad news for Youngstown State University – the university ranked last in recycling its waste.

All that's changed, however, since YSU teamed up with the Mahoning County Solid Waste District and began devising unique solutions to its recycling problems.

In the years since then, thanks to a YSU Materials Exchange and Recycling Grant, YSU has become a model organization for other institutions looking to incorporate more recycling into their operations.

Grant funding for the recycling operation allows for a Mahoning County employee to work on campus. The benefits of this relationship are two-fold: it helps YSU improve its recycling program while reporting data to the county for state reports.

YSU's recycling program operates daily. Bins are conveniently located in buildings across campus to collect a variety of materials, including paper, plastic containers and surplus scrap metal. Student workers, wearing their distinct jackets, collect the recyclables regularly. The program also provides educational presentations for students in Intro to Environmental Lab classes.

The program sponsors RecycleMania's "Get Caught Green-Handed" event on campus, a competitive recycling tournament involving colleges and universities from across the country.

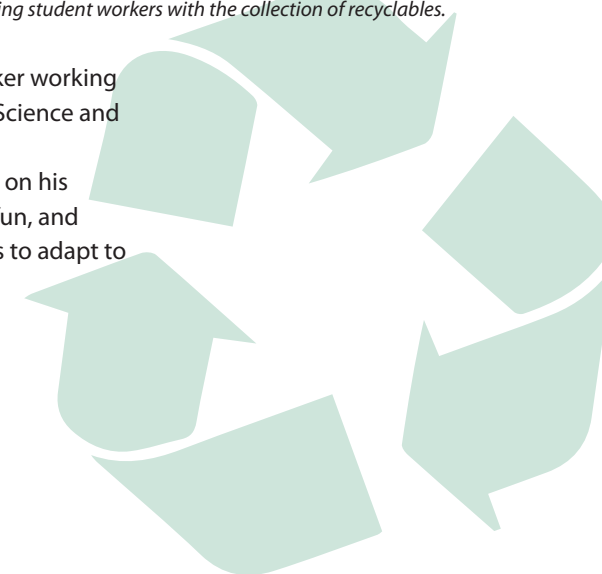
It provides resources for student projects, papers, and presentations, and participates in Earth Day events and other projects run by student organizations every year. When YSU Student Government needed help promoting the water bottle refill stations installed in several buildings on campus recently, the program provided data, statistics, and other information.

Daniel Kuzma, program manager for YSU Materials Exchange and Recycling, joined the program in 2002 as a student worker working on his undergraduate degree. He earned his degree in Environmental Science and was hired full-time after completing a year as a graduate assistant.

He credits his experience both as a student and as staff as influential on his work. "The dialogue that's available on a college campus is beneficial, fun, and challenging," he said. He said his department is always looking for ways to adapt to the changing needs of the campus and the county at large.



Dan Kuzma assisting student workers with the collection of recyclables.



ON THE COVER: Marissa Gorvet, graduate student, utilizes the lab facilities at Ward-Beecher Hall for her research.

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Acknowledgements



Ashley Martof shows third, fourth and fifth graders a metal 3D-printed airplane at America Makes.



DIVERSITY OF SCHOLARSHIP
showcases
**GRADUATE
 STUDENT
 RESEARCH**

Every year during Spring semester, YSU's College of Graduate Studies highlights the research accomplishments of six grad students in an event called the **Diversity of Scholarship**. Any research, special project, performance or other creative work undertaken by a YSU graduate student is eligible.

This annual event highlights the kind of work that students and faculty on campus are engaged in every day, while showcasing that work for the enjoyment of the community at large. The following students' work was featured in this year's event:



Marissa Gorvet

Marissa Gorvet – Gorvet, whose work is focused on the locomotion of tree sloths, said she was eager to share her research. "I'm excited to share my experience and work with the general public, and try to explain something to people who don't know about it," said Gorvet. "My interest in research is what brought me to YSU, and I really wanted to work with mammals." Advised by Dr. Michael Butcher, Gorvet said she has learned new techniques and more about anatomy and physiology since starting her program in August of 2016. She plans to go on to medical school following graduation.



Taylor Phillips

Taylor Phillips – Advised by Dr. Rebecca Curnalia and pursuing a degree in the Interdisciplinary Communication program, Phillips relishes the opportunity to show off her research skills. Her essay, which was inspired by the rhetoric of the 2016 presidential election, is the culmination of a yearlong research project that she began developing as a capstone project as a graduate student in journalism and political science at YSU. "I really like making presentations," Phillips said of the Diversity of Scholarship event. "I worked really hard on this, and I can't wait to share it with the graduate community and YSU."

Ryan Goettsch – Focusing his research on whether a behavior assessment can be used to reduce, eliminate or replace problem behavior in a single-subject study, Goettsch said his experience at YSU has broadened his perspective of the world. "In the Master of Social Work program at YSU, I have also discovered that I have a strong interest in pursuing research," he said. "Being able to present my research at the Diversity of Scholarship is a great honor. I am excited about learning from the other YSU students that will be sharing their research as well." Goettsch is advised by Dr. Andrea Barrick.



Ryan Goettsch

Drew Snyder – As a student with a passion for advocacy and health policy issues, Snyder used the Diversity of Scholarship to present his research regarding how his peers – other physical therapy students – feel about changes currently occurring in the healthcare system. "Medical students have been asked about their views on health policy issues for over thirty years," he said. "To our knowledge, there are no other current studies investigating the beliefs of physical therapy students." Snyder, advised by Dr. Weiqing Ge, believes that understanding others' beliefs is necessary to promoting advocacy. He saw the Diversity of Scholarship event as an opportunity to share his research within the DPT program and with the larger YSU community.

Ashley Martof – Additive manufacturing is Martof's field of study. "I never thought I would go on to get a graduate degree," she confessed, "but with the equipment, research opportunities, and professors available at YSU, I could not pass up the opportunity to broaden my knowledge about additive manufacturing." For Martof, advised by Dr. Brett Conner, the Diversity event was a chance to enrich the minds of others about additive manufacturing and its impact in the aerospace community. "If one person learns something new from my presentation I will feel accomplished. Additive manufacturing is a huge part of Youngstown, and there are so many opportunities at YSU for students who wish to do research."

Nishitha Yedla – An international student from India, Yedla's work with advisor Dr. Bonita Sharif centered on an eye-tracking study to determine the readability of source code, and how that may affect performance in the software development field. "I am from India and being an International student, I always wanted to take part in research to broaden my knowledge and create awareness," said Yedla. "I look forward to presenting my research, and I hope it will help researchers and practitioners to create coding style guides based on these rules."



Above center, Ashley Martof helps with a ribbon cutting for a Sand 3D printer; at right, Ashley with advisor Dr. Brett Conner and fellow student Chris Barrett.



GRAD STUDENT SPOTLIGHT: *Mike Delost, Kyle Myers, & Torrian Pace*

Youngstown State University's College of Graduate Studies alumni continue to excel at pursuing their professional and academic goals. This is evident in the examples set by the following three recent alumni: Mike Delost, Kyle Myers, and Torrian Pace.



Mike Delost

Mike Delost: "After graduating with my BS in Chemistry elsewhere, I was in limbo with what to do next," said Delost. He was seeking experience in chemistry research, a field that interested him but that was out of reach at his small undergraduate institution.

"YSU gave me the opportunity to examine whether I enjoyed research, and I could have access to the best chemical instruments and faculty," he said. "Most Chemistry students don't realize how spoiled they are at YSU. Although considered a regional university, the chemistry facilities are

on par, or even superior, to larger universities' instruments."

He credits YSU, especially his adviser, Dr. Peter Norris, for teaching him to think and analyze like a scientist. Delost also enjoyed his growing independence as a researcher from his first year to his second, and the diversity of the labs.

"It was refreshing and rewarding to meet and become great friends with fellow students from Ghana and Kenya," he said. After completing his graduate degree, Delost went on to the University of Arizona, where he is seeking a PhD. "The two years at YSU gave me the time I needed to evaluate my interests and disinterests in Chemistry and trained me to think like a research scientist," he said.

Kyle Myers: After earning an MS in Chemistry at YSU, Myers opted to continue on and pursued a PhD in Materials Science and Engineering, which he completed in the spring of 2016. Having grown up in Sharpsville, Pa., Myers was familiar with YSU for much of his life. "My high school chemistry teacher and my sister were YSU Chemistry alumni," he said. "They both spoke very highly of the program."

Myers, who waited tables prior to starting graduate school, also appreciated how accessible the program was to him. "I applied to multiple large schools and was accepted to a few, but the lack of available funding steered me into accepting the position at YSU. It was very affordable," he said, "and even better when acquiring teaching and research assistantships."

Like Delost, Myers pointed out resources that were available to him during his education. "The quality of the facilities, equipment, faculty, and professors in the STEM College is truly amazing, considering the size of YSU," he said. "I had no idea that YSU was planning to become one of the best research facilities for 3D printing. The hands-on experience of using, modifying, and fixing all of the equipment has been priceless."



Kyle Myers, in cap and gown at center, celebrates receiving his doctorate degree with, from left: Sal Sanders, Dean of the College of Graduate Studies; Wim Steelant, Dean of Science, Technology, Engineering and Mathematics; Provost Martin Abraham; Associate Professor Pedro Cortes; and YSU President James Tressel.

Myers emphasizes that it was more than the resources at YSU that contributes to his professional success at rpm, a 3d printing and design production company in Avon Lake, Ohio – he also credits the spirit of community in his program as an invaluable part of his education. "I am grateful for my advisors Dr. Tim Wagner and Dr. Pedro Cortes, but the people that meant the most to me were the other graduate students," he said. "We all knew each other's research projects and we would constantly be throwing ideas off each other to help solve problems."



Torrian Pace

Torrian Pace: Unlike Delost and Myers, Pace started at YSU as an undergraduate and decided to pursue a graduate degree in Criminal Justice after completing his bachelor's degree. "I honestly have to say that YSU chose me," he said, "because it was not on my radar."

Recruited to play football as an undergraduate, Pace also became involved with the Student Athletic Advisory Committee, the Emerging Leaders program, the Fellowship of Christian Athletes, and the Presidential Mentors program. "My years at YSU helped me mature mentally, physically, and spiritually into the person I am right now," said Pace, who is now pursuing a PhD in Political Science at the University of Florida.

Pace describes himself as grateful for the individuals and groups he encountered on campus, from the Athletic Department, the Criminal Justice and Forensic Sciences faculty, the Graduate College, Presidential Mentors, the Honors College, and the Center for Student Progress.

"I've always been a goal-oriented individual, but YSU taught me not to settle and to challenge myself," he said. "It made me stronger, positively affecting my choices of employment and education and their outcomes."



TEAM OF VOLUNTEERS HELPS PENGUIN BOWL SUCCEED

"We've done this for so long that it's almost like a family now," said Dr. Ray Beiersdorfer, Distinguished Professor of Geology at Youngstown State University, referring to the small army of students, teachers, volunteers, and faculty that support him in running the Penguin Bowl, a yearly academic competition for area high school students.

Now in its 15th year, the Penguin Bowl is a regional division of the National Ocean Sciences Bowl, externally funded through grants from the Consortium for Ocean Leadership, an ocean advocacy group.

Dr. Beiersdorfer discovered the National Ocean Sciences Bowl program more than 15 years ago while on sabbatical in Colorado. He volunteered in a bowl competition there and was so impressed that he decided to bring the event to the Youngstown area.

The Penguin Bowl competition alternates locations every year between YSU and the Pittsburgh Zoo. Prior to each competition, student participants receive free tickets to museums, zoos, aquariums and other venues, along with free books and other resources to help them prepare for the contest.

The Penguin Bowl can accommodate sixteen teams each year from Ohio, Pennsylvania, Maryland, and Kentucky. Over the years, several schools from the Mahoning and Shenango valleys have placed first, earning the opportunity to compete at the national level. This year's winning Penguin Bowl team came from Centerville High

School in the Dayton area.

Penguin Bowl is organized as a round-robin competition prior to elimination, giving every team a chance to demonstrate their science knowledge. In the past two years, a themed T-shirt design contest was added, giving creative students a chance to use their graphic design abilities.

Even with the competitive nature of the Penguin Bowl, Dr. Beiersdorfer said his priority is to give every participant a positive experience. "It's a rewarding event, regardless of who wins," he said. "I try to make it a great event, a worthwhile and enjoyable time."

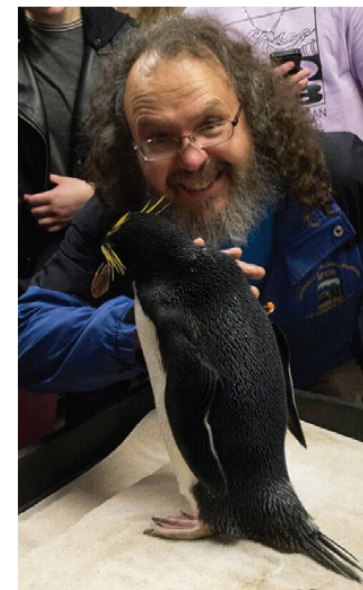
He said the yearly event is made possible by a team of sixty-five volunteers, mostly students and faculty, many from other universities. Every round has a science moderator and a judge – program rules require them to be scientists at the PhD level – while other volunteers serve as rules judges, timekeepers, scorekeepers, and runners.

Dr. Beiersdorfer also credits Margie Marks, the curator of conservation education at the Pittsburgh Zoo, for much of the Penguin Bowl's success.

He said his participation in the Penguin Bowl has expanded his professional interests. Since becoming involved, he has developed an award-winning online oceanography course that was recently a finalist for the YSU distance-learning course of the year.



Penguin Bowl competitors go behind the scenes at the Pittsburgh Zoo during the 2016 event.

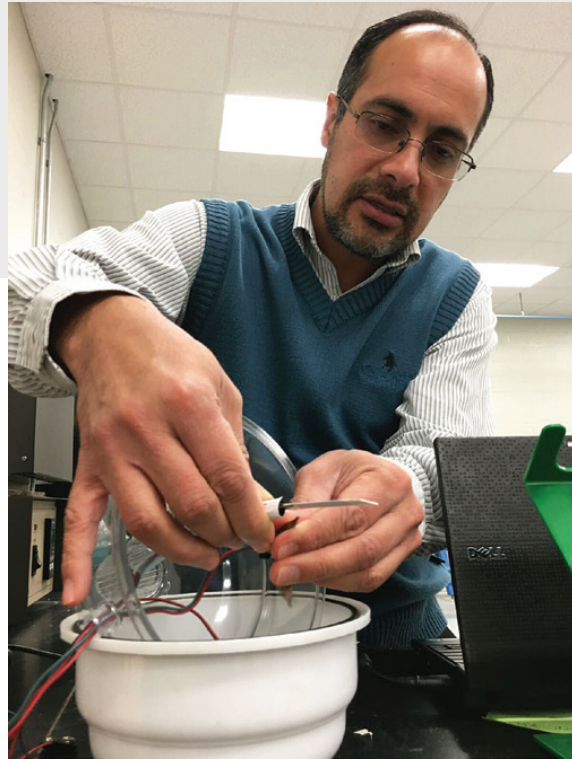


Dr. Ray Beiersdorfer

Photo Credit: Crystal Beiersdorfer.
Penguin Bowl 2016 at Pittsburgh Zoo.

ADDITIVE MANUFACTURING

RESEARCH HAS HEALTH, DEFENSE APPLICATIONS



Dr. Pedro Cortes

"Additive manufacturing is continually trying to keep up with day to day technology changes," said Dr. Pedro Cortes, associate professor in the Civil, Environmental, and Chemical Engineering Department. "The speed at which it has been growing here at YSU has got me really excited."

Dr. Cortes has his hands full with several research projects he is working on with his undergraduate and graduate students, as well as other faculty on campus.

Dr. Cortes is quick to credit others for his success in acquiring research funding.

For example, with the support of Dr. Brett Conner, an associate professor and director of Industrial and Systems Engineering, Dr. Cortes was able to secure a grant from the Ohio Federal Research Network and the University of Dayton Research Labs. This funding is helping to support students working on a project to create continuously reinforced filaments for use in 3D printing, which will have applications in fields ranging from the military to sports car production.

The utilization of biochemical sensors is another field of research that Dr. Cortes is currently engaged in. "What is the functionalization of sensors that can actually detect super-explosives?" he asked, explaining the primary motivation for his research.

In fact, Dr. Cortes is working with one of his PhD students on the detection of PETN, a super explosive material used by terrorist groups. He's also collaborating with Dr. Diana Fagan, professor of Biological Sciences, on material that could detect human blood in clothing for the Army.

"The idea is that the fibers do not detect milk, sweat, orange juice, etc., only blood," Cortes said. "So, if a soldier is injured and unconscious, and the thread in the uniform detect blood, it uses Wi-Fi to send a signal for help."

There are many other applications for this research, he said, if it can be altered to detect to different analytes, or substances. For example, biochemical sensor systems can be adapted to detect hazardous gases created by bacteria, so food poisoning could be detected in spoiled food before distribution.

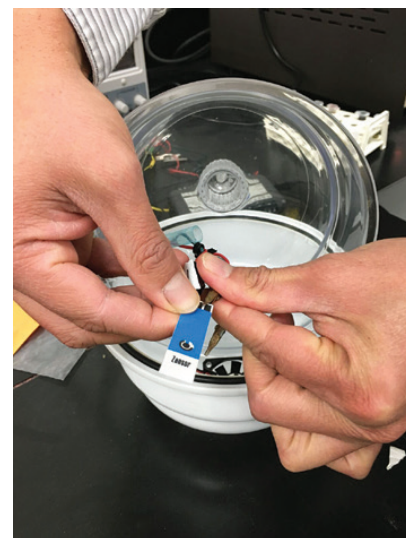
Another possibility: detection of drugs and illicit substances, which would be helpful for drug enforcement agencies. Dr. Cortes has undergraduate students working on the detection of cocaine.

Investigating smart materials and their applications has also been an avenue of his research. Dr. Cortes and his students are trying to develop composite materials that can withstand ballistics and, instead of suffering damage, can recover their mechanical properties following the application of heat. This has many uses in aerospace technology.

"For instance, airplanes have a lot of issues during take-off and landing from debris, hailstorms, birds – you name it," Dr. Cortes said. When planes are damaged, he explained, "they cut a piece and put on a patch," which can compromise the integrity of the material.

He believes the smart material he and his students are studying would work better. "Instead of patching, we could apply localized thermal heat, and the material could come back to its original properties even after an impact."

This shape-memory composite material has been an extension of Dr. Cortes' research at the Wright-Patterson Air Force Base in Dayton, and he hopes to secure future funding to support his students who manufacture, test, characterize, and analyze these materials in the lab.



Dr. Cortes displays part of his research with biochemical sensors.

EVOLUTIONS

in ADDITIVE MANUFACTURING



Dr. Wallace and Industrial Engineering undergraduate Zachary Thompson in the lab.

Dr. Darrell Wallace, associate professor in the Department of Mechanical and Industrial Engineering, didn't realize his career would turn out the way it has. "I came to YSU when it was principally a teaching school," he said. "But it's changed in unexpected ways."

YSU's transition to a manufacturing research institution took Dr. Wallace by surprise, but the change has been a big hit for the university, he says, and for him personally.

Originally from Columbus, Dr. Wallace earned a bachelor's degree in mechanical engineering, working his way through college at a steel manufacturer as an intern. From there, he joined a research group at Ohio State University, earned a master's degree and a PhD in manufacturing.

But he noticed that interest in research was waning. "Manufacturing had been around so long, it seemed boring," he explained. "The technologies are all fairly mature so there wasn't a lot of research funding."

After college, Dr. Wallace was drawn to the Mahoning Valley because of its rich history in industry and its geographic location at the center of the rust belt region. Those features became advantages for him, and for YSU, when

opportunities began to arise for a series of innovation centers and other government-funded projects.

In fact, Dr. Wallace calls these opportunities the result of "two parallel evolutions: first, that manufacturing has come back into vogue, and secondly, that YSU is uniquely seated at the nexus of opportunity, with a few wins under its belt in research development, to help make future development possible."

Dr. Wallace's successes at YSU have been many and varied. For example, in 2011 he received an award from the Wright Center for Sensor Systems Engineering for developing specific types of measurements for manufacturing processes. Soon after, YSU was brought in to help with workforce and educational outreach, and that led to the university's active involvement in other projects.

He was a founding deputy director of America Makes, and that helped bring about a cascade of opportunities for YSU and others in the region. It has also helped form a spirit of cooperation between YSU, other research institutions, and local businesses, such as the Youngstown Business Incubator. Dr. Wallace returned to his full-time faculty position in 2015.

Research in manufacturing continues to develop, so Dr. Wallace keeps discovering and implementing new ideas and projects. He hopes to continue his research for the Defense Logistics Agency, the Appalachian Regional Commission and the state of Ohio's RAPIDS program for the continued teaching and support of vertically integrating education with manufacturing programs in related institutions.

"We have a small team, but this is absolutely a team effort," Dr. Wallace said, quick to point out that his successes are due in part to the hard work of others. "YSU is the interface that makes this all possible."

"YSU IS UNIQUELY SEATED AT THE NEXUS OF OPPORTUNITY..."

– Dr. Darrell Wallace



RESEARCHING THE EFFECTIVENESS OF THE COLOR WHEEL IN AUTISM CLASSROOMS

"Data can be tricky," says Dr. Kathleen Aspiranti, assistant professor in the Counseling, Special Education and School Psychology Department. "Interventions don't work for everyone."

Even with those caveats, her research on the effectiveness of a Color Wheel System as a classroom intervention for children at the Rich Center for Autism has been promising. "It is working, if you ask the teachers," she says.

The study, funded by a university grant used to purchase materials and to support graduate assistants, indicates so far that color wheel interventions in special education classrooms can be effective.

The color wheel intervention has been researched and implemented extensively in general education and private school classrooms, but until now no data was available for its use in special education classrooms. Dr. Aspiranti's research may demonstrate whether the Color Wheel System intervention, also known as CWS, will work for special needs students.

The intervention works for young children in general education classes who need more frequent directions and reminders about classroom behavior. For that reason, Dr. Aspiranti theorized that it should be an ideal intervention for children with differing needs and behaviors.

For the study, she adapted the CWS by using traffic signal props in classrooms. "Any colors would work," Dr. Aspiranti explained, "but the traffic light is recognizable."

In the research classrooms, each color on the traffic light represents a different set of rules. These rules are laid out in a series of visual posters and prompts to help children with autism know what is expected in certain situations. This multimodal system, using both visual and verbal reminders from teachers, aims to help children with different behaviors in a classroom setting.

As part of the study, Dr. Aspiranti has also been collecting data in private school classrooms. She implemented the CWS in three classrooms at the Rich Center on the YSU campus and in three classrooms at St. Charles School in Boardman with higher-functioning students.

The study began in October 2016 and continued until winter break, although teachers were allowed to keep the materials if they planned to continue using the intervention after the conclusion of the study.

Dr. Aspiranti said teachers' enthusiasm for using the intervention was among the most exciting aspects of her research. "Frustration has gone down, excitement has gone up," she said. "Classroom behavior is an issue in schools. This is an intervention that can help with the chaos."

And teachers are not the only ones now enamored with the color-wheel. "Kids like it, too!" she said. "They will remind the teacher to change the wheel if they have to. It's a complex system in place, and they are really getting it."



Dr. Kathleen Aspiranti demonstrates using the traffic light as part of the color wheel intervention.



ENTREPRENEURSHIP TRAINING: HELPING HIGH SCHOOL STUDENTS SELF-DISCOVER

3D printers allow students to rapidly bring their ideas to reality for prototyping or selling.

"Everyone needs to think entrepreneurially," said Julie Michael Smith, the Entrepreneurship Coordinator for the Center for Human Services Development at Youngstown State University.

With funds from an Ohio Youth Entrepreneurship Program Grant, Smith's goal is to develop entrepreneurship programming for high school students in the Youngstown and Warren city school districts.

She aims to develop specific programming for the districts, she said, and also to assess the efficacy of the programming and to create a "toolbox" of that can be adapted for use statewide. The "toolbox" might include enrichment courses, mentorship, internships, externships and other programming that could be implemented according to the needs of each school.

Smith said entrepreneurship programming is useful, not only for high school students but for others as well.

"Entrepreneurship skills are ubiquitous," she said, citing examples. "Tremendously talented artists need to leverage their passion into a livelihood. Doctors may have a goal to save lives, but starting a practice is a business."

Teaching entrepreneurship skills to students can help them discover where their passions and talents are, while also encouraging them to turn their talents into careers. "Entrepreneurship means being free to experiment, take risks, fail, and grow," said Smith.

The programming for each district may look different, based on the unique needs of the district. "There is no one-size-fits-all solution," she said.

Courses may be embedded in career pathways, students could participate in business plans or pitch competitions, or even start their own businesses. This also means creating a

community of practice where teachers can exchange ideas and best practices as well as training so that they can teach entrepreneurship effectively. It might also mean summer enrichment programs, or using informal learning sites such as libraries or business incubators as sources for learning.

YSU's role is to help develop and implement the programming, no matter what shape that programming takes. "These students may be facing dire circumstances," stated Julie Smith. "They may be dealing with poverty or other problems, so their concerns are very grounded in the present."

Entrepreneurship training helps with forward thinking."

Smith is looking forward to getting high school students engaged in learning about entrepreneurial skill sets as life and employability skills. "It's exciting to continue incorporating challenging, interesting, engaging activities for students with different skills to come together and use a collaborative process to a successful conclusion."



Collaboration software and remote technologies are important tools for today's emerging entrepreneurs.

THE IMPACT OF IMPACTS: CREATING COMPETENT COUNSELORS IN THE COMMUNITY



Three IMPACTS participants demonstrating their techniques are, from left, Nicole Ullinsky, William Combs and Stephen Mitchell.

Three faculty members in YSU's Department of Counseling, Special Education and School Psychology successfully authored a grant that could have an important impact in addressing a critical shortage of mental health professionals in Northeast Ohio.

Dr. Jake Protivnak, Dr. Victoria Kress, and Dr. Amy Williams, all Counseling faculty, are using grant funds from the U.S. Department of Health and Human Services to establish IMPACTS, or Inciting a Motivation and Passion for Adolescent Child and Transitional Youth Service.

The program will provide selected graduate student interns with specialized training in addiction treatment, multicultural counseling and supervision, along with iPads and stipends for the duration of their internships. IMPACTS's goal, the grant authors said, is to increase the number of trained counselors available to address the unmet mental health needs of children, adolescents, and transition-aged youth in the local community.

"This opportunity could not be more timely or fortuitous," said William Combs, a graduate student in the YSU Counseling Program and one of the first 11 IMPACT participants.

The grant authors say the need for this program in Northeast Ohio, especially in the Youngstown area, is great. There is a shortage of mental health professionals, and in the local community there is a unique need for counselors trained to deal with problems like drug addiction, unemployment, and poverty.

The IMPACTS program aims to train and support counselors who have a passion for working with those problems and with

the particularly vulnerable populations of children, teenagers, and transitional-aged youths.

In addition to expanding the counseling workforce in Northeast Ohio, the grant provides opportunities for faculty to create online training modules and redevelop courses to support them. Students are encouraged to collaborate in an interdisciplinary way by reaching out to treatment staff like psychologists, social workers, and physical health care professionals. The iPads and apps provided for participants' use may be used in sessions with clients. The continuous investigation of new modes of technology is another benefit to the IMPACTS program.

"I'm really excited that our counseling students will have financial support," said Dr. Jake Protivnak. "For some of them, receiving a stipend is really important. I'm also glad that our program will increase our students' level of training to better serve clients in our community."



Dr. Jake Protivnak addresses his students during class.

PRESIDENT'S GALA TO CREATIVELY SHOWCASE THE TALENTS OF BLISS



Dr. Phyllis Paul, Dean of YSU's College of Creative Arts and Communication, is counting down the days until April 27.

On that date, the college will showcase the broadly diverse talents of its faculty and nearly 100 students in an event titled "Forming Futures: Creative. Reinvigorate. Community." The setting will be the Youngstown Business Incubator's newly refurbished Building No. 5, the former Vindicator building in downtown Youngstown.

Loosely inspired by Eleven Rooms of Proust – a show staged in Chicago's Ravenswood Warehouse in 2000 – the President's Gala will be a unique and nontraditional experience juxtaposing the performance and creation of art against a technological and manufacturing backdrop.

With the renovation of Building No. 5, YBI continues to be a central force in ongoing revitalization efforts in the downtown area, and CCAC's collaboration with YBI to host the Gala makes a strong statement that the arts have a vital role within the community's regenerative efforts.

Dr. Paul says the Gala's theme, "Forming Futures: Creative. Reinvigorate. Community," not only reflects the college's

educational mission but also the possibilities of infusing the downtown community with YSU art, communication, dance, music, and theater events on an ongoing basis – thus serving as additional catalysts for the continuing revitalization.

With a guest list of more than 400, the invitation-only Gala will feature valet parking and a red carpet for attendees. This is the first ever event of its kind for the university and college and will be an interactive journey through art exhibits, radio broadcasts, performances, the artist's creative process, and much more.

Guests will have the opportunity to interact with artists and their art and will also have the pleasure of meeting four distinguished alumni from CCAC – Bill Bodine, Grammy Award winner; Larry Davis, Walt Disney Imagineering executive producer and creative director; Pamela Browner White, senior vice president of Communications, American Board of Internal Medicine; and Donna Downie, actress, director, teacher and YSU adjunct instructor.

"The faculty and students in CCAC are amazingly creative, innovative, and entrepreneurial. It is truly inspiring," said Dr. Paul. She said she's enthusiastic about showcase those talents and grateful to the YBI for hosting the event.

CROSSING THE BRIDGE TO STUDENT SUCCESS



Lori Carlson



Sue Marc-Sracic

"Sometimes it's a mind game," said Lori Carlson.

"Students might think, 'Oh, I'm not good at math. I can't do it.' If we can just get across to them that they can do it, and there's all this help available, we can get them over that hurdle and into more pass rates and more degrees."

To help students succeed in this way, Carlson, an instructor in the Department of Mathematics and Statistics, is working on a joint faculty-staff project with Sue Mark-Sracic, the assistant director of Supplemental Instruction for Student Progress.

The project, called "Bridges to Success" and funded by a grant from the Ohio Higher Learning Commission, will reach out to students who are struggling in required math courses to help increase retention rates.

"We're looking at students who get here unprepared," said Carlson, describing the students likely to be helped most by Bridges to Success. Previously, those students had to take three separate courses to catch up, she said. That's changed. Now they take just one developmental course.

"In the math department, we revamp courses all the time," Carlson said, explaining how faculty are also creating math classes to fit different majors and programs so students get math instruction that supplements the rest of their education.

"It used to be that everyone would do a college algebra course,"

said Carlson. "That was the catch-all general education requirement. But why would a music major need that course?" Instead of making every student take the same subject, the grant provides training for instructors to focus on creating math "pathways" for students with different areas of focus and interest.

The final part of the grant fosters collaboration between the math department and student advising. "This means matching students with appropriate majors," said Carlson, which means changing the way degrees are presented to students, and guiding them toward those that are suited for each student's strengths and abilities.

Once a student declares a major, their performance is evaluated in "milestone" courses that continue to help the students and their advisors make informed decisions regarding the student's progress towards their degree. This involves intrusive advising and providing support and tutoring for struggling students.

Currently, the courses and pathways designed for Bridges to Success are being piloted for four degrees: Exercise Science, Political Science, Psychology, and Information Technology. These programs were chosen because of their size; they were determined to have the most possible benefit from the course redesigns.

If the courses are successful, the next step will be to expand the Bridges to Success project to help more students who would otherwise struggle in their required math classes. "The most exciting part is also the hardest," said Carlson. "If we could really help students achieve a degree, regardless of how good they are at math, that would be exciting."



On Fire with Fire Research

Undergraduate Criminal Justice student Julian Carioti assists with research.

“I’m a little different,” said Susan Clutter, associate professor in the Criminal Justice and Forensic Science Department. “Most forensic scientists are lab chemists. I study fire.”

Ms. Clutter’s fascination with fire investigation research originated, not in the lab, but in the field. After 10 years of experience in crime scene investigation, Clutter began teaching, beginning in Maryland and eventually finding her way to Youngstown State University.

Her research is focused on whether liquid latex and absorbents can be used to help uncover forensic evidence at fire scenes.

Current fire fighting methods can make arson a very challenging area of forensic science, Clutter explained. Soot and fire suppressants can cover up blood spatter, fingerprints, and traces of accelerant; water from fire hoses can wash them away from accessible surfaces. Such evidence may exist at the scene of a fire, usually on the floor, and specially trained fire dogs can be used to sniff out liquid accelerant present in debris. However, there may be issues in sending debris to labs for analysis.

Cars that have been torched after theft, for example, may be too degraded, and the metal is difficult to analyze. “And what if it’s in a concrete porch?” Ms. Clutter asks. “How do you get it out?”

In addition, she said, myths about fire can hinder fire investigation. Historically, many fire investigators were trained only as firefighters and lacked a science background, resulting in confusion between scientific research and rigor and commonly held beliefs and incorrect assumptions about fire.

These problems have helped Ms. Clutter to hone her focus on using materials to absorb trace amounts of evidence at the scene and applying liquid latex to trap and contain

the absorbent materials. She has also experimented with other absorbent materials, including charcoal, talcum powder, sodium bentonite, and zeolite. So far, she has determined that ZEP, a product used to absorb gasoline spills, also helps to absorb the traces of material left at the scene of a fire and works well with liquid latex.

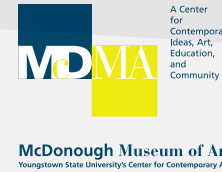
With help from her research assistant Julian Carioti, a Criminal Justice student, and collaboration from the laboratory at the Ohio Fire Academy in Reynoldsburg, Ms. Clutter has been able to demonstrate how to recover traces of accelerants such as gasoline, naphtha, paint thinner, kerosene, butane, brake fluid, xylene, and diesel fluid.

She has accomplished this by spreading a fine layer of ZEP on a concrete surface using a salt shaker and covering it with a layer of liquid latex applied with a spray paint gun. Peeling off the liquid latex after an appropriate amount of time will preserve the traces of accelerant within the ZEP, she said, so that it can be sent to labs for analysis.

Ms. Clutter hopes to attain additional funding to continue her research into more effective fire investigation methods and how to find better, more appropriate evidence of arson than what currently exists. “We’re learning over time that forensic evidence is still present at the scene,” she said. “We just need to know where to look.”



Susan Clutter displays evidence of a footprint on linoleum after a fire.



OHIO ARTS COUNCIL AND YSU SUPPORT MCDONOUGH MUSEUM PROGRAMMING

At the John J. McDonough Center for Contemporary Arts, there’s more going on than exhibiting artwork.

The Center has hosted a number of successful programs for the Mahoning Valley over the years. Outreach projects have ranged from Community Conscience, which involved displaying murals by YSU graphic design students at the Juvenile Justice Center, to opening up 8,000 sq. ft. of gallery space for community use in Dreaming Awake, The Town Hall Project.

“We’re more likely to have a community interested in contemporary art and what artists have to say if we develop a relationship with that community around what matters to them,” said Leslie Brothers, Director of the McDonough. “Whatever programming we do must have the potential for people to care about it and engage with it.”

While the McDonough relies on Youngstown State University for much of its funding, the Center would not be as successful without assistance from the Ohio Arts Council, a state agency that supports the arts in communities across the state. The council makes competitive grants available so that institutions like the McDonough can provide quality arts programming to their communities.

“With each application there is no guarantee that we will be awarded anything,” Brothers said. “It says a lot about this institution that we’ve received funding every year we’ve applied for over 20 years.”

The council’s shift from annual funding to a four-year funded program has been an advantage for the McDonough. “The four year commitment from OAC helps us in our advanced planning for programs and exhibitions,” Brothers stated.

With support from the OAC and YSU, the museum has been able to shift its focus and mission to include a commitment to the community in a very specific way, explains Brothers. “By organizing projects and programs around what matters to people as a foundation for relationship building,” explains Brothers, “we can thereby expand the context for our academic programs.”

In 2014 the McDonough reached out to StoryCorps, inviting the nonprofit to record and chronicle a representative cross-section of community members and their aspirations. The result was Voices of the Valley – 30 conversations recorded over five days. McDonough staff then asked eight community based organizations to come up with a list of 60 community leaders who,

through entrepreneurship, redevelopment, technology, activism, faith and a deep connection to community, shared their stories about transforming the Valley.

Not all of the programming at McDonough is on site. For example, Our Town was a photo project authored by inner-city youth based on their favorite places, havens in Youngstown, and was displayed in a series of billboards along South Avenue.

The John J. McDonough Center for Contemporary Arts has a connection to the community that makes the institution unique as a university museum. “We do more than exhibit artwork. We always have,” Brothers said. With continued support from YSU and agencies like the Ohio Council for the Arts, she hopes the museum’s diverse programming will continue.



McDonough staff from left, Leslie Brothers, Angela DeLucia and Robyn Maas

GAME ON — INTERNATIONAL COLLABORATION IN DIGITAL LITERACY RESEARCH

When Dr. Kristine Blair came to YSU in May 2016 as Dean of the College of Liberal Arts and Social Sciences, she brought along a research project begun nearly two years ago with partners from Soegijapranata Catholic University in Semarang, Indonesia.

“Being a new employee on a campus where you have an existing research project can be a source of anxiety – who do I talk to for what?” Dr. Blair said.

But with support from her new colleagues at YSU, the Dean of CLASS was able to continue her study, testing theories of game creation and collaboration in classrooms, and through it has established a new international research partnership between YSU and Soegijapranata Catholic University.

Dr. Blair came to YSU from Bowling Green State University, where she had been employed for 20 years. She had met her Indonesian research collaborators – Dr. Cecilia Murniati and Dr.

Ridwan Sanjaya – in 2014, and began drafting a grant proposal for the study soon after.

“When I explained what I needed to YSU Provost Abraham, he put me in touch with the right people on campus so that we could get a memorandum of understanding,” said Dr. Blair. “Part of the condition of the grant is for international research collaboration, so it was critical for the institution to partner with someone with whom their university had a memorandum of understanding, so they could facilitate those exchanges.”

With help from YSU’s research community, Dr. Blair was able to take the existing set of IRB protocols and work them into specific informed consent documents for use in an international project.

The project at YSU focused on replicating the study done in Indonesia in order to compare the results.

In fact, Dr. Blair describes every YSU department she worked with to execute this project as “phenomenal – quick and collegial and very helpful.” English department faculty Dr. Jay Gordon, Dr. Diana Awad Scrocco, and Amy Flick helped Dr. Blair to recruit subjects from CLASS and schedule them for two periods of observation. The IT department at YSU set up a program called

RPGMaker Pro in the computer labs, along with guest accounts for the Indonesian researchers to use.

During the observation periods, students were paired up and asked to collaborate on making a game from a template created by Dr. Sanjaya. Afterwards, the student subjects completed surveys and participated in a focus group to determine their feelings and attitudes on topics and pedagogies used in the game collaboration.

Having completed data collection, the research team is now drafting publications and planning to apply for additional grants to expand the project.

Dr. Blair also hopes to attend regional symposia abroad to present the research in the context of technology and teaching.

Coming from a background of rhetoric and composition, Dr. Blair is the editor of the academic journal *Computers and Composition*. This has led her to become interested in conditions that enable or constrain digital literacy acquisition, whether these conditions are economic, cultural, or related to other factors.

Her current research project may demonstrate that different kinds of tools, including games, can foster students’ ability to learn, especially in a collaborative way. She had made a personal and professional commitment to the game creation research, and was pleased when she received the support at YSU that helped make the project successful. “YSU made it possible,” she said.



Dr. Ridwan Sanjaya and Dr. Cecilia Murniati from Soegijapranata Catholic University in Indonesia flank Dr. Kristine Blair, Dean of CLASS at YSU



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