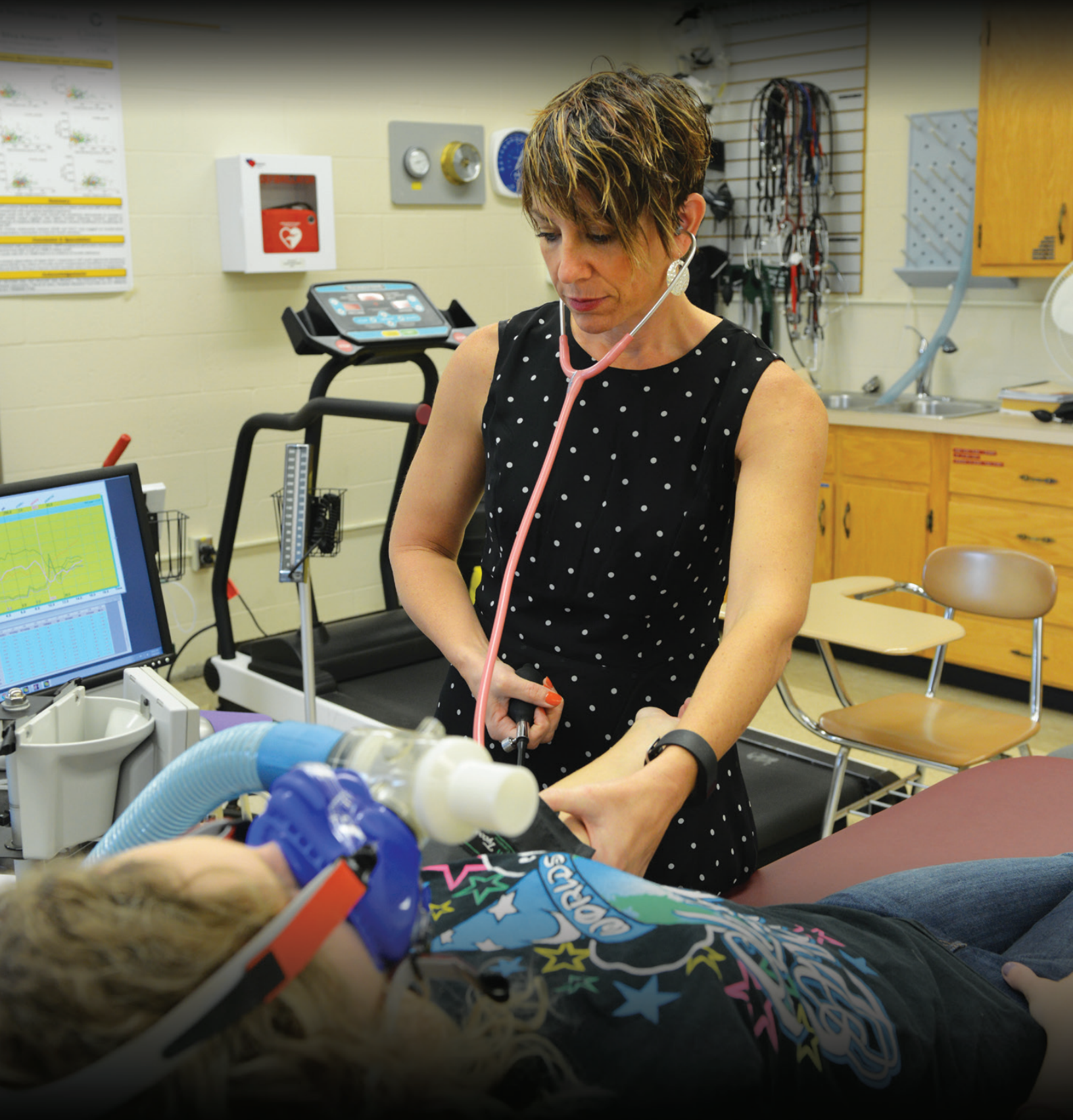


NEW FRONTIERS

Celebrating Outstanding Research and Scholarship



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.

Summer 2016 and Fall 2016 Dissertation Titles

Daniel Frederick Cesene
Educational Leadership

Understanding the Moderators of Adverse Childhood Experiences on Mature Adult Satisfaction and Adjustment

Feroze Khan Kamaluddin Ali
Mohammed Baderuddin

Materials Science and Engineering
Microextrusion 3D-Printing of Solid Oxide Fuel Cells

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

David Joseph Zupsic
Educational Leadership

Exploring the Values of Education: Using Student Viewpoints to Redesign the Educational Structure to Achieve Optimal Experiences

Summer 2016 and Fall 2016 Thesis Titles

Nana Yaa Acheampong
Environmental Science

Correlation Between the Rates and Mortality of Ischemic Heart Disease and Magnesium Concentrations in Ohio Drinking Water

Mohanad Ali Al-Azzawi
Chemistry

Synthesis and Characterization of Perovskite Type Structure

Liseli Jeanette Baich
Industrial and Systems Engineering

Impact of Infill Design on Mechanical Strength and Production Cost in Material Extrusion Based Additive Manufacturing

Kayla Ann Brown
Biology

*Changes in Gene Expression of *Neurospora crassa* in Response to Quinic Acid*

Emmanuel Ramsey Buabeng
Chemistry

Towards the Synthesis of Novel Glycomimetics of N-Acetyl-2-amino-2-deoxy-D-mannopyranose Uronic Acid and Derivatives

Maria Carmella Cadusale
History

Allegiance and Identity: Race and Ethnicity in the Era of Philippine American War

Christopher Novel Copeland
Chemistry

Modified Conditions for Acyl Azides and Carbamate Synthesis

Jessica Marie Crawford
Environmental Science

Understanding Seasonal Environmental Changes in Meander Creek Reservoir Using Diatoms as Indicators of Ecological Change

Johnathan Thomas Dina
Criminal Justice

A Case Study on a Use of Force Review From The City of Warren's Police Department

Lindsey Marie Ferraro
Criminal Justice

Police Stress and Intimate Partner Violence

Lindsey Marie Fisher
History

Not So Revolutionary: The Influence of the American Revolution on Gender

Heather Jasmina Folkwein
Chemistry

The Amidation of Fenofibrate for the Purpose of Aldose Reductase Inhibition and the Novel Synthesis of NADPH Analogs

Anne Leigh Garwig
Creative Writing

Amerdrogynne

Ram Aditya Gullapalli
Industrial and Systems Engineering

Quantifying the Role of Part Design Complexity in Using 3D Sand Printing For Cores and FDM Printing For Patterns

Taryn Elizabeth Hanna
Environmental Science

Evaluation of Watershed Land Use and Water Quality in Mill Creek, Youngstown, Ohio

Katilyn Elisabeth Hartwig
Interdisciplinary Communication

Exploring the Emotional and Cognitive Levels of Uncertainty through Intercultural Communication Intervention

Stephen Phillip Harvey
Music Jazz Studies

Dualities: Exploring Mixed Ensemble Jazz Music Through Analysis and Composition

Jennifer M. Johnson
Criminal Justice

Characteristics of Intimate Partner Violence: Implications on Victimization and Prevalence Rates

Roger Dale Juntunen
History

Death of a Fadno: A Short-Lived Musical Instrument of Sami Material Culture

Leah Renee Kaldy
Environmental Science

Hydrology Sedimentology and Geomorphology as Drivers of Succession vs. Flood Disturbance within Riparian Forests of Middle Order Streams of the Northeast

Oscar Kipruto Keino
Chemistry

Synthesis and Investigation of Novel Manganites Oxyfluorides and Nitrides Fluorides Compounds

Elaine Mackenzie Kelley
History

Leaving a Cultural and Environmental Hoof Print: The Changing Place of the Horse in America and the Western National Parks during the 19th-20th Centuries

Fiona Leah FitzGerald Kelly
English

Waiting for Their Turn to Speak: The Use of Interruption in the Discourse of University Student Organizations

Sepeideh Khavari
Mathematics

Predicting Human and Animal Protein Subcellular Location

Joseph Brian Korchnak
Computing and Information Systems

An Implementation of Probabilistic Smart Terrain in a Dynamic Game

Rainier Tchuvalac Kouajep
Mathematics

A Fungal Spore Classification Using Artificial Neural

Nina Marie Lenkey
Biology

*Utilizing Phage Display Technology to Identify a Peptide Ligand to Bind to Type 8 Capsular Polysaccharide of *Staphylococcus aureus**

Lukas Lenner

Mechanical Engineering

Engine Redesign Utilizing 3D Sand Printing Techniques Resulting in Weight and Fuel Savings

Tyler Joseph Maticic
Computing and Information Systems

Write Optimization on Column Store Using index Method

Joseph John Mihalcy
Chemistry

Formation of Indium-Derived Metal-Organic Frameworks

Emily Quinlan Mogg
Criminal Justice

Juvenile Offenders with Mental Illness and Substance Abuse Issues: Reducing Recidivism

Philip Allen Volpe-Monrean
Interdisciplinary Communication

The Elaboration Likelihood Model and Goldman Sachs

Sai Krishanand Nagavelli

Computing and Information Systems

Improved NANO-CUBE Detection Performance Using a Method of Separate Training of Sample Subsets

Nastaran Niknam

Electrical Engineering

H-Bridge Converter Modeling and Simulations for a Battery Power Management System

Binod Paudel

Civil/Environmental and Chemical Engineering

Determining Material and Geometric Properties of Flat Slab Bridge without Plans

KateLynn Page Pisarcik
Criminal Justice

A Developed Nation and Its Impact on the Death Penalty

Brian Tyler Powell
Computing and Information Systems

Amino Acid Properties Provide Insight to a Protein's Subcellular Location

Monica Victoria Ramunno
Chemistry

Preparation and Characterization of Spinel-based Interpenetrating Phase Composites via Transformation of 3-D Printed Precursor Shapes

William Douglas Rees
Biology

Identifying Peptides that Bind to Human Serum Albumin Using Phage Display for the Development of Sensors that Detect Injury in Military Personnel

Muhammad Qasim Riaz
Mechanical Engineering

Influence of biochemical environments on surface fatigue of additive manufactured Ti-6Al-4V

Michelle Elizabeth Ricchiuti
Biology

*Identification of an ampicillin regulation gene in *Stenotrophomonas maltophilia* ORO2*

Sanjay Shrestha
Mechanical Engineering

Microstructure and tribo-corrosion response of additive manufactured Ti-6Al-4V joint implants

Shobha Kanta Subedi
Civil/Environmental and Chemical Engineering

Determining Load Bearing Capacity of Flat Slab Bridges Without Plans

Yonatan Abebe Tadesse
Electrical Engineering

The Electromagnetic Simulation of Birdcage Coil for MRI Based on FEM Design

Muhammad Erfan Uddin
Biology

Characterization and Quantitation of Collagen-I Oxidation in TGF-Beta Stimulated Fibroblast Culture

Yener Ulus
Biology

Phytoremediation of Lead Contaminated Soil from an Abandoned Urban Lot

Jamison Paul VanLoocke
English

The Influence of Spacing on Reading Comprehension

Nicole Anastasia Yozwiak
Gerontology

Systematic Review on Long Term Care Models

Jordan A Zaluski
Chemistry

Improved Synthesis of Bis (2,2,2-trifluoroethyl) Phosphono Esters

DaVena Zivkovic
Chemistry

Enzymatic Characterization of Aldose Reductase and Its Inhibitors

ON THE COVER: Dr. Sara Michaliszyn center, with Taylor R. Demyan, undergraduate Human Resource Management student



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BUILDING CONNECTIONS BETWEEN COLLEGE AND COMMUNITY

A Collaborative Initiative between YSU and the Midlothian Free Health Clinic

■ “Let me tell you – exercise *is* medicine,” stated Dr. Sara Fleet Michaliszyn, the assistant professor of Human Performance and Exercise Science in the Bitonte College of Health and Human Services. Michaliszyn is leading the way in a collaborative research effort between Youngstown State University and the Midlothian Free Health Clinic to demonstrate that *linking care* – making diet and exercise expertise more available to individuals – can lead to better health outcomes in the Mahoning Valley. Together with Dr. Jeanine Mincher, associate professor in Dietetics, and Jim Benedict, an instructor in Physical Therapy, Dr. Michaliszyn is attempting to accomplish this thanks to a generous grant from the Western Reserve Health Foundation.

“We live in an obesogenic society,” Dr. Michaliszyn explained, “which basically means we live in a very energy-promoting, but not a very energy-using, way.” This can have a negative effect on community health, as diet and physical activity play a tremendous role in preventing and managing medical conditions and chronic diseases. The problem, as explained by Dr. Michaliszyn, is not that there is a lack of knowledge about the importance of diet and exercise. Rather, it is that these are important facets of health care that are not being included in everyday practice.

The medical system currently relies on acute symptom-driven care, and many non-communicable diseases, like obesity and type 2 diabetes, require the most labor-intensive treatments. The problem lies with providing patients with education about the right kind of diet and exercise for them as individuals; without linked care, that expertise can be hard to find. Physicians often have an enormous amount to do in the little time they get to see their patients, and they may not have time to ask for specific details about a patient’s diet and physical activity level. “Even if your physician asks, they do not have the same expertise as a dietitian or exercise physiologist,” Dr. Michaliszyn stated. Physicians are further faced with trying to find the qualified expertise in the community that they can trust to provide their patients with the proper education about diet and physical activity specific to that patient’s health care needs.


This is what has drawn Dr. Michaliszyn towards this research. “Can we build a trusting relationship between us and the physicians and link that patient with appropriate treatments?” she asked, referring to the diet and physical activity program that they are providing for free at the Midlothian clinic. “Once they engage in the program, the next question is, do they adhere to it?”

Michaliszyn’s research does not only impact the patients participating. She points out that it is student-driven; students are



Dr. Michaliszyn, pictured above right, assesses blood pressure of Tayler Demyan, Human Resource Management student.

serving the community under faculty direction, and learning about collaborative, interdisciplinary clinical research in the process. This research is also being used to develop a Health Risk Assessment, a process of identifying the recommended preventative services and follow-up treatments for patients. Through the partnership with the Midlothian Free Health Clinic, Michaliszyn hopes to create a “bridge of trust” with both patients and physicians in order to better provide coordinated care.

Their work has also expanded beyond the funded research grant. Respiratory care and social work professors and students have enlisted their services. “The Bitonte College of Health and Human Services is in a unique position to promote health and well-being in a coordinated fashion,” Michaliszyn added. Thanks to the Midlothian Free Health Clinic and the Western Reserve Health Foundation, “YSU can help provide care in an integrated effort.” 

Chemistry Professor Cleans Up with Provisional Patent

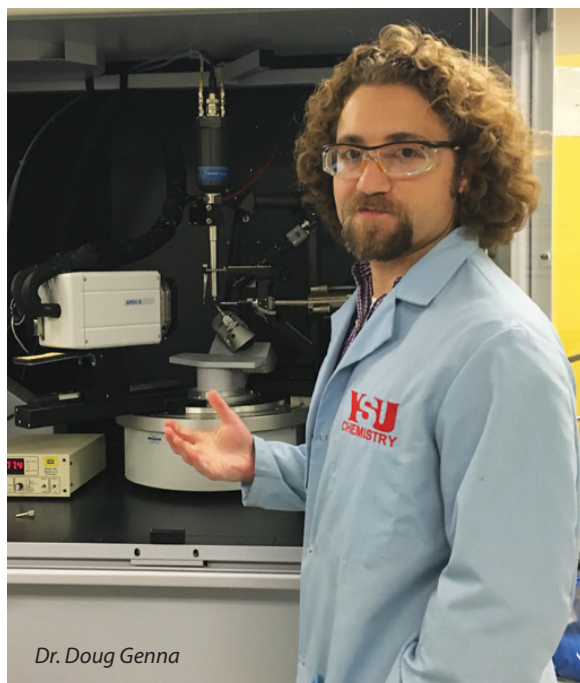
■ “Our water contains all kinds of contaminants,” Dr. Doug Genna, assistant professor of Chemistry, said. He opened a PowerPoint presentation and pointed out a few examples on a slide; many are antibiotics and other pharmaceuticals. When many people think of clean drinking water, what comes to mind are microbes and viruses, not these. However, metabolized forms of medications and hormones – many given to people, others given to livestock – have entered the water supply in developed nations. “It’s a big problem!” Dr. Genna exclaimed.

In fact, contaminated water is a worldwide problem. The World Health Organization (WHO) published a technical report in 2012 regarding the concern of pharmaceuticals in drinking water, and the United Nations has identified chemical contaminants as an emerging issue. While it has not been widely studied, metabolized medicines may be to blame for the growing occurrences of feminization of male fish due to endocrine disruption. This has been occurring in the water supplies of developed parts of the world, including the United States, Europe and Japan.

Since Dr. Genna joined the Youngstown State University faculty in August 2014, he and a small team of students have been making strides in identifying this problem in the hopes of finding a solution. Dr. Genna and his undergraduate student, Mariah DeFuria, have filed a provisional patent for purifying water systems. It’s been a long and strange road to this goal. “When we started I was not interested in water purification,” Dr. Genna admitted. Ironically, he was trying to come up with a Teflon-like material to protect water-sensitive compounds from water. However, he encountered an article that described the water contamination issue, and he realized his research could be put towards cleaning up water from a chemical approach. Now his team is trying to remove water-soluble compounds from water.

Current water purification does not address removing metabolized hormones and antibiotics from the water supply. Modern research efforts focus on chemically modifying the contaminant in order to fit removal into current methods, whereas Genna’s approach focuses on removing the contaminant as-is, without chemical modification.

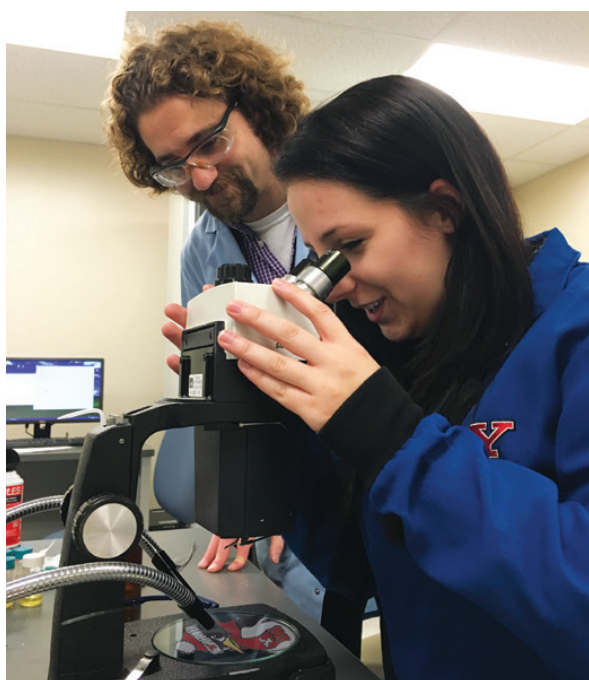
The fluorinated material he and his student team have come up with for this provisional patent suffers from stability issues, but they are working on a second-generation material that will perform better. He hopes that his research will eventually lead to more discoveries with additional profound benefits. Water can also be contaminated with polycyclic aromatic hydrocarbons – runoff from car combustion and asphalt runoff that Dr. Genna characterized



Dr. Doug Genna

as “industrial junk” – as well as heavy metals. “Every class of contaminants should require a different interaction with its adsorbent,” he said. “Our hope is that we can come up with a whole fleet of materials designed for the upcoming contaminants.”

“As a community, we should be engaged in this problem,” Dr. Genna said. The YSU community, fortunately, has engaged thanks to Dr. Genna’s work. All of the instrumentation and characterization for this project were done on campus. And, Dr. Genna added, he is always happy to have help: “We have a lot of really talented students here.”



Dr. Genna assists graduate student Sara Sprinter in screening new frameworks using the light microscope.

Angie Cameron assists after-school students in literacy and mathematics.



AFTER-SCHOOL PROGRAMS: AN INVESTMENT IN THE FUTURE



Angie Cameron

■ “I’m a lifelong learner,” said Angie Cameron, Director of the Center for Human Services Development at Youngstown State University, “and I also feel that I’m a hands-on learner. I know I don’t learn well when I’m lectured to.” Perhaps this is why Cameron was inspired to work in the field of education in a way that extends beyond the classroom. Currently, Cameron oversees four after-school programs at area schools with help from 21st Century Community Learning Center grants. These competitive


grants originate with the Federal Department of Education, stemming from the No Child Left Behind Act. They are distributed to the Ohio Department of Education, which then sets its own requirements for awarding the grants. YSU has four of these grants and collaborates with local school districts to facilitate their after-school learning centers.

Local elementary schools in East Liverpool, Campbell, Brookfield and, most recently, Liberty host Cameron’s learning center programs at their sites. The programs provide at least 15 hours a week of programming and are open to students identified by the school districts, based on socioeconomic status and academic needs, as those who might benefit from the program. “Students who are failing, who don’t have very good test scores, they just might be struggling for some concepts,” Cameron noted. She also pointed out that each program has open enrollment. There may be anywhere from 50 to 70 students enrolled at each site. “They can enroll at any time; they can leave at any time,” she

said. “But, of course, the longer they engage, the more they get out of the program.”

Each program utilizes a very strong literacy component and a math component, but they also consider what the children are learning during the school day. “We adapt to school needs,” Cameron added, “but at the same time offer students something that’s outside of the box.” Cameron, who also teaches in the Counseling/Special Ed/School Psychology department at Youngstown State, noted that when working with young students, consistency is often the key to success. Each program is run by YSU staff on site and follows its own schedule, including time to work on homework, literacy and math activities with academic instruction, enrichment pieces for social and emotional learning, and, of course, snacks. But the main focus of these programs is in providing student support. “We try to keep consistency with regard to what they’re learning in school,” she stated. “We want to help the districts. They’re expected to do so many things.”

Angie Cameron has been working with 21st Century grants and programs since 2003, beginning with the Youngstown public schools. She brought her expertise to YSU in April 2016 and immediately began working on obtaining a new grant for a local school district. That month, she met with the principal of Liberty’s elementary school to write the grant proposal together. Three months later, they learned they had been awarded a grant to start a new program at E.J. Blott Elementary this fall.

When asked about the impact these programs have on the community, Cameron clearly considers the long-term positive effects they will have. “There’s that old adage that children are the future,” said Cameron, “but the truth is, we have to invest in them if we want them to invest in learning.” 

ADVANCED MANUFACTURING: ADVANCING RESEARCH AND OPPORTUNITIES WITH THE AIR FORCE

■ “Airplanes are like people,” said Dr. Brett Conner, associate professor of Industrial and Systems Engineering at Youngstown State University. “After 30 or 40 years, they start sagging.” Spare parts from the time of production are difficult to find, and they don’t always fit or work correctly in airplanes, Dr. Conner explained. “The body of the airplane may shift from the manufacturer’s drawing.”

However, using advanced manufacturing techniques like reverse engineering, 3-D scanning, and 3-D printing, spare parts and repair tooling can be created to fit individual problems. In order to accomplish this, Dr. Conner is working with a generous project opportunity from the Air Force Research Laboratory. This project is called Maturation of Advanced Manufacturing for Low-cost Sustainment, or MAMLS, for short.

Youngstown State University has several direct sub-awardees including companies like Raytheon and Lockheed Martin as well as other universities. “It’s a big team,” said Dr. Conner. “A lot of responsibilities.” YSU is an equal partner in research and development. Dr. Conner manages YSU’s technical activities and coordinates with the other principal investigators. The Youngstown Business Incubator and America Makes have also lent their support to the project. Since the project came under contract in March 2016, representatives from the Air Force and other project partners have been visiting campus for a gate review process. This is done to explain the technology, the technical approach, and planned outcomes for approval.

The other goal of this project is to develop and demonstrate technologies that can be used in advanced manufacturing. In creating these spare parts for airplanes, YSU’s researchers will also be creating a body of technical knowledge that can be used in the future. The process of 3-D printing parts needs to be qualified and certified. This is to be sure the parts are acceptable for use in airplanes. As the processes become more acceptable, advanced manufacturing can be used for more parts and more applications.

The possible impact of this research can be seen locally. Through this project, YSU is building a relationship with the local Air Force Unit, the 910th Airlift Wing at the Youngstown Air Reserve Station in Vienna. Dr. Conner also stated that this is a terrific opportunity for students to work with the Air Force, aerospace companies and local businesses. “We have a lot of advanced technologies that we’re working with on this project,” said Dr. Conner, “and we have several new pieces of equipment that we’ve acquired that we intend to be using for this project.”

MAMLS also affects Dr. Conner on a personal level “I’m an Air Force veteran,” he said, “and I think it’s a great opportunity to give back to the service that’s given so much to me.” ✈



Dr. Brett Conner, PI, showing several 3D items printed in YSU's advanced manufacturing laboratories.

Connecting Past and Present: CREATING HISTORICAL DISPLAYS FOR DOMINION EAST OHIO



Dr. Martha Pallante, left, with Katie May, project manager for the Ritenour Group.

■ “I like doing exhibits,” said Dr. Donna DeBlasio, Professor of History. “I like to see my script come to life – that’s just fun! I love when it goes to design. I get to see my stuff on a page – and then you see it become.” Dr. DeBlasio’s enthusiasm is apparent in the work she does. Even though she was hired by Youngstown State University in 1999, some of the exhibits she created as a museum manager are still on display. “And now I get to teach what I used to do for a living!” she declared. Now, because of a sponsored service agreement with Dominion East Ohio, Dr. DeBlasio and her students have a chance to work on a permanent historical display together.

The sponsored service agreement has allowed Dr. DeBlasio to hire a graduate student, Carmela Cadusale, to create an exhibit for Dominion East Ohio’s new employee training center, while Dr. DeBlasio and Dr. Martha Pallante, chair of the History department, are overseeing the project. The facility, located in Boston Heights, is slated to open in December 2016, and will feature this display prominently by the building entrances. “I think it’s a great idea that they thought it was important enough to talk about their history for their employees,” Dr. DeBlasio stated, “and I’m glad they came to us – museum professionals – to do the museum itself.” Dominion East Ohio, which has over a century of history, provided a variety of artifacts to be featured in the display, including a photograph of the first house it serviced, record books, gas curling irons, and baseball uniforms and trophies from company teams.

The process to create a museum exhibit can be quite intense, as Dr. DeBlasio describes, especially considering the multitude of history that Dominion East Ohio has offered for the display. The first task is to come up with an exhibit script to lay out what the panels, labels and other writing in the exhibit should say. This involves a lot of research and writing as well as sorting through artifacts and considering their placement in the display. “Our job is to make sure that it’s in the right format and that it says what they want it to say,” Dr. DeBlasio said. This can be challenging;

the script cannot be dense or technical, in order to be accessible and engaging to its audience. “We have to make sure it’s understandable to a wide variety of people,” said Dr. DeBlasio.

Dr. DeBlasio has also enjoyed working with Dominion East Ohio on this project. “It’s been a good relationship with them,” she said. “They’ve been very supportive.” Looking towards the future, she is optimistic that this partnership will open the door to new and different things for the department. “We’ve done a lot of temporary exhibits, but this is the first time we’re doing a full-blown permanent exhibit for a client,” she said. “It’s a good idea, and hopefully it will lead to more opportunities for us.”



Pictured from left, Carmela Cadusale, YSU graduate student and AmeriCorp service member; Scott Yant, pictured at center, is manager of gas safety and training with Dominion East Ohio; at right is Tracy Stevens, external affairs manager with Dominion East Ohio.



PROGRAMS AND RESEARCH GRANTS KEEP NURSING DEPARTMENT BUSY

■ The office of the department of nursing in Cushwa Hall was bustling. Faculty and staff circulated through the space, offering help to swarms of students turning in or picking up assignments. And it's no wonder the place was busy; the department serves nearly 450 nursing students at Youngstown State University. Dr.

Nancy Wagner, professor and chair, thrives in this demanding environment. In fact, she is committed to increasing enrollment and diversity in the department and in the nursing workforce while maintaining excellence with the help of several grants.

The Nurse Education Grant Program, for example, has provided the nursing department a generous grant from the Ohio Board of Nursing to increase enrollment in the RN-BSN completion program. The ultimate goal of this program is to boost the number of RNs with bachelor's degrees in the workforce.

Youngstown State has used this grant to create an RN-BSN completion program with an all-online format for nursing courses. This provides a seamless transition for RNs to become BSNs. The grant has also helped promote the program by providing resources for advertising through billboards and a digital campaign, and to hire Laura Robich to work with the nursing faculty coordinator, Molly Roche. Dr. Wagner had set a goal of increasing the program's online enrollment at least 25%. The actual increase in Fall 2016 enrollment was 100%. "We're also considering another entry point in spring due to interest," Dr. Wagner said.

The American Association of Colleges of Nursing and the Arnold P. Gold Foundation have taken notice of the nursing department as well. A grant from these two organizations helped provide the sophomore nursing students, starting clinicals, with a white-coat ceremony last January to symbolize the humanism and care that they will devote to their patients. Dr. Wagner stated, "This is a huge support from a prestigious organization." The white coat ceremony will be maintained for all future classes.

Dr. Wagner and Dr. Amy Weaver have also received a program/research grant from the Eastern Ohio Area Health Education Center for "Nursing Success," a program to recruit high school students into nursing and other health professions. To accomplish this, they have coordinated activities in the nursing labs for selected students from the Youngstown Early College, as well as invited speakers to discuss future careers. This program

helps underserved student populations, including minorities, find out about opportunities in the medical and nursing fields. "We need a more diverse workforce to meet the needs of a diverse patient population," said Dr. Wagner.

Dr. Wagner is also excited about a grant the department has received from the James and Coralie Centofanti Center for Health and Welfare for Vulnerable Populations through Dean Joseph Mosca's office to perform a pilot study, "Social Support of Pregnant and Parenting Women." This grant allows four new nursing faculty members – Sheila Blank, Laura Calcagni, Lori Fusco and Nicole Kent-Strollo – to study satisfaction with available support programs to help ensure successful pregnancy outcomes in an in-depth way. The idea for this study was jumpstarted during their new faculty orientation, when they realized they had a similar interest in vulnerable populations and women's health. By partnering with the Resource Mothers program at Mercy Health's St. Elizabeth Youngstown

Hospital, the YSU faculty are able to conduct research at different points in the enrollee's pregnancies.

With a number of active grants, the nursing department at Youngstown State is well-positioned to make a positive impact on the future. This will have far-reaching effects both in the lives of its students and their patients. ▼



Jaquilia Jones and Aunistti Calhoun, Early College students, learn how to take blood pressures, a planned activity in the Nursing Success program.

"We need a more diverse workforce to meet the needs of a diverse patient population."

Dr. Nancy Wagner



Maximum Impact, Maximum Reward: An Innovative **INPLACE** Plan for Youngstown

■ “Why is it that urban planning is happening, and public art happens, but they don’t have any connection within the same community?” asked Leslie Brothers, director of the John J. McDonough Museum of Art. It’s this question, in part, that drives the INPLACE project, made possible from a generous Our Town grant from the National Endowment for the Arts. In fact, it is the largest grant that Youngstown State University has received from the NEA, and three of the project leaders – including financial manager Dominic Marchionda and educator R.J. Thompson – have been working to realize the project by July of 2017, creating a model where art is woven into the city planning process instead of being commissioned separately.

The grant proposal was initiated by Dominic Marchionda, City University Planner, and R.J. Thompson, assistant professor of Graphic + Interactive Design. Leslie Brothers helped coauthor the grant, bringing with her 15 years of experience organizing community-based programs. The proposal won the maximum award for 2016.

INPLACE, which stands for Innovative Plan for Leveraging Arts Through Community Engagement, is where urban planning meets community involvement for the production of public art that is meaningful to that community. The project has brought together a diverse group of people – urban planners, art professionals, and even middle school students – to work collaboratively on addressing five community needs: wayfinding, mobility and parking, lighting, technology and green infrastructure. Brothers referred to these project participants as “citizen artists.”

Marchionda recognized the diversity of participants as one of the most exciting parts of the project. “The Mahoning Valley has had difficulty retaining and attracting talent as a result of ill-effects of post-industrial decline, such as significant job and population loss,” he said. “INPLACE has had success engaging and encouraging the next generation to take ownership of their municipal systems. “The expertise offered by the community over of dozens of meetings and several team-submitted project proposals has been staggering. “We can create tangible products that show the public the compounding effect of well-coordinated planning and action.”

INPLACE provides involvement opportunities for Youngstown State University students as well. Thompson’s Youngstown Design Works students are developing research ideas, aligning faculty curricula and creating tangible products for the community. This gives them real-world professional experience with small businesses, sole proprietors and nonprofits prior to graduation. **Y**



Pictured left to right: Quilian Riano (Brooklyn-based architect and designer), Dominic Marchionda and Leslie Brothers (YSU inPlace administrators), Tony Armeni (local welder and artist), R.J. Thompson (inPlace administrator), and Terry Schwarz (executive director of the Cleveland Urban Design Collaborative).

Critical Thinking: Teaching a Necessary Skill Online



Dr. Mike Raulin

■ “Challenges are the fun part of research,” claimed Dr. Mike Raulin, professor of Psychology. “If you can fail, it makes the successes much more fun.” Dr. Raulin referred to his work on critical thinking, a key component in education that is widely known, yet is strangely absent from current literature. “Everyone agrees it’s important,” said Dr. Raulin, “but what I discovered is that almost no one defines it.” Misunderstandings can make critical thinking a difficult topic to

approach. Dr. Raulin maintained that critical thinking is a skill that can be taught online, and he is using a grant from the Association for Psychological Science to facilitate this.

Dr. Raulin compared the use of critical thinking to using a cookbook – there is a difference between following a recipe and understanding how a dish is created. While following a set of procedures may save time and work, it does not require any critical analysis and so does not promote more complex understanding. “This project is to essentially teach critical thinking the way philosophers have done it,” Dr. Raulin said.

Dr. Raulin’s goal is to have ten 15-minute modules available online by the end of the calendar year. He anticipates having at least 24 modules total. These modules will be hosted by Youngstown State but will be available for anyone to access anonymously. These modules will emphasize principles instead of memorization and rely heavily on examples rather than abstract concepts. Using online course modules will allow Dr. Raulin to see how users react to different parts of the course. “Since this grant is for developing curriculum materials online,” Dr. Raulin stated, “we can gather data about its use so we can see the results.” Because there is so little data on critical thinking, over time Dr. Raulin hopes this will provide valuable insight.

According to Dr. Raulin, his modules will be geared towards mid-level college students who are learning to do research in psychology, but since they are open to anyone, he hopes that more people will try it. “Critical thinking can be integrated into curricula at all levels of education,” Dr. Raulin said. Now that the curriculum of critical thinking can be introduced to a wider audience, it can show people how to develop techniques and methods from their own understanding. **Y**

A BRIDGE TO ACADEMIC SUCCESS FOR MINORITY STUDENTS

■ Mike Beverly, a Youngstown State alum, had always known he wanted to work in higher education. When he saw a job posting for an academic coach nearly 15 years ago, he felt it was a perfect fit for him. Now, as the senior coordinator of the Center for



Mike Beverly

Student Progress, he is committed to extending his success to current and future students. Every year, thanks to a grant from the Raymond John Wean Foundation, Beverly facilitates the Summer Bridge program, designed to help first-year minority students succeed at Youngstown State University.

As a long-time academic coach, Beverly knows first-hand how difficult it can be for many students to complete college. “We have to acknowledge what they’re thinking, how they’re feeling,” Beverly stated. Incoming students face a variety of obstacles, from interior struggles like depression, to exterior pressures like work and family responsibilities. These can make it challenging to succeed academically, as well as stay in school.

The Summer Bridge process begins in March every year, when minority students who have been accepted to YSU receive

invitations to apply. An interview process, led in part by graduate assistant Linda Noday, is used to select eligible students who would benefit from Summer Bridge. The program this year took place during the last week in July, and the participating students had the opportunity to live on campus for the week. The incoming students attended college and study skills classes in the morning and workshops on utilizing campus resources in the afternoons. The Summer Bridge program develops and expands every year; most years previously have had 25 participants, but this year the program accommodated 34 students.

During the academic year, Summer Bridge participants transition to Bridge and Beyond, in which Mike Beverly meets with them once a week to address any of their questions or concerns. “It’s like seeing a light bulb go off,” Beverly said. “You see in them the hunger for education and learning. The best part is seeing students graduate and become successful.” In fact, Beverly has the numbers to prove just how successful the Summer Bridge program has become. Every year the program is assessed, and the cohorts are tracked. Minority students who participate in Summer Bridge have a higher rate of retention and graduation than those that do not participate. The numbers are comparable to the retention and graduation rates of the student population at large.

What motivates Mike Beverly? “I want students to understand that they’re just as capable as anyone else,” he said. “It doesn’t matter what background you come from.” He’s so committed to this initiative that he has sacrificed his summer vacation to prove it, even while he’s busy with back-to-back appointments during the school year. “I sleep well at night,” said Beverly. “It’s a good sleep.” 🦋

The Eyes Have It:

Using Eye-Tracking Technology in Computer Science Research



■ The coveted and prestigious National Science Foundation CAREER Awards only go to deserving junior faculty who demonstrate a commitment to education and research. Dr. Bonita Sharif, Assistant Professor in the Department of Computer Science and Information Systems at Youngstown State University, was one such recent recipient. How did it feel to get the award? “Awesome,” said Dr. Sharif. “They’ve given me what I need to get my research done!” Because of this award, Dr. Sharif has been able to come up with a sustainable five-year research plan to empower the software engineering field through eye-tracking technology. “It is an honor to be given this opportunity to make an impact in the field,” Dr. Sharif continued. “It’s seeing my long-term plans turned into reality.”

Dr. Sharif’s interest in the topic began when she was a graduate student in 2006, but it wasn’t until she was hired at YSU in 2011

that she was really able to delve into it. Dr. Sharif’s end goal is to use eye-tracking observations to build software tools that will provide better support for developers. “We have a lot of open problems in software engineering,” Dr. Sharif explained. “For example, how do we better summarize code? How do we improve and tailor code recommendations to developers? How do we make software traceability effortless?”

These are all questions Dr. Sharif thinks can be answered by using eye tracking to investigate what developers are looking at while they write and debug code. “Current tools for doing these are inadequate, as they do not focus on the human aspect,” she said. But eye-tracking can be used to document eye input and help develop more accurate tools to be used in software engineering tasks. For instance, eye-tracking can be used to track how long developers are fixated on certain sections of code, and that data can then be used to gauge difficulty or importance.

TEACHING IS A TWO-WAY STREET

■ “There is so much you learn in your first three years of teaching,” said Dr. Mary LaVine, assistant professor in the Teacher Education department. “An educator’s badge of courage is that we don’t think we’re doing anything special, but teachers – they are!” This is the sentiment behind Dr. LaVine’s newest endeavor, made possible by the Dean’s Compact Grant for Students with Exceptionalities. Through this grant, Dr. LaVine is developing a clinical partnership between the Beeghly College of Education and Campbell schools in order to increase student learning. In doing so, Dr. LaVine is also building relationships between Youngstown State University teacher candidates and current teachers in the Campbell school district.



Dr. Mary LaVine, with undergraduate research assistant Wade Prueitt, observing classroom presentations.


The idea is this: each of YSU’s participating pre-clinical students will be matched with a teacher with whom they will be able to build a relationship over the course of several weeks in the fall. In the spring the student will be able to continue student-teaching with that teacher, creating a year-long opportunity in which the teacher candidate can foster relationships with both the teacher and students throughout the year. “The year-long experience is so beneficial,” added Dr. Marcia Matanin, chair of Teacher Education.

The program is even designed so that teachers at Campbell can participate even without being partnered with a YSU student. The teachers are invited to come to campus for professional

development talks and events. The information received during this professional development opportunity would be meaningful to them, and information such how to utilize a Google classroom, can be absorbed and implemented in their classrooms. In return, these teachers will be sharing their own experiences regarding topics like classroom management and ethics.


The program has been well received by the Campbell schools. Dr. LaVine set out with a goal of enrolling six teachers to participate and now has involvement from 18 teachers from a variety of grade levels. “If it all goes well, I see us

increasing the number of teachers who want to participate,” said Dr. LaVine.

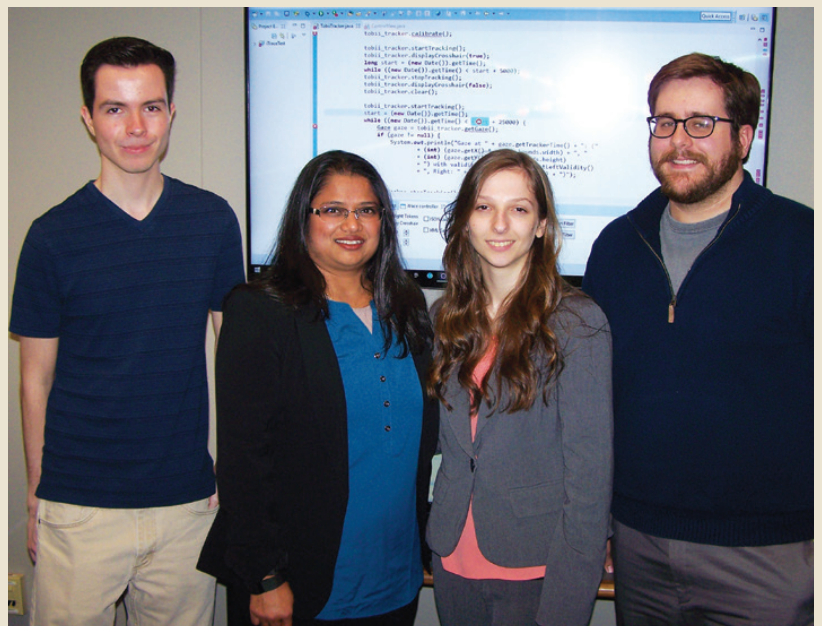
The ultimate goal of this program is to develop modules to build this sustainable partnership so that other institutions of higher learning across the state will be able to replicate it and adapt it to their needs. Dr. LaVine emphasized that teaching in this program is a two-way street: “Everyone has the opportunity to learn from one another.” 

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Of course, Dr. Sharif is not the only one working on the project. She has found collaborators all around the world who will attempt to replicate her studies. In addition, Dr. Sharif will also be the conference co-chair for the Eye Tracking Research & Applications Conference to take place in Warsaw, Poland, in 2018. Much of her help has originated much closer to home, however. Dr. Sharif has also been working closely with the Youngstown Business Incubator to find expert developers who are willing to participate in her research.

Dr. Sharif also hopes that this research will help satisfy some of her personal goals. “I want to see more women in the computer science field,” she stated. “Without them, we only see half of the coin.” Dr. Sharif also pointed out that she is always looking for motivated students to work on this and other research projects. “If you don’t have a diverse team, how can you be sure that you’re representing everybody’s needs in software?” 

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Pictured left to right: Nicholas Iovino, Dr. Bonita Sharif, Jenna Wise, and Benjamin Clark

APPLYING RESEARCH AND MAKING A DIFFERENCE WITH VETERANS


■ For the past few years, Dr. Daniel Van Dussen has focused his time and energy on an important project. Thanks to a grant from the Area Agency on Aging, District 7, Dr. Van Dussen, associate professor in the Sociology, Anthropology and Gerontology department, and his students Joe Voytek, Amy Plant, and Amber Durkin have been working with the District 7 Veterans Directed Care in southeastern Ohio. This project, now in the reporting stage, has focused on reducing reliance on long-term care for veterans by helping delay or transition them to other kinds of care. "Most people have a preference to stay at home," Dr. Van Dussen said. "The issue is, how do we allow people to safely remain at home as long as possible?"

Dr. Van Dussen has been motivated to conduct and apply research in gerontology because of the interesting, and deserving, population of veterans that he gets to work with as part of his project. While his relationships with veterans from World War II stoked his interest in the first place, Dr. Van Dussen said that most of the population he works with nowadays are from later conflicts such as the Korean War and the Vietnam War. In fact, some are veterans of Desert Storm and other more recent events. Dr. Van Dussen warns that it can be challenging to work with a diverse population; a "one size fits all" approach won't work, even though they are all veterans. "They all have different histories, different needs and different challenges," he said. "So they need to be treated in different ways."

Using a combination of reviews, surveys and interviews, Dr. Van Dussen specifically looked for additional ways to

help and areas of improvement in existing programs to keep veterans out of long-term care facilities.

This could be a particular problem in District 7, directed by Pamela Matura, which covers 10 counties in the least-densely populated and most rural areas in the state. Veterans in rural areas have unique challenges based on topography and access to community-based resources. This is one of the benefits of applied research that Dr. Van Dussen emphasizes. It can be very useful in assessing needs and measuring the effectiveness of various agencies. Forging a relationship with these agencies is one of Dr. Van Dussen's favorite parts of the project: "I love working with the amazing, dedicated professionals, from the executive director on down. It makes us want to work with them again in the future."

This applied research project should have a positive effect on its participants by allowing them to access help at home instead of being moved into long-term care facilities. Dr. Van Dussen points out that this practice, while potentially saving money, can also help keep communities intact. He also enjoys being able to involve his students in the project, whether it is in conducting the research or presenting at conferences. "Hopefully we're making a difference." 



Dr. Dan Van Dussen



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