

The First Student to Apply for YSU's Graduate School Tells His Story After More Than 50 Years.

STEVE MELEK

When Steve Melek applied to Youngstown State University's new graduate school in 1968, he didn't realize he had just made YSU history by becoming the college's first student.

Melek was born and raised in the Youngstown area. He decided to attend Youngstown University—the school had become a public institution—after deciding that he didn't want to work at the steel mills.

"Well, in those days... the jobs around here were basically the steel mills. My father worked at a steel mill around 40 years and I just didn't see that as being a fit for me...so there wasn't much choice but to go to college. So, I enrolled and became a teacher."

Melek graduated in 1965 with his bachelor's degree in kindergarten through eighth-grade education. He then decided to get his master's, so Melek began his short tenure at Westminster College. When YSU announced the opening of its new "School of Graduate Studies," Melek knew he wanted to transfer schools.

"Tuition, I suppose, was the main reason I went to YSU. I did attend graduate school... at Westminster, while I was teaching. I think it cost me like half my pay. Then they announced on the news that YSU was going to open a graduate school. So, I told my wife, I'm going to go down and sign up," explained Melek. Steve appreciated the help and support of his wife, Bonnie then and throughout his studies at YSU. Melek graduated from YSU for the second time in 1971 with a master's in elementary administration. He went on to

teach at Austintown Elementary School for 30 years.

"[The graduate degree] opened doors for other opportunities, not necessarily in education... Once you're with a company, they train you for what they need for that job description," but, he said, "...that master's degree got me through the door." Melek still appreciates the value he found in his master's degree, describing the opportunities and benefits it had on his career. He continued, "The other reason—I had three children—and it was quite a bit of a pay increase..."

Melek went on to describe how when he worked in the education system, it was common for teachers to be paid based on the highest level of education reached. Because he had several credit hours over the requirement for a master's degree, he was also able to receive the retirement package of someone with a doctorate.

During his time at YSU, one person Melek said left an impact on him was his baseball coach Dom Rosselli. Rosselli worked at YSU as a basketball, baseball and assistant football coach for 38, 31 and 20 years, respectively.

During his schooling, Melek struggled financially and academically; at times, he was unable to afford his textbooks or attend his classes.

Throughout his undergraduate program, Rosselli was able to buy Melek the textbooks from previous semesters to help him cut costs. Even after Melek returned to pursue his graduate degree, Rosselli did what he could to help.



In one of Melek's graduate classes, he and his classmates were required to write a 90-page book rather than take exams. Yet because he couldn't afford a textbook, Melek didn't understand the content he was supposed to be writing about. Laughing, he described how he pieced something together last minute—something most college students can understand even now. He ended with a C in the class.

Despite struggles and last-minute projects, Melek was able to join his peers in making YSU's history, for a second time, as he became one of the early graduates of YSU's School of Graduate Studies.

When discussing Melek's visit to campus, Sal Sanders, Ph.D. and dean of Graduate Studies, said, "Mr. Melek is impressive. He is an accomplished educator, who years ago gave a newly established graduate school at Youngstown State University an opportunity to provide him with an excellent education at a cost he believed was a good value. I find it impressive that more than fifty years later, many students continue to apply to the College of Graduate Studies for reasons similar to those expressed by Mr. Melek."

"I was honored to be welcomed back to YSU and the graduate college," Melek said. "I'd like to extend my sincerest thanks to Mr. Tressel and Dr. Sanders for their invitation, time and effort."



Tracking COVID-19 through Wastewater Testing

The uncertainty created by the COVID-19 pandemic has affected the entire Youngstown community. Now, three years removed from the initial outbreak, the lasting ramifications of the pandemic are materializing.

However, there are silver linings worth celebrating. Research made necessary by the pandemic continuously aims to benefit the world and the YSU community. Dr. Chet Cooper, a biology professor at YSU, and Kira Bowman, a biochemistry student and research assistant, have made the most of a program established in response to the COVID-19 pandemic.

In 2020, the Centers for Disease Control and Prevention, in collaboration with Ohio State University, developed a program to analyze dormitory wastewater in Ohio for SARS-CoV-2, the virus that causes COVID-19.

"The reason you look for the virus in wastewater is that people who are infected tend to shed the virus two to five days before they actually show symptoms. So, if you can detect it early enough, you might be able to get into that facility and mitigate the outbreak a little bit," explains Cooper.

Since YSU joined the program in 2020, Dr. Cooper, alongside Bowman and her peers, have used auto-samplers to collect wastewater from five locations across YSU.



Next, they extract genetic material from the waste to assess the quantity of SARS-CoV-2 present in the specimens.

At first, YSU's laboratory lacked the tools to conduct assays on the samples. Collecting results required sending the samples to a laboratory in Houston. The response time for this strategy was usually 24-48 hours, yet as the project evolved, the Houston lab's response time slowed. When the project was extended, Dr. Cooper requested the necessary instruments to conduct the entire process in the lab at YSU. His request was approved, and with this new equipment, results are ready within six to seven hours.

Since the acceleration of the process, Dr. Cooper says the project runs smoother than ever. Students are now able to collect additional samples the day after an initial spike of the virus. "We're doing more detailed work now. And we are able to do that because we can turn the results around really quickly," he explains.

Dr. Cooper remarks that his favorite thing about this project has been training the students. "I love the lab right now," he states. "It's really great to have students so dedicated."

In addition to the hard work of his students, Dr. Cooper emphasizes that the wastewater project would not be successful without the help of YSU's director of research Dr. Sev Van slambrouck, vice president and executive director of Facilities and Support Services John Hyden, and technical specialist Edward Budde.

The project has not only led to a better



understanding of the COVID-19 virus and the outbreaks at YSU, but it also garnered national attention for Kira Bowman. In November, she competed with 178 students from around the country at the National Collegiate Honors Council Conference.

Her submission, a research poster about the COVID-19 wastewater project, placed second. "The poster session itself was amazing," Bowman states. "It was just amazing to see all the posters and talk to everyone."

When she presented the abstract to Dr. Cooper and began working on the poster, Bowman estimated a 50 percent chance she would be invited to the conference. But once her project was accepted by the NCHCC, the poster came together rapidly.

Dr. Cooper states that as they began discussing the poster, Bowman brought in a nearly finished product. "I did very little editing. She basically did all the work," explains Cooper.

Creating the poster was an entirely new experience for Bowman. "I was a little nervous about that part because I had never designed a poster," she explains. However, these nerves did not stop her from finishing second amongst a competitive field of students. The COVID-19 wastewater project is ongoing, and Dr. Cooper hopes it will be funded for at least another year.

The Diversity of Scholarship Event: Demonstrating the Breadth of Graduate Student Activity at YSU

Graduate students completing research, special projects, performances, or other creative work can submit proposals for the annual Diversity of Scholarship event, which highlights the hard work of graduate students at Youngstown State University.

At this year's event, which is a collaboration between the College of Graduate Studies and the Office of Research Services, five graduate students from across the YSU College of Graduate Studies presented their research to an attentive crowd in Kilcawley Center.

Kyle Duke presented "Impedimetric Determination of Cortisol Using Gold Nanoparticles Functionalized Laser Induced Graphene Electrode." Through his research, Duke aims to create a wearable biosensor that detects cortisol, which is a biomarker for many diseases. Although results are fruitful, Duke admits it was not always so. "Most of



my time was spent trying to actually get results that were meaningful," he states. Despite difficulties, Duke's perseverance has paid off. "I've learned so much over this almost year and a half." Now that he has achieved promising results, Duke plans to continue with the next step of his project — he hopes to develop a wearable sensor that would detect cortisol levels in the user's sweat. Duke appreciates the opportunity the Diversity of Scholarship event provides graduate students to share their research. "It's always good to get practice speaking about your work," he states.

Prakriti Dhungana presented "Electrochemically Regulated Polyelectrolyte Complex Hydrogel of Ferrocene-Conjugated Chitosan and Alginate for Biomedical Application." The hydrogel used in Dhungana's project, electrochemically regulated

polyelectrolyte complex (E-PEC), has been shown to be a better option for controlled drug delivery. The project started two years before Dhungana's time at YSU began. She states, "it is a very elaborate project, and I am in the middle of it. I think it will continue to grow even after I leave." Methods such as SEM imaging, FTIR, swelling ratio analysis, drug release kinetics, and in-vitro biofilm assays prove the effectiveness of the hydrogel. "It has really been interesting work," she remarks. "I really had a good experience doing this project. The scope of the work is really elaborate; this system is going to be very helpful in wound healing, and the subject will be expanded to cancer treatments. It is going to be very effective in the future."

Prativa Pokhrel presented "A Comparison of AutoML Hyperparameter Optimization Tools for Tabular Data." Following her presentation at the 2022 Diversity of



The Diversity of Scholarship Event: Demonstrating the Breadth of Graduate Student Activity at YSU (continued)

Scholarship event, Pokhrel began to feel more confident in her public speaking. She has since presented at the Florida Artificial Intelligence Research Society (FLAIRS) conference and the Ohio Celebration of Women in Computing (OCWiC). “It all started from the Diversity of Scholarship event,” Pokhrel remarks. Because of how impactful last year’s event was, she decided to submit another project at the 2023 Diversity of Scholarship Event. As a graduate assistant working under Dr. Alina Lazar, Pokhrel was working on machine learning algorithms before beginning this project, which examines hyperparameter optimization tools to find the best framework for tabular data. “With this project, I got practical experience. It

will definitely be beneficial for my future academic and professional pursuits,” Pokhrel explains. “I am very grateful to Dr. Lazar. She has been a guiding light throughout my project. She has always been there for me.” Pokhrel is in her final semester at YSU — she plans to find a role in software engineering or data analytics after graduation.

Jenny Tullis presented “The Black Lives Matter Movement: Modern Protest Music and the Influence of Media.” The project examines the music of the Black Lives Matter movement — in her presentation, Tullis discussed how modern media has affected societal perceptions of protest music. Her project identifies how the endless news and media cycles can hinder protestors’ attempts to spread their message. Drawing on examples from artists such as Billie Holiday, Beyoncé, and Kendrick Lamar, Tullis highlights the

importance of music in social change. “I think it’s important to talk about the relevant music going on,” Tullis explains. Researching protest music was an easy decision for Tullis, “I play saxophone, and so much of saxophone and jazz has this background in civil rights and Black music, so I think that is also what drew me to this project.”

Tawnie Vair presented “Sternoclavicular Joint Space During Weightlifting.” Vair’s research reconsiders the post-surgery precautions currently assigned to patients who received a median sternotomy. Vair examined numerous range-of-motion activities in several subjects. The current standards discourage activities such as weightlifting, and although further research is needed, Vair’s biomechanical findings indicate that it may be necessary to reassess the sternal precautions given to patients during cardiac rehabilitation.



Clinicals and Curriculum: YSU's DNP Program Develops Leadership Qualities and Technical Skills

Elena Bocola-Mavar, a student in the Doctor of Nursing Practice in Nurse Anesthesia program at Youngstown State University, seeks to create a standard curriculum for nurse anesthesia programs around the world.

After obtaining her bachelor's and master's degrees in biology from YSU, Bocola-Mavar's passion for education led her to teach biology for several years, including as part-time anatomy and physiology faculty at YSU. In 2017, she transitioned into the field of nursing through the University of Akron's accelerated BSN program. After spending three years in the field, Bocola-Mavar decided she wanted to return to school. She researched various DNP programs in the area, eventually determining that YSU and the St. Elizabeth Health Center School for Nurse Anesthetists were the perfect fit. Not only does YSU's program provide an excellent education filled with opportunities not available elsewhere, but it also allowed Bocola-Mavar to remain in the Youngstown area.

The 36-month full time DNP in Nurse Anesthesia program is offered through YSU in affiliation with St. Elizabeth Health Center School for Nurse Anesthetists. The program trains students to become Certified Registered Nurse Anesthetists (CRNAs). The program is unique, providing students with distinctive experiences in the field and the classroom. "It is different, but it certainly offers more opportunities

for clinicals and things like that," explains Dr. Valerie O'Dell, who is a Professor and Graduate Nursing Program Director at YSU.

"We're one of the top schools when it comes to clinical experiences," Bocola-Mavar states. "We go to Pennsylvania hospitals, all Youngstown hospitals, as well as Akron Children's Hospital. We truly get a diverse clinical experience when it comes to cases and hospital settings."

In addition to these clinical experiences, students spend ample time in the classroom. While the non-clinical component of the program includes courses that prepare and facilitate students' transition into the professional roles they will have after graduation, the primary emphasis of Bocola-Mavar's current non-clinical work is her DNP project.

Her lifelong commitment to education led her to examine the curriculum of Nurse Anesthesia programs for her DNP project. "The Council on Accreditation



(COA) set new doctoral standards for entry into practice, but they do not offer a curriculum that can be utilized by programs. Each school must design their own curriculum to fulfill those standards," Bocola-Mavar elaborates. "It's really up to program administrators

Clinicals and Curriculum: YSU's DNP Program Develops Leadership Qualities and Technical Skills (continued)

and people like Dr. O'Dell to sit down and put a doctoral program together."

Bocola-Mavar hopes to create a standard curriculum that can be used across all nurse anesthesia programs. "My project involves looking at the top performing nurse anesthesia schools in the United States that have had a long-standing DNP programs, and synthesizing their curricula into a Standard Curriculum, that can be used by all existing and new anesthesia programs. Both domestically and internationally," she explains.

The COA set a deadline to transition all graduate nurse anesthesia programs to DNP programs by January 2022. This has caused an influx of new programs and transitioning programs that must create a new curriculum or modify their existing curriculum.

In addition, CRNA programs are increasing globally. Bocola-Mavar states, "nurse anesthesia field is up and coming globally, and currently only 40 countries have nurse anesthetists. New schools are opening all the time and are looking to model their education based on US education." Her project seeks to assist new and transitioning DNP programs in implementing effective curricula both in the United States

and abroad.

While transitioning the Nurse Anesthesia program to a doctoral degree, YSU faculty had to consider what separates an MSN from a DNP. "A master's prepared CRNA is still going to provide good and safe care to a patient, but the doctoral prepared CRNA will have that leadership ability and more of a focus with scholarship and research," Dr. O'Dell states.

"The DNP trained nurse anesthetists are expected to be leaders in education, clinical practice, and healthcare policy," says Bocola-Mavar. "We are also expected to lead in political activism and advocate for our profession."

In 2022, Bocola-Mavar experienced the political activism expected of leaders in her field when program administrator Dr. Patricia Kostelnak, took twenty students to Washington D.C. for the American Association of Nurse Anesthetists' Mid-Year Assembly. The Mid-Year Assembly is an advocacy event that allows students and professionals in nurse anesthesiology to meet with their representatives in congress to discuss issues related to the field.

One major issue CRNAs from Ohio discussed at the 2022 Mid-Year Assembly was the removal of the word "supervision" from

Ohio laws regarding CRNAs. "Currently, the Ohio Revised Code states that CRNAs must be supervised by and in immediate presence of a physician," Bocola-Mavar explains. "CRNAs are trying to remove the word "supervision" to allow nurse anesthetists to practice in their full scope, which will positively influence patients' access to surgeries. Many states have already done so successfully." Bocola-Mavar and other YSU students plan to attend the 2023 Mid-Year Assessment, with a continued focus on state laws affecting CRNAs.

Bocola-Mavar plans to work full time as a CRNA after graduation but hopes to continue her partnership with YSU.

"I would love to use my teaching and research experience and apply it to the field of nurse anesthesia,"

she remarks. Irrespective of the direction she chooses, her work as an educator, researcher, and nurse will have a beneficial effect on the Youngstown region and beyond.



Publishing Student Insight on Student Issues

It is not often students write and publish a chapter in a book. However, former YSU Criminal Justice graduate students **Jason Simon** and **Haley Marshburn** did just that in *Guns 360: Differing Perspectives and Common-Sense Approaches to Firearms in America*.



The book, which was published by Rowman & Littlefield in 2022, considers the multifaceted issues surrounding firearms. This is achieved by incorporating the expertise of professionals in law enforcement, public health, forensics, and other related disciplines in addition to the views of academics from criminology, psychology, sociology, philosophy, economics, and communications.

Simon and Marshburn collaborated with three undergraduate students to write a chapter addressing laws associated with firearms on college campuses. The group was able to do something most experts in the field cannot — they tackled the issue from the unique and indispensable perspective of students.

“We wanted to look at it from a multidimensional, transdisciplinary perspective,” explains Dr. Chris Bellas. Bellas, who is a professor at YSU, authored a chapter and co-edited the *Guns 360* book. While he and his co-editors considered the issue of “campus carry” laws, Bellas thought, “who better to research and give perspectives than actual students who might be exposed to gun violence themselves?”

Marshburn and Simon were then selected

by Bellas to lead a small group of YSU students in authoring a chapter in the book. “I felt honored,” Marshburn, who is an officer at the YSU Police Department, states. “It feels good to bring my perspective to other students.”

Simon is currently a Captain at the Youngstown Police Department. He used his experience as a firearms instructor along with his professional and academic experience to contribute to *Guns 360*.

Although his views didn’t fully align with the group of co-authors, Simon, who attended the FBI National Academy in 2016, appreciated the opportunity to approach the chapter with an open mind. “That is the goal of academia; a lot of it is to open your mind to different perspectives,” he explains. “I think that helps us all professionally regardless of where you end up.”

The student authors spent several months researching, drafting, and editing their chapter. Marshburn also considered additional perspectives from her colleagues. “At that time, I was working at different police departments, so I was able to ask other police officers their opinions on the matter, which then helped me provide different avenues of thinking when researching and writing,” she states.

The project began in 2019 when Dr. Bellas, Dr. Eric See, and Sarah See were approached by a publishing company about writing a chapter or compiling an entire book about gun violence. After careful deliberation, they worked together to co-edit *Guns 360*.

The publication of the book encountered several challenges, most of which were results of the COVID-19 pandemic. “Let’s just say it was a journey from 2019 to the summer of 2022,” Bellas remarks. “I think we did a darn good job considering what we were facing.”

Guns 360 was Dr. Bellas’ first experience editing an entire book, “to kind of bring this all together took a lot of patience.” He emphasizes that he could not have done it without the help of his colleagues and collaborators.

Following the book’s publication, Bellas continues to stay busy. He states, “I am



working on a law review article for Case Western Law School on police use of force, litigation, and jury behavior.” The *Guns 360* book, and specifically the chapter authored by Bellas, fits directly into his scholarship on criminal law.

Captain Simon hopes this project encourages publishers to provide students a sufficient platform to share their perspectives. “To say, ‘hey, these younger voices, in a very professional publication, do make a difference and they should be heard,’ I think that’s an amazing accomplishment for everyone involved,” states Simon.

The chapter authored by Marshburn, Simon, and the group of undergraduates is a start, but Simon hopes to see more students receive similar opportunities. “I know it might be a big leap for some of these publishing companies, but I think a book written from student perspectives would have a lot of value in the academic world. I think it should be explored more,” he concludes.

Guns 360: Differing Perspectives and Common-Sense Approaches to Firearms in America provided YSU students an opportunity to conduct meaningful research and publish their unique perspective on an issue that directly affects students. The book now provides readers with a comprehensive assessment of the complex dialogue surrounding firearms in America.





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