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DEAN'S MESSAGE

Dear Friends,

It is an exciting time on the Saint Vincent College campus! This past spring was busy with celebrations of achievement and transition, most notably the Honors Convocation and Commencement. During the quiet and restful summer, progress continued to percolate at the Herbert W. Boyer School of Natural Sciences, Mathematics and Computing.

This issue of the Boyer Bulletin reflects on the recent success of our students, faculty and alumni. Because the Boyer School is moving forward, always forward, this Bulletin also previews some coming attractions—new programs, new faculty and a new facility.

The 2023-2024 academic year ended with graduation—a time to honor our students for their accomplishments, graduate and professional school placements, and emerging career paths. In this issue, you'll read about 2024 graduates Olivia Persin and David Bujdos. Persin received the 2024 President's Award, the College's top academic honor. Bujdos, who as a student assisted with a groundbreaking water desalination project at Saint Vincent, has accepted a full fellowship to the University of Pennsylvania to earn a PhD in the materials science and engineering program.

I am so proud of what our faculty are accomplishing. Our instructors are working every day to teach our students, while also gaining national and international notoriety due to their research and scholarship.

Dr. Adam Wood (engineering) secured a coveted National Science Foundation grant for his water desalination project. Dr. Whitney

Liske (mathematics) discovered some amazing connections when she attended a Women in Commutative Algebra program last fall in Trento, Italy. Dr. Matt Fisher (chemistry) authored a chapter on the scholarship of teaching and learning.

In March, Saint Vincent hosted a unique quantum computing, mathematics and physics workshop that featured one of our distinguished alumni. Dr. Megan Ivory, C'07, a senior member of the technical staff at Sandia National Laboratories in Albuquerque, New Mexico, huddled with STEM teachers from around the region. We're a school that pays attention to what's happening in the world, and it's been inspiring to see how we've responded and laid a solid foundation for growth. This is my 14th year here, and it feels like we've picked up the pace and become nimbler.

Nursing, our newest program, is poised for success. This fall, we are welcoming the first cohort of students to our Bachelor of Science in Nursing program. Construction soon will begin on Rhodora and John Donahue Hall, a state-of-the-art facility that will be the nerve center of our nursing programs. This past summer, the Pennsylvania State Board of Nursing approved our Direct Entry Master of Science in Nursing program, which will enroll its first cohort of students in June 2025.

What are we going to do next? Where is health care going? Where is science going? Let's explore and find out.

May God bless you and your families this fall,

Steve



Dr. Stephen Jodis

*Dean of the
Herbert W.
Boyer School
of Natural
Sciences,
Mathematics,
and Computing*

Rhodora and John Donahue Hall will house nursing program

Construction is slated to begin in February 2025 on Rhodora and John Donahue Hall, a state-of-the-art facility that will house the Department of Nursing. The building is expected to be completed in April 2026.

The three-story building will be located on the west side of campus, next to the Sis and Herman Dupré Science Pavilion. Donahue Hall will feature a nursing skills lab, a virtual reality suite, simulation labs, a telehealth suite, home health/hospital-at-home space, conference rooms and flexible classrooms to support the distinctive elements of the nursing curriculum. Immersive learning and simulation experiences will allow for collaboration among undergraduate students, graduate students, faculty and local healthcare providers.

“Donahue Hall will serve as the hub of innovation and excellence in healthcare education at Saint Vincent College, providing our students with cutting-edge resources and a dynamic learning environment,” said Fr. Paul Taylor, O.S.B., C’87, S’91, president of Saint Vincent College. “This investment underscores our commitment to advancing healthcare education and enhancing the quality of care in our community. Our graduates, classically trained in the liberal arts and the Benedictine tradition, will bring discernment, values, ethics and critical thinking to their responsibility as nurses for the lives and care of their patients. We are especially grateful to our generous donors for their financial support.”

The project’s anticipated cost is \$16 million. The Commonwealth of Pennsylvania authorized a \$3 million grant from the Redevelopment Assistance Capital Program. Funding also will be provided from donors who desire specifically to advance nursing education at Saint Vincent College: J. Christopher Donahue and Ann Carey Donahue; the DSF Charitable Foundation; and the Richard King Mellon Foundation.

J. Christopher Donahue is the former chair of the Saint Vincent College Board of Directors and has served as director, president and CEO of Pittsburgh-based investment manager Federated Hermes. To mark the Donahues’ generous gift, the facility will be named in honor of Mr. Donahue’s parents.

To highlight the DSF Foundation’s gift, Donahue Hall’s first floor will be named the David Scaife Family Center for Excellence and Innovation in Nursing.



Digital rendering of Rhodora and John Donahue Hall

Direct Entry Master of Science in Nursing program is approved



Saint Vincent College received approval from the Pennsylvania State Board of Nursing to offer a Direct Entry Master of Science in Nursing (DE-MSN) program starting in summer 2025. The program will prepare students who did not study nursing in college for clinical careers.

The DE-MSN program is designed to address current and anticipated shortages of qualified, master’s-prepared registered nurses by enrolling professionals in other fields directly into an advanced nursing degree. This direct enrollment approach decreases the time from education to employment and aims to bring mature and experienced individuals into nursing practice.

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Direct Entry Master of Science in Nursing program is approved

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Students in the DE-MSN program can earn their degrees in 24 months and will be prepared to take the National Council Licensure Examination for Registered Nurses. Graduates will be eligible to sit for national certification as a clinical nurse leader. The program will be held in-person and will include training in state-of-the-art skills and simulation labs, which will allow students to learn patient assessment and clinical treatment skills through hands-on practice with advanced patient simulators and in-person healthcare environments and clinical rotations. “We are very excited to launch this new program alongside our recently launched undergraduate nursing program,” said Dr. Helen K. Burns, RN, NEA-BC, FAAN, Rev. Owen Roth, O.S.B., Inaugural Chair of the Department of Nursing. “Our graduates will be well-prepared to enter the field as nurses with the expertise to promote health and make positive changes to elevate patient care.” Saint Vincent is partnering with regional healthcare institutions

in a variety of care settings, providing students with the opportunity to gain clinical experience in a range of contexts, such as medical-surgical environments, geriatrics, surgery, behavioral health, pediatrics, obstetrics and gynecology, emergency departments, intensive care units and intermediate care and community health settings. Dr. Stephen Jodis, dean of the Boyer School, echoed Burns’ excitement. “We are thrilled to offer this new DE-MSN degree and continue to expand our new nursing program,” Jodis said. “Through our emphasis on excellent clinical preparation and expert faculty mentorships, our graduates will have the expertise needed to excel and the opportunity for promotion into advanced specialties.” The program will apply for accreditation from the Commission on Collegiate Nursing Education, the national accreditation agency for baccalaureate and graduate nursing programs. For more information, contact the Department of Nursing at 724-805-2829 or nursing@stvincent.edu.

Cybersecurity program ranked No. 3 in country

Saint Vincent College ranks No. 3 on Cybersecurity Guide’s 2024 list of the top 25 cybersecurity bachelor’s degree programs in the United States.

“I am very proud to see our cybersecurity program ranked third in the nation,” said Dr. Stephen Jodis, dean of the Boyer School. “It is recognition of the quality of our program as a National Center of Academic Excellence in Cyber Defense and the work of our faculty—in particular, Dr. Anthony Serapiglia.” In 2020, Saint Vincent was named a National Center of Academic Excellence in Cyber Defense Education by the National Security Agency and Central Security Services. Saint Vincent is among 15 four-year colleges in Pennsylvania to

receive the rating, which considers an institution’s curriculum, faculty profiles and qualifications and maturity of the program.

“To be successful, cybersecurity must be done with a holistic service approach, combining skill, thoughtfulness and compassion—and what better place to instill students with that approach than at a Catholic, Benedictine, liberal arts college such as Saint Vincent,” said Serapiglia, associate professor and chair of the Department of Computing and Information Systems (CIS).

“We continue to grow and evolve our cybersecurity program to address the issues of today and prepare for the threats of the future.” Although Saint Vincent

first offered a Bachelor of Science in Cybersecurity in 2017, cybersecurity has been part of the College’s CIS program for decades. Saint Vincent graduates have gone on to careers with government agencies such as the FBI and NSA; international companies such as CrowdStrike, Microsoft and Red Hat; and regional companies such as UPMC and USX.

Cybersecurity Guide evaluates only programs rated as Centers for Academic Excellence in Cybersecurity. Its national top 25 rankings are determined by factors including graduation rates, retention data and tuition cost.

Olivia Persin receives 2024 President's Award



Fr. Paul Taylor, O.S.B., C'87, S'91, president of Saint Vincent College, (far left) with 2024 President's Award finalists (from left) Olivia Persin, Helen Kish, Bridgette Gorg, Alyson Frank and Delaney Fox

Student Government Association executive board, treasurer of the Women in STEM Club and the Math Club, and a member of the Orientation Committee. She was a member

Olivia L. Persin, C'24, a triple major in mathematics, computer science and data science, received the 50th annual Saint Vincent College President's Award on April 24 during the Honors Convocation.

The College's highest honor, the President's Award is presented to a graduating senior who best embodies academic achievement, leadership and community service.

A native of Greensburg, Persin was president of the

of several national honor societies and was the starting shortstop for the varsity softball team.

"This award will open doors for me as I continue my journey through life," Persin said. "By embodying the mission of Saint Vincent College during my time as a student and after I graduate, I know that the skills and education I have received will enable me to achieve anything I set my mind to."

Fr. Paul Taylor, O.S.B., C'87, S'91, president of Saint Vincent College, lauded Persin for "her academic accomplishments and conscientious approach to learning, for being a disciplined student-athlete, for her service to the Student Government Association and for undertaking an opportunity for a transformational experience of mind and heart."

Three of the other four President's Award finalists this year also were Boyer School students: Alyson E. Frank, C'24, a mathematics major from Allison Park; Helen E. Kish, C'24, a mechanical engineering and psychology double major from Pittsburgh; and Bridgette Gorg, C'24, an environmental science major from Warrenton, Virginia.

Data Science team triumphs

The Data Science team of mathematics majors Victoria Barone, Sean Talbot and Antonia Sunseri won best statistical analysis at the fourth annual American Statistical Association DataFest 2024 competition April 12-14 at Robert Morris University.

"We encouraged students to participate in DataFest because it's a great learning

experience for those interested in data science and business data analytics," said Dr. Mary Regina Boland, C'10, who has a joint appointment as assistant professor of data science in the Boyer School and assistant professor of business data analytics in the Alex G. McKenna School of Business, Economics and Government.

In the competition, teams of students

worked over a weekend to uncover and share meaning in a large, rich and complex dataset. "I was completely guided by Boland and Dr. Justin Petrovich, C'14, associate professor of business administration and chair of the Marketing, Analytics and Global Commerce Department.

"I wanted to get a feel for what presenting in front of a large crowd of people was like, as well as gain experience [with] coding," Talbot said. "This competition is definitely something I can put on my resume."



(From left) Dr. Mary Regina Boland, Antonia Sunseri, Victoria Barone, Sean Talbot and Dr. Justin Petrovich

Internship program cleans local waterways

For nearly 30 years, the man-made wetlands on the Saint Vincent Archabbey property have helped improve local streams by naturally treating the water that drains from abandoned mines. Yet, other pollutants still lurk in the waterways.

Are local watersheds cleaner than they were three decades ago? Yes, but ...

“It depends on where you’re looking and what you’re looking for,” said Dr. Peter Smyntek, associate professor of environmental science. “The biggest, most obvious things, such as mine drainage, are getting better.

But we’re also learning about what else we need to look for. When we understand more about what’s happening in our local streams, we can focus on treatment priorities.”

Each year, Smyntek works with a small group of interns to monitor and analyze the interaction of mine drainage and sewage in local watersheds. Since 2017, Smyntek and his students have been collecting water and sediment samples from Fourmile Run near the Saint Vincent campus, Brush Creek in Irwin, and Jack’s Run and Sewickley Creek in Greensburg. The man-made wetlands of the Monastery Run Improvement Project adjacent to campus were developed in 1997 and 1998. The 20 acres of wetlands treat water that drains from abandoned mines and flows into Fourmile Run, Monastery Run and Loyalhanna Creek.

“The wetlands do a good job of

removing a lot of the mine drainage,” Smyntek said. “But there also is other nutrient pollution [from sources such as sewage and fertilizer runoff] that’s kind of being hidden by the mine drainage.”

Iron from mine drainage that seeps into streams gives the streambeds an orange sheen. When these pollutants stick to the sediment in streambeds, the levels of phosphorus, a key nutrient in the water, go down. As more mine drainage is remediated, the phosphorus levels in the stream it was controlling



Environmental science major John Pawlak measures the water flow rate in Brush Creek in Irwin

may increase. This may cause harmful algal blooms in downstream aquatic systems, which lower oxygen concentrations and potentially release toxins that can affect both people and aquatic organisms.

Smyntek and his interns place mesh-covered tiles on streambeds to collect polluted sediment for analysis. Groups such as the Sewickley Creek

Watershed Association, the Loyalhanna Creek Watershed Association, and the Westmoreland Conservation District can use Smyntek’s data when applying for grants to fund cleanup efforts. He recently shared his data with the Municipal Authority of Westmoreland County officials who monitor water quality for local drinking water treatment facilities.

“The big [problems] are getting better,” Smyntek said. “If you were to drink stream water or eat a fish from it, you’re safer now than you were 10 years ago. We’re learning more about what else we need to do and what we need to consider threats that we weren’t aware of before.”

For some students, Smyntek’s internship program is their first contact with hands-on field work. They gain valuable research experience and provide a tangible service to the local community. “It’s a chance for them to literally get their feet wet,” Smyntek said with a grin.

John Pawlak, a senior environmental science major from North

Huntingdon, was part of the internship group in summer 2023. “Going into the internship, confidence was not something that was easy for me to find,” Pawlak wrote in his internship reflection. “This changed for the better as a direct result of the work [in which] I participated.”

For more information, email peter.smyntek@stvincent.edu.

Physics team studies eclipse effect on cosmic showers

In the time it takes to read this sentence, your body will be bombarded by hundreds of subatomic particles called muons, fundamental building blocks of the universe that are created when particles in the Earth's atmosphere collide with cosmic rays. Muons exist for only 2.2 microseconds but travel far before decaying—penetrating up to a mile into the Earth's crust—because they move at the speed of light.

“Muons are passing through us all the time,” said Dr. Dan Vanden Berk, associate professor of physics. “We really can't do much about them, and most of them don't affect us at all. But they're energetic enough that sometimes, if you're really unlucky, they'll hit a DNA molecule and [mutate it].”

Over the past five years, physics students and faculty at Saint Vincent have monitored and studied muons via a cosmic shower detector array (CSDA) project. “Cosmic showers are cascades of subatomic particles that are created when high-energy particles from space interact with the Earth's atmosphere,” said Fr. Michael Antonacci, O.S.B., C'07, S'14, assistant professor of physics. “A muon is one of the few cosmic shower particles that survive long enough to reach the surface of the Earth and

be detected.”

Scientists are working to fully understand cosmic showers—their effects on the planet and people, where they originate, whether they vary in time and direction, and so on. On April 8, Saint Vincent's CSDA project team set up its muon detectors in Erie, squarely in the path of the total solar eclipse, to investigate if the rare astronomical event affected the rate of muons pelting the Earth.

“The next [total eclipse] won't be for another 20 years, so we tried to take advantage of it the best we could,” Vanden Berk said. “We measured more than a dozen things—background radiation, the muon counts, temperature, pressure, humidity and magnetic field strength.”

Four Saint Vincent physics majors who work on the CSDA project—Adrianna Battaglia, Coty Walters, Matthew Vanden Berk and John Meneghini—were joined in Erie by several members of the Saint Vincent College Physics Club.



Physics students (from left) Sam Bringman, John Meneghini, Matthew Vanden Berk and Will Mallah with their muon detectors

Saint Vincent participates in World Series of Birding

Dr. James Kellam's World Series of Birds class participated in the 41st World Series of Birding sponsored by New Jersey Audubon on May 11 in Cape May, New Jersey. The goal of the annual competition is to spot as many species of birds as possible in a 24-hour period.

The students who participated were Mike Azinger, Jonah Weaver, Teresa Grimm, Cassie Lanza, Mary McConville, Kristen Prince, Grace Scoville and Carolina Walters.

The group from Saint Vincent formed three teams: the Benedictine Ravens (116 species spotted, the highest total by a Saint Vincent team since the College began participating in 2017), the Wimmer Waxwings (104 species spotted) and the Bearcat Harriers (95 species spotted).

A highlight was when one student spotted a bald eagle. “The student gave an audible gasp,” Kellam said. “At that moment, I knew he would always remember his participation in the World Series. It was a connection between student and bird that I strive for. The competition doesn't matter at all if I can give students experiences that connect them to the awesomeness of birds.”



SVC's competitors at the 41st World Series of Birding: (Top row, from left) Jonah Weaver, Kristen Prince, Cassandra Lanza, Arianne Winkleblech and Grace Scoville; (Bottom row, from left) Dr. Jim Kellam, Michael Azinger, Teresa Grimm, Carolina Walters and Mary McConville

Graduates pursue postgraduate degrees

Nineteen recent Boyer School graduates will attend graduate or professional schools this fall to pursue postgraduate degrees.

Nicholos Benson, a chemistry and mathematics double major from McDonald, will pursue a doctorate in chemistry at Penn State University.

Andrew Bottino, a biology major from Monongahela, will pursue a Master of Biomedical Sciences at Duquesne University.

Sam Bringman, a physics and mathematics double major from Lewisburg, will pursue a doctorate in physics with a concentration in astrophysics and cosmology at Ohio University.

David Bujdos, an engineering major from Munhall, will pursue a doctorate in materials science and engineering at the University of Pennsylvania.

Anthony Campoli, a biology and biological psychology double major from New Castle, will pursue a doctorate in chiropractic medicine at Logan University.

Zach Choby, a mathematics and secondary education double major from Windber, will pursue a doctorate in mathematics at Syracuse University.

Lydia Cidor, a biological chemistry major from Greensburg, will pursue a doctorate in osteopathic medicine at Lake Erie College of Osteopathic Medicine.

Christian Ciecierski, a biochemistry and mechanical engineering double major from Murrysville, will pursue a doctorate in osteopathic medicine at Lake Erie College of Osteopathic Medicine.

Giana Georgiana, a biology and studio art double major from Hollidaysburg, will pursue a doctorate in osteopathic medicine at Lake Erie College of Osteopathic Medicine.

Nicholas Hesel, a biology and biological psychology double major from Hollidaysburg, will pursue a master's in physician assistant science at Gannon University in Ruskin, Florida.

Mei Jenkins-Andrews, a biology and psychology double major from Greensburg, will pursue a doctorate in osteopathic medicine at Lake Erie College of Osteopathic Medicine.

Sophia Lielsberger, a biochemistry major from Waterford, Virginia, will pursue a doctorate in pharmacy at West Virginia University.

Will Mallah, a physics and mathematics double major from Pittsburgh, will pursue a doctorate in physics with a concentration in condensed matter theory at the University of Tennessee, Knoxville.

Steven Manon, a biology major from West Newton, will pursue a doctorate in physical therapy at Duquesne University.

John Meneghini, a physics and mathematics double major from Jeannette, will pursue a doctorate in physics at Carnegie Mellon University.

Katarina McCaffrey, a biology and theology double major from Monroeville, will pursue a master's in biomedical sciences at Duquesne University.

Brennen Novotney, a biochemistry major from Greensburg, will pursue a doctorate in osteopathic medicine at Lake Erie College of Osteopathic Medicine.

Antonia Sunseri, a mathematics and data science double major from Greensburg, will pursue a master's in data science at the University of Denver.

Jonah Vaglia, a biology major from Clymer, will pursue a doctorate in osteopathic medicine at Lake Erie College of Osteopathic Medicine.

Research event in Italy leads to SVC 'reunion'



About 50 female mathematicians gathered for a week of research and collaboration last fall in Trento, Italy, as part of the Women in Commutative Algebra (WICA) program. Organizers selected a diverse group of women in different career stages from large universities and small liberal arts colleges all over the world.

Among them was Dr. Whitney Liske, assistant professor of mathematics. At the outset of the event, Liske met Saint Vincent College alumna Dr. Rachel Diethorn, C'13, who recently started in a tenure-track position at Oberlin College.

Liske was also introduced to Dr. Janet Striuli, a professor at Fairfield University whose son plays for Saint Vincent's men's soccer team. Liske said she was blown away by the coincidences: "What are the odds that we all meet like that in Italy?"

Hey, shouldn't a mathematician be able to compute those odds? "Probability is not my forte," Liske said with a laugh. "I just know [the odds] are not high."

Liske, who earned her bachelor's degree at the College of Saint Benedict and her doctorate at Notre Dame, began teaching at Saint Vincent in 2019. She specializes in commutative algebra—a branch of abstract algebra that studies commutative rings, sets that satisfy certain specified properties, and is important in algebraic geometry. Although mathematics tends to be a male-dominated area of research, the number of female instructors and researchers in commutative algebra has risen in recent years.

"We have a lot of women who are very senior in the field and very well respected," Liske said. "They support young female researchers and have done a lot to make it a very welcoming environment for female mathematicians."

WICA is one such effort. The program is a network

of female mathematicians who aim to advance commutative algebra through research, promote the work of women in commutative algebra, advance the academic careers of female algebraists through publications and professional connections and facilitate collaborative interaction between junior and senior researchers.

Trento, a picturesque town along the Adige River in northern Italy, was a superb setting for the WICA meet-up. In the 16th century, Trento hosted the Council of Trent, where the Catholic Church clarified its doctrines as a response to the Protestant Reformation. Now, Trento is a hub for scientific and financial institutions and has been dubbed the "Silicon Valley of the Alps."

Before she arrived in Italy, Liske scanned the list of attendees and saw several familiar names. Liske knew Diethorn from their interactions during grad school and at conferences. "It was a very nice coincidence," Diethorn said. "Although Whitney and I did not work on the same project, it was very nice to connect with her in Trento and hear more about her research and her time at Saint Vincent."

When the event got under way, each attendee stood and introduced herself. "I heard someone in the back of the room say she was from Fairfield University in Connecticut," Liske said. "I was like, 'Oh, I need to find her sometime this the week,' because I wanted to tell her Fairfield was the first place I did math research as an undergraduate. She found me first and told me that her son is at Saint Vincent."

Striuli's son, Mattia Speretta, is a sophomore forward for the Bearcats. "Having my kid just starting at Saint Vincent, I could not resist making the connection [with Liske]," Striuli said. "We compared notes on our institutions and careers. Of course, I told her how, as the mother of a freshman, I was anxious about the college experience at a far-away school. But meeting Whitney made me feel great about SVC."

In Trento, the overall group of 50 mathematicians was broken into research groups. Liske's WICA group has seven members, which is larger than a typical math research collaboration.

"Lately, we've split up into smaller groups that are meeting weekly to talk about different approaches to our project, then we're meeting as a whole group once a month to report to each other and bounce ideas," Liske said. "The small groups have changed a couple of times since we met in Italy, but it seems to be working pretty well."

Dr. Megan Ivory leads quantum computing workshop



Three dozen science, technology, engineering and math (STEM) teachers and students gained hands-on experience with cutting-edge technology during a quantum computing workshop March 16 at Saint Vincent College.

The quantum computing, mathematics and physics (QCaMP) workshop was led by Saint Vincent alumna Dr. Megan Ivory, C'07, a senior member of the technical staff at Sandia National Laboratories in Albuquerque, New Mexico.

Quantum computing involves aspects of computer science, physics and math that utilize quantum mechanics to solve complex problems faster than classical computers. It includes hardware research and application development.

"[Quantum computing] has the potential to have major significance in the fields of medicine and cybersecurity, especially the encryption of financial records," said Br. Norman Hipps, P'61, C'66, S'69, O.S.B., president emeritus of Saint Vincent College and professor of mathematics. "It's going to change things dramatically."

The eight-hour workshop was the first of its kind at Saint Vincent. It was a condensed version of the weeklong

interactive QCaMP events Ivory has been conducting online and in person with students and educators since 2021.

"For decades, we've been trying to increase diversity in STEM," Ivory said. "We feel strongly that if we can introduce [STEM topics] earlier, students will be better able to make decisions and be set up on paths of success."

One of the workshop's main topics was how to expand access to quantum learning tools to students in kindergarten through 12th grade. Ivory also encouraged teachers to engage with a recently developed online forum for STEM educators. "It's designed to allow teachers around the world to learn from each other, share curricula, and share their struggles and ways to overcome those struggles," Ivory said.

Workshop attendees included teachers from Greater Latrobe, Jeannette, Norwin, South Fayette, Derry Area, Southmoreland, Keystone Oaks, Clearfield Area and the Diocese of Greensburg. There was a wide variety of disciplines and grade levels.

"Quantum computing is our future," said Wendy Lint, a teacher in the Greater Latrobe School District. "I am intrigued to see how I can bring the understanding of such cutting-edge technology to my physics classes and show how what we're learning can be applied to today's newest research."

Dr. Ivory was assisted by Fr. Michael Antonucci, O.S.B., C'07, S'14, assistant professor of physics; Dr. Mary Regina Boland, C'10, assistant professor of data science and business analytics; and Saint Vincent physics students Will Mallah, C'24, and Sam Bringman, C'24.

The group aims to make the

workshop an annual event at Saint Vincent College. "We're laying the groundwork to make a sustainable version for us here," Antonucci said.

The workshop was funded through a PAsmart grant from the Pennsylvania Department of Education. Those grants support high-quality STEM and computer science learning and professional development opportunities to communities across the state.

"FOR DECADES, WE'VE BEEN TRYING TO INCREASE DIVERSITY IN STEM. WE FEEL STRONGLY THAT IF WE CAN INTRODUCE [STEM TOPICS] EARLIER, STUDENTS WILL BE BETTER ABLE TO MAKE DECISIONS AND BE SET UP ON PATHS OF SUCCESS."

-Dr. Megan Ivory, C'07

Dr. Matt Fisher authors chapter on scholarship of teaching and learning

College educators who embrace new teaching methods often wonder about the long-term effects. Have these new practices improved their students' engagement, learning and satisfaction? Do they benefit some students more than others? The answers can be found by engaging in an approach called the scholarship of teaching and learning (SoTL).

In a chapter of the recently published book "Becoming an SoTL Scholar," chemistry professor Dr. Matt Fisher explores some guiding principles for science, technology engineering and math (STEM) faculty who engage in SoTL. The book—a collection of chapters by numerous educators from around the world—is part of the Open Access Book Series from Elon University's Center for Engaged Learning.

"The book is about how do you make the scholarship of teaching and learning part of your career path and part of who you are as a scholar," Fisher said.

SoTL is a multidisciplinary field that focuses on systematic investigation into student learning. It focuses on how to better enable student learning via modern teaching methods such as active learning, cooperative learning and problem-based learning.

Fisher first encountered SoTL in 2005 as a Carnegie Scholar with the Carnegie Foundation for the Advancement of Teaching. He wrote his chapter in "Becoming an SoTL Scholar" over a span of 18 months.

"The principles I put forward in the chapter were designed to help STEM faculty understand how this form of scholarship is different in some important ways from [for example] running chemistry experiments in a laboratory," he said. "My hope is to communicate those differences in a set of general principles that would make it easier for faculty to engage in this form of scholarship over an extended period of time."



"THE BOOK IS ABOUT HOW DO YOU MAKE THE SCHOLARSHIP OF TEACHING AND LEARNING PART OF YOUR CAREER PATH AND PART OF WHO YOU ARE AS A SCHOLAR."

-Dr. Matt Fisher

Boyer School hires three professors

Dr. Andy Palko, assistant professor of biological sciences

Dr. Andy Palko earned a doctorate in health and physical activity from the University of Pittsburgh. Palko's research is centered on critically assessing and enhancing diagnostic, evaluative and treatment tools and protocols for sports injuries, particularly concussions.

Marcela Mera, assistant professor of computer and information systems

A graduate of University of Cauca in Popayan, Columbia, Mera earned master's and doctoral degrees at West Virginia University. Her research focuses on enabling robots to visually interpret their surroundings, a key step towards advancing technologies in self-driving vehicles and smart agriculture.

Dr. Sergio Andres Paredes, assistant professor and director of engineering labs

A graduate of University of Cauca in Popayan, Columbia, Paredes earned master's and doctoral degrees at West Virginia University. He is studying the development of advanced materials that best convert heat into electricity and improve sustainable energy technologies.

Dr. Adam Wood receives \$200,000 National Science Foundation grant



David Bujdos, C'24, (left) and Dr. Adam Wood

Dr. Adam Wood, assistant professor of engineering, received a \$200,000 grant from the National Science Foundation (NSF) to fund research on water desalination.

Dr. Wood's project, "Carbon electrodes with controlled surface topology for desalination and water disinfection," uses stale bread to produce fresh, drinkable water. A significant portion of the grant will enable undergraduate students to work on the project through the 2024-2025 academic year.

"NSF grants are very competitive, and this award speaks to the high quality and potential impact of the research conducted by Dr. Wood," said Dr. Stephen Jodis, dean of the Boyer School. "I am very excited for Dr. Wood and the opportunities for our students who will work with him on this project."

Over the past two years, Dr. Wood and engineering student David Bujdos, C'24, of Munhall, experimented with using whole wheat bread to create carbon electrons, which when charged by a power source can remove salt and other minerals from low-salinity water.

"You can hook it up to a solar cell, put it out in the sun and turn saltwater into pretty much freshwater, so it is a water-purification technique," Wood said. "You can also use it to kill bacteria in the water. We're not there yet, but we've got it started and we've proved that this works."

The process on a large scale could someday lead to an effective, accessible and less expensive way of purifying water for cities, municipalities and people all over the world.

"We're not at that stage yet," Bujdos said. "But with more funding comes more resources and more workers to be able to advance the project."

This past summer, Bujdos and four current Saint Vincent students—Tyler Dancu, David Ian Buttermore, Nicholas Jackman and Elizabeth Dudley—continued research work on Wood's project. The internships were funded by the NSF grant.