Secretary Zatezalo with WVU mining engineering students and faculty.

MINING ENGINEERING

JESSE WRIGHT/WEST VIRGINIA PUBLIC BROADCASTING

MSHA SECRETARY ZATEZALO DELIVERS 2018 POUNDSTONE LECTURE

On September 20, David Zatezalo, assistant secretary of the U.S. Department of Labor's Mine Safety and Health Administration, presented the annual William N. Poundstone Lecture entitled, "MSHA in Review and Forecast of Priorities."

U.S. President Donald J. Trump nominated Zatezalo to be the ninth assistant secretary for MSHA. He was sworn in on November 30, 2017.

A native of West Virginia, Zatezalo has spent a lifetime working in mining. He began his career as a union miner and since then has held positions at a number of companies as shift foreman, engineering superintendent, mine manager, vice president of operations and chief executive officer. Zatezalo has worked in mining all across the U.S. and internationally in Australia.

He has a degree in mining engineering (1977) from West Virginia University and is a registered professional engineer in Ohio and West Virginia. He also has an MBA from Ohio University. He is the past chairman of the Kentucky Coal Association and the Ohio Coal Association. He's also been a member of the Mine Rescue Veterans of the Pittsburgh District.

Zatezalo shared valuable safety lessons from the past with students, and pointed to priorities for MSHA in the future. He emphasized the importance of using safety technology to help reduce and eliminate injuries in mines. At the end of his lecture, Zatezalo was recognized as WVU's Distinguished Engineer of Mines.

BLACK DIAMONDS WV

Benjamin M. Statler College of Engineering and Mineral Resources 2018 YEAR IN REVIEW
DEPARTMENT OF MINING ENGINEERING

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BENJAMIN M. STATLER COLLEGE OF ENGINEERING AND MINERAL RESOURCES

MESSAGE FROM THE CHAIR

Dear Alumni and Friends,

Greetings from Morgantown! The brilliant colors of fall have left us and we have already experienced the snow and cold weather of the winter season. It felt as if it was just yesterday when we had the last snow of the previous winter, and it feels like the time between winters is getting shorter. This cold weather reminds me to appreciate and pray for all our coal miners who work around the clock to provide us with electricity so we can keep our homes warm and our lights on.

If there is one word to describe the state of the Department of Mining Engineering, it is "growth." We are growing in terms of number of student and faculty activities; productivity; and the number of opportunities to share with our alumni, friends and future students.

This newsletter contains several articles that highlight the achievements, accomplishments and activities of our students and faculty, and I do hope that you will enjoy reading them.

Our mining engineering students landed summer 2018 internships and jobs across the coal, metal and non-metal sectors of our industry. In my survey of the students, they worked for a number of companies, nationally and internationally, including NALCO, Westmoreland Coal, Martin Marietta, Alliance Coal, Peabody Australia, Murray Energy Corporation, Alpha Natural Resources, Warrior Met Coal, Luck Stone, Specialty Granules, Coronado Coal, RESPEC, GMS, Barrick, Newmont and Freeport-McMoRan. It is gratifying to have our students working in a variety of commodities and gaining valuable experience during the summer.

It is also encouraging to host more than a dozen info sessions on campus and to see so many companies coming back to interview our students. We welcomed Martin Marietta, Alliance Coal, Murray Energy Corporation, Coronado Coal, RESPEC, GMS, United Coal, Peabody Australia, Blackhawk Mining and Contura Energy. We also hosted a career fair on campus and were excited to see and meet with representatives of NALCO Mining, Arch Coal, Westmoreland Coal, Warrior Met Coal and SGI. We appreciate them coming to campus.

As the Department chair, I encourage our students to get actively engaged in professional societies, attend professional meetings, industry info sessions and mine trips, sign-up for job interviews with mining companies and volunteer to assume leadership responsibilities in order to build valuable skills and accumulate experience that will serve them well in their future professional careers. Thank you for welcoming and mentoring them in all venues. Please let us know if there are other opportunities for students to participate in. I also advise and encourage them to apply and compete for many external scholarships that are awarded to mining engineering students. To that extent, I am happy to report that our students have won a number of national scholarships and awards; they make us very proud of their achievements.

We had a memorable William N. Poundstone Lecture this year. It was an honor to welcome David Zatezalo, assistant secretary of the Mine Safety and Health Administration, who shared a valuable and personal safety lecture with the students, faculty, alumni and friends of the Department.

We have also welcomed Robert E. Murray, president and CEO of Murray Energy, as the guest speaker at this year's Students' Awards Banquet. I extend my warm congratulations to Mr. Murray for being inducted into the National Mining Hall of Fame at this year's ceremony in Denver, Colorado.

In my communication with WVU President Gordon Gee over the summer, I promised that we will build the best mining engineering school, not only nationally, but also internationally. Mining is an international business with so many opportunities for both national and international jobs, so I like to challenge students to consider opportunities beyond our local environment. We were fortunate to have two undergraduate students, Keegan Patrick and Thomas Hohenwarter, working at Peabody mines in Australia, and William Chmelik working at the National University of Colombia through sponsored projects between universities. I hope you will enjoy reading about their international experience. It is encouraging to learn that three additional WVU mining engineering students will be working with Peabody in Australia in summer 2019.

I have asked our students to always act as proud ambassadors of our Department and WVU. We will engage in a lot of recruitment activities in 2019, and we will also be making a new promotional video for the Department. I have been working on this project with Ryan Murray of Murray Energy, and five alumni from national and international underground and surface coal, metal and non-metal mines. Stay tuned; I will be sharing the results of this project with you in 2019.

Please remember that your feedback, observations and experience with the WVU Department of Mining Engineering, either in person, by e-mail or by phone, is always welcome and much appreciated. My office door is always open, and you are welcome to share information about any aspect of our Department. I will be listening to your suggestions to continuously improve. The faculty and staff of the Department are fully committed to provide all our undergraduate and graduate students with a friendly, conducive and supportive educational environment.

As the Chair, and on the behalf of the faculty, staff and students, I thank you very much for your support and commitment to the WVU Department of Mining Engineering.

I wish you all safe, healthy and happy New Year.

VLADISLAV KECOJEVIC
Robert E. Murray Chair and Professor
Department of Mining Engineering

WVU DAY OF GIVING

WVU held its second Day of Giving on November 14. If you were one of the many alumni and friends that made donations, thank you! Your support is greatly appreciated.

It's not too late, however, to consider giving to the Department. We're sure you are overwhelmed with the number of requests you get to give to worthy causes, so why is this request any different? The bottom line is that one of the metrics that is used in ranking universities in several of the national systems is the degree of alumni support. This is reported as a percentage of alumni that have contributed and not as the amount given. West Virginia University ranks lower compared to our peers in this category, which is surprising considering the loyalty of the alumni base to all things WVU. Therefore, if you can donate even $5 or $10 to the Department, this will make a difference, so please consider giving something no matter how small. Any funds donated on the Day of Giving or after that are not specifically targeted for other programs will be used by the Department to supplement and improve equipment and experiments in the undergraduate laboratory. When giving through the WVU Foundation please indicate that the funds are for the use of the Department of Mining Engineering; alternatively, contributions may be sent directly to the Department, c/o Karen Centofanti.

A WORLD-RENOWNED GROUND CONTROL EXPERT RETIRES FROM WVU

Keith Heasley, the Charles T. Holland Professor of Mining Engineering, retired from WVU in May 2018, after almost two decades of dedicated service to the Department, College and University, and more than three decades of service to the mining profession.

Heasley's contributions to teaching, research and service in the Department are greatly appreciated, as well as the leadership he provided for many years. Even during the last two years of reduced teaching, research and service activities, he continued to be a highly productive member of the mining engineering faculty, and a credit to his profession.

Heasley started his career as a project engineer for underground coal mines in the Midwestern region of Consolidation Coal Company. After earning his BS and MS degrees in mining engineering from Penn State in 1981 and 1987, respectively, he spent more than a decade at the former U.S. Bureau of Mines and then NIOSH Pittsburgh Research Laboratory, performing safety research in coal mine ground control. He earned his doctorate in mining engineering at the Colorado School of Mines in 1998.

He joined the faculty at WVU in 2001 as associate professor, and earned tenure and promotion to professor in 2007. He was appointed the Charles T. Holland Professor of Mining Engineering in 2012.

Heasley taught a number of courses at the undergraduate and graduate levels in the Department. He had been in charge of senior mining engineering design projects, and WVU mining engineering students won numerous recognitions at national competitions. As a graduate advisor, he directed eight PhD and nine MS students, and was a committee member for almost 40 PhD and MS theses.

He is internationally recognized for his work in rock mechanics, ground control and numerical modeling. He is probably best known as the originator and promoter of the LaModel program for coal mine pillar design. Over the years, he has supervised in excess of 30 research projects worth more than $3 million, and authored or co-authored more than 60 journal and conference articles. He has also been co-editor of 10 conference proceedings. His involvement and leadership in the International Conference on Ground Control in Mining made it one of the most successful events of its kind in the mining industry.

His service to WVU and professional societies was outstanding, and he received numerous awards and recognitions including Distinguished Service Award by SME Pittsburgh Section (2016); Distinguished Service Award by SME Coal & Energy Division (2014); National Faculty Award by Old Timers Club (2011); SME Syd S. Peng Ground Control in Mining Award (2012); Outstanding Teacher for the College of Engineering and Mineral Resources (2007-2008); Stephen McCann Educational Excellence Award by PA Coal Mining Inst. of America (2006); WVU Student SME Officer's Award - Outstanding Faculty Member ('13, '10, '07, '05, '04, '02); Young Engineer's Award - Pittsburgh Section of the SME of the AIME (1990); and Best Paper Award Coal Division of the SME of the AIME (1987).

FACULTY AWARDS AND RECOGNITIONS

QINGQING HUANG, assistant professor of mining engineering, has been recognized with two prestigious awards by the Society for Mining, Metallurgy and Exploration.

For the second time, Huang was selected as a distinguished speaker for SME's Henry Krumb Lecture Series. The program is offered to SME sections to enhance their appreciation and understanding of important new methods and technologies by bringing outstanding speakers to local sections. Huang will be available to discuss how different grinding media (e.g. standard stainless steel, fused silica beads and sand) can affect liberation behavior and recovery of rare earth elements from coal and coal byproducts, which is of great interest to researchers and engineers who are seeking alternative resources for strategically critical minerals.

She was also selected as the 2018 recipient of SME's Mineral and Metallurgical Processing Division Outstanding Young Engineer Award. The award, which recognizes significant contributions of a young individual within the mineral processing and extractive metallurgy discipline, will be given to her in recognition of her "creative use of mineral processing and mining engineering technology to minimize respirable dust and underground coal dust explosions." The award will be presented at 2019 SME Annual Conference and Expo, scheduled for February 25-27, in Denver, Colorado.

DAN ALEXANDER adjunct professor, was elected as the 2019 President of the Pittsburgh Coal Mining Institute of America during the annual SME/PCMIA meeting and conference at Canonsburg, Pennsylvania, in October. PCMIA was formed in 1976 as a result of the merger of the Pittsburgh Coal Mining Institute and the Coal Mining Institute of America. Its objective is to encourage education and the growth of knowledge relating to coal mining including providing scholarships, to advance study and research into mining methods and problems, to promote safety and efficiency in the coal mining industry, to encourage closer cooperation between the coal industry and state and federal government agencies, to disseminate information relating to the coal mining industry and to otherwise advance the mutual interests of the members of this association.

BRIJES MISHRA, associate professor and Syd and Felicia Peng Endowed Professor of Mining Engineering, was recognized for his outstanding research for 2017-2018 by the Statler College. The award was presented at the College's annual Honors Ceremony, held in April.

KAREN CENTOFANTI office administrator, was recognized by WVU for representing the core Mountaineer Values of service, curiosity, respect, accountability and appreciation. Centofanti has anchored the Department and kept it on task for many years. We appreciate her service.

VLADISLAV KECOJEVIC, the Robert E. Murray Chair and Professor of Mining Engineering, was appointed to a five-year term as the new secretary-general of the International Society of Mining Professors/ Societät der Bergbaukunde at the Society's annual meeting and conference in Beijing, China, in July. He was also awarded a special medal at the meeting in recognition for organization and contributions to the SOMP and 2018 SOMP Annual Meeting and Conference.

ANNUAL RECOGNITION BANQUET

Students, faculty, alumni and friends of the Department were recognized for their achievements at this year's Recognition Banquet, held at WVU Erickson Alumni Center at Morgantown in April. The special guest speaker was Robert E. Murray, founder, chairman, president and CEO of Murray Energy Corporation. The following awards were presented:

Charles T. Holland Award: Eric vom Lehn

Charles E. Lawall Award: Daniel Nash

MRAC Award: Erin Brooker

Old Timers Award: Jack Pappano

SME Student Chapter Award for an Outstanding Faculty Member in Mining Engineering: Mark Sindelar

SME Student Chapter Award to a Mining Engineering Student Who Has Demonstrated Sincere Interest in the Mining Discipline and Exceptional Service to His Fellow Students: Erin Brooker

SME Student Chapter Officer Award: Qingqing Huang

Calvin Kidd Fellowship Award: Cory Krall

West Virginia Coal Mining Institute Award: Jared Urcheck

Careers in Coal Award: Keegan Patrick

Mining Engineering Faculty Award: Samuel Chmelik, Chad Martin, Line-Audrey Nkule Sonkeng, Neel Gupta and Hua Jiang

Collegiate Mine Rescue Award: Cavan Rooney, Jack Pappano, Thomas Hohenwarter and Erin Brooker

Alexander Hardy Tait Scholarship: Daniel Ausherman, William Chmelik, Jeremy Diehlmann, Robert Harless, Thomas Hohenwarter, Line-Audrey Nkule Sonkeng, Keegan Patrick and Jared Urcheck

A. Wahab & Judy B. Khair Scholarship: Jeremy Diehlmann and Morgan Kearney

Alpha Natural Resources Scholarship: Samuel Chmelik, Ian Ebersole, Chad Martin, Daniel Nash, Shannon Seitz, Jessten Smith and Deniz Talan

Department of Mining Engineering Scholarship: Richard Campbell, Samuel Chmelik, Thomas Hohenwarter, Rince Longo, Lauren Masterson, Line-Audrey Nkule Sonkeng, Nadiya Robinson, Karl Steinbach, Deniz Tuncay, Benito Umuseke, Christopher Vass and Xue Zhai

Distinguished Engineering of Mines Scholarship: Clayton Johnson, Michael Kalski, Dominic Mandarino, Daniel Nash, Nadiya Robinson and Benjamin Safer

Doris H. and J. Banner Bise Memorial Scholarship in Mining Engineering Scholarship: Eric Blinkhorn and Richard Shipe

International Coal Group Scholarship: Richard Campbell and Benito Umuseke

Jack White Memorial Scholarship: Ian Ebersole

James Sterling Farinash Scholarship: Eric Blinkhorn

Joseph W. Leonard, IV Scholarship: Robert Harless, Selena Lewis and Andre Pereira

Julius W. Singleton, Jr. Scholarship: Emily Horowitz, Lauren Masterson, Keegan Patrick and Joshua Wilt

Martin Marietta Materials Scholarship: Erin Brooker, Chad Martin, Jacob Struss and William Talbott

Mineral Resources Alumni Chapter Scholarship: Ryan Barton, Erica McCauley and Lucas Poe

Northern West Virginia Coal Preparation & Engineering Society Scholarship: Samuel Chmelik, Ian Ebersole, Daniel Nash and Jessten Smith

Perry H. Gillie & William H. Gillie Scholarship: Robert Harless

Peter's Creek Coal Association Scholarship: Andre Pereira

R. Larry Grayson Scholarship: Jessten Smith

Ralph & Geraldine F. Dado Mining Engineering Endowed Scholarship: Andre Pereira and Jessten Smith

Raymond E. Salvati Memorial Scholarship: Molly McFarland, Andre Pereira and Emilayne Waiandt

Raymond H. Bowers, Jr. Scholarship: Emily Horowitz and Emilayne Waiandt

Robert L. Raines Mining Scholarship: Alima Diakite, Jack Pappano and Jack Prommel-Saenz

Royce J. and Caroline Baker Watts Family Endowed Scholarship: Selena Lewis

Syd S. and Felicia F. Peng Scholarship: Thomas Hohenwarter

Warren D. & Grace W. Sharpenberg Scholarship: Eric vom Lehn

Westmoreland Coal Company Endowed Scholarship: Selena Lewis and Robert Harless

1) Students, faculty and guests at the annual Recognition Banquet

2) Guest speaker, Robert E. Murray

3) Erin Brooker (l) receives the MRAC award from Kevin Hatfield.

4) Line-Audrey Nkule Sonkeng (m), recipient of the Department of Mining Engineering Faculty Award, with Mark Sindelar (l) and Vlad Kecojevic (r)

5) Jack Pappano accepts the Old Timers Award from Calvin Kidd.

FACULTY RESEARCH GRANTS IN 2018

BRIJES MISHRA

Project: Building capacity and improving mine safety through experimental rock mechanics
Role on project: Principal Investigator
Sponsor: NIOSH

QINGQING HUANG

Project: Pilot-scale Testing of an Integrated Circuit for the Extraction of Rare Earth Minerals and Elements from Coal and Coal Byproducts Using Advanced Separation Technologies
Role on project: Co-principal Investigator
Sponsor: U.S. Department of Energy

Project: Recovery of Rare Earth Elements from Coal Mine Drainage
Role on project: Co-principal Investigator
Sponsor: U.S. Department of Energy

Project: Study of Rare Earth Elements from Colombian Coals for High Tech Industries and Clean Energy Technology
Role on project: Co-principal Investigator
Sponsor: WVU Energy Institute, Office of Sponsored Research and Office of Global Affairs

MARK SINDELAR

Project: West Virginia Annual Coal Mine Injury Analysis
Role on project: Principal Investigator
Sponsor: West Virginia Coal and Energy Research Bureau

Project: Methane Watchdog System, a Cost-effective Approach to Longwall Methane Monitoring and Control
Role on project: Consulting Mine Electrician
Sponsor: Alpha Foundation for the Improvement of Mine Safety and Health

BERK TULU

Project: A Practical, Mechanics-based Approach to Pillar Design
Role on project: Principal Investigator
Sponsor: Alpha Foundation for the Improvement of Mine Safety and Health

Project: Analysis of Longwall Mine Layouts
Role on project: Principal Investigator
Sponsor: NIOSH

YI LUO

Project: Methane Watchdog System, a Cost-effective Approach to Longwall Methane Monitoring and Control
Role on project: Co-principal Investigator
Sponsor: Alpha Foundation for the Improvement of Mine Safety and Health

VLAD KECOJEVIC

Project: Integrated Monitoring and Response Systems for Respirable Dust in Surface Mines and Facilities (joint project with Penn State)
Role on project: Co-principal Investigator
Sponsor: Alpha Foundation for the Improvement of Mine Safety and Health

Project: A Mobile Interactive Equipment Task-Training with Virtual Reality
Role on project: Principal Investigator
Sponsor: North American Coal Corporation

Project: Study of Rare Earth Elements from Colombian Coals for High Tech Industries and Clean Energy Technology
Role on project: Principal Investigator
Sponsor: WVU Energy Institute, Office of Sponsored Research and Office of Global Affairs


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STUDENTS AND FACULTY ON THE MOVE


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Mining engineering students and faculty have attended a number of professional conferences and visited several mines in 2018.

A group of 25 students and six faculty members attended the Coal Symposium in Charleston in January 2018, which included the opportunity to meet with industrial professionals at the conference along with West Virginia Governor **Jim Justice**. **(1)** During this trip, J.H. Fletcher also hosted a visit to their Huntington facility. Our appreciation and thanks to **Calvin Kidd**, **Bill Raney** and the management of J.H. Fletcher for their assistance and help during this trip. **(2)**

Three students – **Chad Martin**, **Jared Urcheck** and **Worren Boord** – traveled to the annual meeting of the International Society of Explosives Engineers in San Antonio, Texas, in January 2018. **(3)**

A total of 18 students and six faculty members attended the 2018 SME Annual Meeting in Minneapolis, Minnesota. **(4)**

Surface mining class students had an opportunity to visit Alpha Natural Resources Republic Energy surface coal mine in April. **(5)**

Twenty-one students and four faculty attended this year's SME/PCMIA meeting at Canonsburg, Pennsylvania, in October. **(6)**

Sophomore students visited two Murray Energy underground coal mines – Harrison County Mine **(7)** and Marion County Mine – in October. Our thanks to Ryan Murray and the management of these two mines for the hospitality and for hosting our students and faculty.

A group of 16 students and five faculty members visited SGI Quarry between Maryland and Pennsylvania in November **(8)**. It was a unique opportunity to learn and observe blasting operations in the mine and crushing and processing facilities. Our appreciation and thanks are extended to SGI for their hospitality. On the return to Morgantown, the group stopped to visit with GMS Pioneer Conveyor facility at Bruceton Mills. Our thanks to GMS for hosting us at their facility. **(9)**

Department Chair Vlad Kecojevic was invited to be a guest lecturer and speaker at Pontificia Universidad Católica del Perú on topics related to surface mine safety. **(10)**

EXTERNAL SCHOLARSHIPS, AWARDS AND RECOGNITIONS

A number of mining engineering students received external scholarships through professional societies, organizations and foundations. These include:

SME Coal and Energy Division Scholarship: Keegan Patrick **(1)** received from Scholarship Chair Robert Kudlaviec

SME John Sidney Marshall Scholarship: Emilayne Waindt, Eric Blinkhorn **(2)**, Andre Pereira and Jared Urcheck

SME Mining and Exploration Division Scholarship: Emilayne Waindt

SME/PCMIA Mike Kotch Memorial Scholarship: Daniel S. Ausherman **(3)** accepts SME/PCMIA Mike Kotch Memorial Scholarship from Ed Zeglan (left), the President of SME Pittsburgh Section

WAAIME Scholarship: Robert Harless, Emily Horowitz and Michael Kalski **(4)** with Vlad Kecojevic.

Gimme Foundation Scholarship: Adewale Adeniji

SME Syd S. and Felicia F. Peng Ground Control in Mining Scholarship: Neel Gupta and Hua Jiang

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Neel Gupta, a graduate student in mining engineering, was awarded WVU's Outstanding Merit Fellowship for Continuing Doctoral Students. Gupta has been investigating the fundamental causes of roof collapses in underground coal mines in hopes of improving overall mine safety. Identifying the cause of roof failures at the microscopic level will allow Gupta to develop indicators that can be installed in underground mine entries to detect potential collapses, which will prevent mine accidents as well as loss of production. **(5)**

Students continue to garner awards for their design work from national contests.

WVU's six-student aggregates team comprised of (left to right) **Eric vom Lehn**, **Keegan Patrick**, **Erin Brooker**, **Thomas Hohenwarter**, **Chad Martin**, **Kyler Martin (6/7)** placed third in the second phase of the 14th annual SME/NSSGA Student Design Competition at the 2018 SME Annual Conference in Minneapolis, Minnesota. Sixteen teams from the U.S., Canada, Peru, Colombia and Netherlands began the competition at their schools at fall 2017. For Phase I of the competition, each team submitted an operational feasibility report for a limestone deposit overlain by sand and gravel. After the review of the submitted reports, the top six teams were invited to Phase II in Minneapolis, where the teams were given expansion to the initial problem. After completing this additional work, the final solution was presented to the panel of judges.

WVU mining engineering students **Jeremy Diehlmann**, **Robert Harless**, **Emily Horowitz**, **Andrew Moore**, **John Dickson** and **William Chmelik** competed in Phase I of the 2018-2019 SME/NSSGA Student Design Aggregates Competition. The results of the Phase I will be announced in January 2019.

Chad Martin took top poster honors in SME's Processing Division Competition at the 2018 SME Annual Meeting and Conference in Minneapolis, Minnesota. His winning poster was titled "Evaluation of ultrafine grinding performance using various grinding media in a laboratory stirred mill." **(8)**

In 2018, **Line-Audrey Nkule**, **Jake Struss**, **Benito Umuseke** and **Clayton Johnson** finished second in the 26th SME/PCMIA Senior Design Award competition. The competition is open to all U.S. ABET accredited mining engineering programs. WVU has taken first or second place in this contest 11 times in the last 17 years.

For the second straight year the team from WVU took home top honors in the Society for Mining, Metallurgy and Exploration–Eastern Collegiate Mine Rescue Fall 2018 Competition. WVU bested teams from University of Kentucky, Virginia Tech and Penn State to win the event, which was held at the Coronado Coal Mine Rescue Training Center, in Oakwood, Virginia, on November 3. WVU also won the Combination Team trophy for having the best overall combined score in the Mine Rescue Problem and the Smoke Competition and placed third in the Smoke Competition.

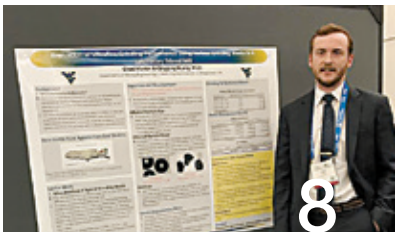
The competition tested teams' ability to locate and rescue two missing miners. "The scenario featured a mine that had an accident that caused massive flooding on the south side of the mine. All employees except for two were accounted for on the surface," said **Mark Gouzd**, extension agent with WVU Mining and Industrial Extension. "Water levels and explosive gas levels were encountered by the students as they worked through the problem. The team had to systematically explore all areas of the mine if it was safe to do so, account for the two missing miners, pump water and ventilate the mine to make it safe."

In preparation for the competition, the team trained at WVU's Academy for Mine Training and Energy Technologies. In addition to studying the rules and statements of fact, team members donned self-contained breathing apparatuses and worked through problems designed by their trainers to teach them the skills they would need to accomplish the goal of the scenario.

"We train each year with a well-rounded, skills-based system to enable the team to handle the challenges any problem designer presents them with," said Gouzd. "Each competition problem is different, so the team has to know all of the principles and practices associated with mine rescue to be successful."

Members of the WVU mine rescue team include (from left): **Lauren Masterson** (mining/civil engineering, Fallston, Maryland), **Shannon Sietz** (mining engineering/geology, New Glarus, Wisconsin), **Brenna Cole** (geology, Ellicottville, New York) and Amber Adkins (environmental soil and water sciences, Sherrodsville, Ohio), led by mining engineering major **Dan Nash**, an WVU Honors College student from Mount Airy, Maryland, **Jeremy Diehlmann** (mining engineering, Crofton, Maryland), **Erica McCauley** (mining engineering/geology, Minerva, Ohio), **Richard Shipe** (mining/civil engineering, Johnsonburg, Pennsylvania), and **Amber Adkins**. **(9)**

Joining Gouzd as trainers were **Ed Rannenberg** and **John Sabo**. The team is advised by **Joshua Brady**, associate director of Mining and Industrial Extension.



INTERNATIONAL EXPERIENCE OF MINING ENGINEERING STUDENTS

A Summer Down Under

by Michael Keegan Patrick

Keegan Patrick (middle) as a member of mine rescue brigade in New South Wales

Keegan Patrick (r) receiving Mine Rescue Statement of Competency

Mining is a global industry. It is that simple fact that first attracted me to a career in mining but, as a sophomore when I first began into my major, I could have never imagined that I would have this type of opportunity while in college.

In February 2018, I sent my application to Peabody Australia and applied for my passport. In May 2018, I found myself standing in the Los Angeles International Airport boarding a plane bound for Brisbane in Queensland, Australia. My journey had begun.

After several days spent in Brisbane at the corporate office, I boarded a new flight bound for the port city of Newcastle, New South Wales, where I made my way inland to a small town named Singleton. Singleton would be my home for the next three months.

I had been in Australia for five days and I was adapting to the time change well, or so I thought. Waking up at 4:15 a.m. in an unfamiliar country to meet a workmate before the sun has even risen is a daunting prospect, but when you're met with the kind and laid-back attitude that is synonymous with Aussies you can rest assured that you have nothing to worry about.

I spent my first six weeks at Wambo Mine working with the open-cut tech services team. I learned more than I could have ever imagined. The office didn't hold back on putting me to work and getting me involved in the team. Before I knew it, I was designing dumps and ramps, I was out in the pit working with the drill and blast team filling in while blasters were on holiday, and I even found myself passenger to a shovel driver nicknamed Frog, who took the utmost pride in being asked to teach a young engineer on best practice for shovel operation.

During the latter part of my tenure at Wambo, I was sent underground to assist in the longwall move. I had already gained some underground experience as an intern in New Mexico but working underground in Australia I was really able to apply what I learned in order to compare and contrast the two locations. It was an amazing opportunity to listen to the experiences of New Zealanders, South Africans and Islanders who had worked in a variety of pits and undergrounds around the world and take note of the similarities. Whether in Australia or New Mexico one thing is common: underground miners take interest in the new generation and try to teach them as much as they can. It wasn't long before I was being called to get shown something or to bring some tool to some operator in a bind.

Toward the end of my time at Wambo, I was offered an opportunity to attend a 10-day mine rescue brigades man induction course. I jumped at the opportunity since I am involved with the collegiate team here at WVU and the opportunity to learn how another country handles these sorts of disasters and furthermore receive a professional certification in the topic was more than I could pass up. I traveled back to Newcastle to be trained with five other operators from around the Hunter Valley. The training was phenomenal but what I learned from my colleagues and their experiences as operators was equally important.

I finished my time in Australia with a tour of Peabody's mines in central Queensland, where even in the dead of winter it was 85 degrees and sunny. The preservation of aboriginal culture is paramount to the people and government of Australia, and likewise to responsible mining companies. I had always heard of cultural heritage sites but had never seen one until my tour of North Goonyella where I was taken to a small cave outcrop on the shady side of hill where, behind some brush, was a cave painted with hand prints. According to our guide, these paintings were 8,000 years old but were as fresh and clear as if someone had completed them only a year prior.

Three days later I was standing in the Brisbane International Airport looking at the screen that told me I was headed back to Los Angeles and ultimately back home. Australia was an incredible opportunity with more adventure and experience than I had ever expected. I learned a lot, not only about mining, but about people and cultures and how together mining can be more than a job and an industry.

SUMMER IN MEDELLIN, COLOMBIA

By William Chmelik

A month in Medellin changed my life. There were many professional and personal benefits to this trip. To begin, everybody ought to travel outside of their own culture and experience other parts of this world. Broadening one's horizons and being open to other world views helps one in analyzing and problem-solving abilities. Every culture has a different way of doing things, from engineering to road signaling. Exposing oneself to a different way of thinking creates more opportunities in inventiveness.

I had two major professional opportunities in the Universidad Nacional de Colombia. First, I spent a week taking an intensive course in risk management given by a professor from Germany. Because the professor had spent many years working in risk management at a coal mine, the course material was very heavily related to mining. Taking this course helped me understand that the number one priority in mining is and should always be safety. It also, in a very detailed manner, helped me understand all the risks associated with mining from the work above or underground to upper management. The class contained not quite 20 students, so it was very personal and there were a lot of group teamwork activities. I became close friends with most of the people in this class, which was incredibly beneficial because their ages ranged from undergraduate, to graduate students, to other professors who have spent dozens of years in the mining industry. Speaking with this broad range of personnel taught me many lessons about the mining industry not only in Colombia but all over the world. Much of the information I picked up through conversations with these gentlemen I would not have learned in any typical class.

The second major professional opportunity I was given was to spend a portion of my time in a lab helping a graduate student analyze coal from a nearby mine. This involved a healthy learning process that taught me what it was like to be a researcher in the mining industry. The graduate student, Elkin, and I were tasked to prepare the coal for palynofacies hydrocarbon rock evaluations under UV and natural light. Because the full process takes months to complete, I could only experience so much. Some of the techniques I did learn about in the lab included heavy liquid separation,

filtration, dehydration and analyzation under natural and UV light. A brief glimpse into the world of research will no doubt be beneficial to my future career in mining.

Regarding my personal growth, I will say again everyone ought to experience other cultures. Everything in Colombia is different. The people, the food, the landscape, the vehicles, the buildings, the language and how the people act are all different. I was learning and experiencing new things. I found myself constantly analyzing the culture and wondering about its origins. How did these things evolve so much differently than where I am from? What kind of things could we be doing better in America?

I was completely immersed in the culture and language. I learned more Spanish in one month than in an entire semester in class. Of course, it helped that my roommate, Cecilia, did not know a word of English. I was forced to speak the language and I picked up on many things very quickly. One of the greatest things was learning how to interact with the people. Perhaps it was only because I was a foreigner and struggled to communicate and travel on my own, but the people were generally kinder and more willing to lend you their time or say hi on the street in Colombia. Undoubtedly, my social skills increased greatly in my time spent there. Plus, all the constant learning was never stressful, only fun. The people are kind, the country is beautiful and the meals are fantastic! Not to mention the nightlife is much different, with more active dancing in the clubs (another must for any traveler) like salsa and champeta.

The only real regret I have is not staying in Colombia longer. Although I saw so much, there was still so much more to see! I also hope that in the future, visiting students are able to work even more in the lab or visit some mines in Colombia to be able learn about mining and aid in professional and technical development. Experiencing a classroom in Colombia and living with a lady who is very personable but does not speak English was immensely helpful. The trips to Jerico, Santa Fe and other pueblos are musts. It would help anybody understand and become immersed in the different subcultures of Colombia. I hope I return to Medellin and that many more students get to experience what I experienced. It was a trip of a lifetime.

CONGRATULATIONS CLASS OF 2018

Class of 2018 (top row, l-r): Thomas Hohenwarter, Eric vom Lehn, Clayton Johnson, Jared Urcheck, Cavan Rooney, Chad Martin, Kyler Martin, Benito Umuseke, Jeffery Jacoby, Ian Ebersole, Andre Pereira, Erin Brooker, Jack Pappano, Lee Klocke, Emilayne Waiandt, Alima Diakite, Jack Prommel-Saenz, Samuel Chmelik, Dominic Mandarino, Jacob Struss, Line-Audrey Nkule Sonkeng.

WVU SME Student Chapter members assist with the local marathon in Morgantown.

REPORT FROM THE SME STUDENT CHAPTER

The WVU Chapter of the Society for Mining, Metallurgy and Exploration carried the momentum from spring 2018 into the fall with an active schedule of monthly meetings complemented by several professional events and outreach activities. The pace continues as we move into spring 2019.

Spring 2018 saw a variety of presenters from all areas of industry. We kicked off 2018 with Tyler Faulkner from Carlson Software, who presented on the features of the new software package as well as features that could enhance the senior design projects. Following Carlson were representatives from GMS Mine Maintenance and Repair Service. A recent graduate of the program, Rachel Boothby, talked about her experiences and opportunities with the company. February saw 12 chapter members travel to Minneapolis, Minnesota, for the annual SME Conference. We reconnected with alumni, saw the latest in mining technology and attended technical sessions in all aspects of the industry. The March monthly meeting was replaced with a trail building service project near campus. The end of the semester wrapped up with Chris Weaver, a representative from MSHA, who addressed our chapter about events in MSHA's history and events he's seen in his career.

Our students took several opportunities to put their education to the test in two separate design competitions. Historically, WVU has had a strong showing in the SME/NSSGA Student Design Competition, and 2017 and 2018 was no different. Our six-member team took third place in the competition beating teams from around the world. Closer to the University, three of our chapter members took first in a FEMA disaster response case study.

Fall 2018 was extremely busy with monthly meetings ranging from a resume help session with Mark Sindelar, to Justin Smoak, a sales-engineer with Samson Synthetic Rope, discussing his products and his non-traditional mining career. Members have been very active in volunteering events including recruitment events at the College, assisting with a local marathon and a local river cleanup with Ducks Unlimited. The last chapter meeting was held in December and included recent graduates Rachel Boz Boothby, Cory Krall, Nick Grishop and Kyle Clark, who shared their experience in transition from the classroom to the industrial setting.

We look forward to continuing our success and maintaining a strong presence in the University and in industry.


Chris Weaver of MSHA delivers a lecture on mine safety to WVU SME Student Chapter.


A guest lecture by Justin Smoak of Samson Synthetic Rope


Recent mining engineering graduates share their experiences about transitioning from the classroom to the industry.


Winning team in a FEMA disaster response competition (from left to right): Jack Prommel-Saenz, Eric vom Lehn and Keegan Patrick


WVU SME Student Chapter members help with the WVU Ducks Unlimited chapter with their annual river cleanup.

INDUSTRIAL INFO SESSIONS AND JOB INTERVIEWS AT CAMPUS

The Department was pleased to host a number of mining companies in 2018 including Martin Marietta, Alliance Coal, Murray Energy Corporation, Coronado Coal, RESPEC, GMS, United Coal, Peabody Australia, Blackhawk Mining and Contura Energy. We appreciate them coming to campus to give info sessions and interview our students for both full-time positions and summer internships. Our students also had an opportunity to attend a career fair at WVU's Student Recreation Center and meet with the representatives of NALCO Mining, Arch Coal, Westmoreland Coal, Warrior Met Coal and SGI/Special Granules.


PEABODY AUSTRALIA


CONTURA ENERGY


BLACKHAWK MINING


RESPEC


GMS


UNITED COAL


MURRAY ENERGY


CORONADO COAL


MARTIN MARIETTA


ALLIANCE COAL

Vlad Kecojevic and student Erin Brooker during the Bob Huggins Fish Fry event in Morgantown.

PHOTOGRAPH BY: STEVE PRUNTY

STUDENT RECRUITMENT AND OUTREACH ACTIVITIES

The Department chair and students have placed a significant effort into recruitment and outreach activities in 2018. They have given presentations to the Fundamentals of Engineering class of almost 900 students on mining engineering; job opportunities with mining; student activities; and their summer experience working as interns for coal, metal and non-metal mines. Students Erica McCauley, Daniel Nash, Shannon Seitz and Keegan Patrick did a great job in presenting our program and profession to the class. Other recruitment events included Mining Visitation Day, High School Visitation Day, WVU Discover Day and EngineerFEST.

Students participated at the Gem, Mineral and Fossil Show held at Mylan Park in Morgantown, in September and October of this year. After talking with the students and parents in attendance, almost 500 mineral kits, which were provided by the Pittsburgh Section of SME, were distributed. Other outreach activities are highlighted throughout this issue.

We would like to thank the Remember the Miners Foundation for raising money for mining engineering scholarships.

Presentation by department chair to freshman engineering class in fall 2018

Presentation by student Erica McCauley to freshman engineering class in spring 2018

Presentation by student Shannon Seitz to freshman engineering class in fall 2018

Mining engineering students during the WVU Discover Day event at Student Recreation Center (from left): Daniel Ausherman, Ricky Shipe, Eric Blinkhorn, Shannon Seitz and Keegan Patrick.

Mining engineering students Jeremy Diehlmann, Erica McCauley and Matt Vale at the Gem Mineral and Fossil Show held at Mylan Park.

SPORTS

We are excited for the upcoming WVU Basketball season after making it to the Sweet 16 this past year. Even though we lost a lot of scorers, we have a good core group of players that look to take us back to March Madness. All 31 of WVU's regular season games will be televised, including 26 airing on national television (i.e., ESPN, ESPN2, ESPNU, ESPNews and CBS Sports Network.

BLACK DIAMONDS WV

Department of Mining Engineering
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Alumni Update 2018 YEAR IN REVIEW

PLEASE WRITE TO US! We want to know where life has taken you since you left West Virginia University. Complete and return this form with your news and comments. Pass this newsletter on, or let us know any alumni who are not receiving *Black Diamonds*.

Send to: Department of Mining Engineering
West Virginia University | 365A MRB | PO Box 6070 | Morgantown, WV 26506-6070

Or, email updates to **karen.centofanti@mail.wvu.edu**.

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Preferred Mailing Address: ❑ Home ❑ Work

Brief News of Professional and Family Activities for Future Newsletters:

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Suggestions/Comments: _____

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This newsletter is published once a year to keep our alumni and friends informed of departmental news and ongoing activities. For additional information, visit our website: **mine.statler.wvu.edu**

We continue to make it more informative and useful to our visitors. Let us know your thoughts and comments, and drop us a line.