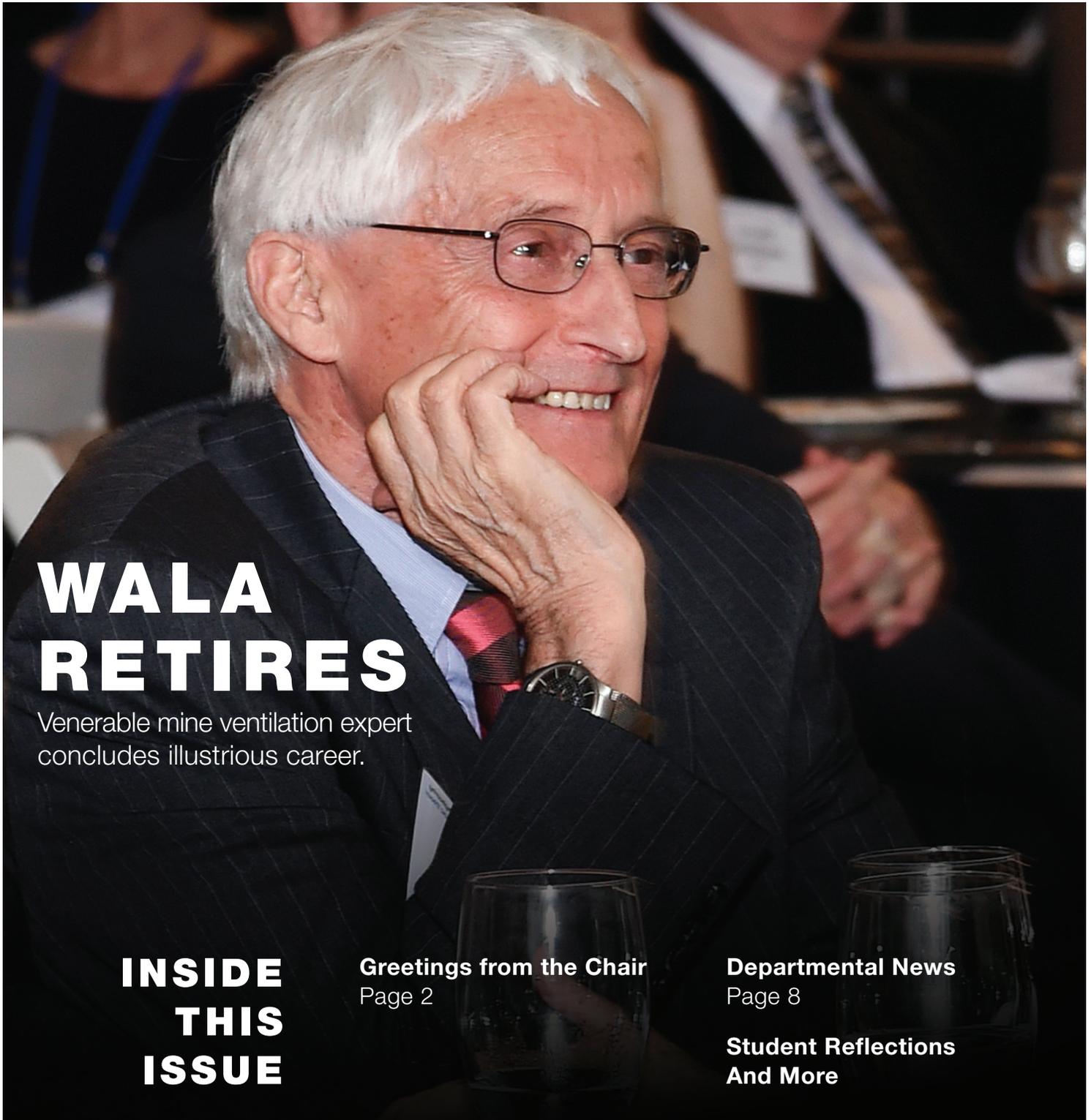


University of Kentucky Mining Engineering



SPRING 2015



WALA RETIRES

Venerable mine ventilation expert concludes illustrious career.

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Greetings from the Chair



Rick Honaker, Chair

The University of Kentucky's Mining Engineering program is delighted to provide you with this edition of our newsletter, which highlights our recent activities and achievements. We hope that this newsletter will be informative and leave you excited about the direction of our program.

Our total student enrollment continues to rank in the top three among all U.S. mining engineering programs. Enrollment in the fall of 2014 totaled 160 undergraduates and 28 graduate students, with females and ethnic minorities representing slightly over 20% of undergraduate enrollment. Approximately 20% of undergraduate students were from out-of-state, a relatively high percentage given that we do not recruit outside the Kentucky border, and is perhaps reflective of our program's growing national stature amongst outstanding engineering education and research facilities. Overall enrollment is down by 30% from last year due to the high number of graduates in 2013-14, as well as the retirement of Mr. Ron Robinson, who was a chief contributor to high freshman enrollment over the past decade. Moving forward, the department will strive to keep enrollment at a high level.

The past few years have seen an unprecedented level of graduation productivity. During the 2013-14 academic year, the engineering department produced a total of 33 B.S. graduates and approximately seven M.S. and Ph.D. graduates – the highest number of graduates in program history. The current academic year will see even higher productivity, with a projected number of 38 students completing their B.S. degree requirements.

The program has produced over 120 graduates in the past four years, which is more than the program produced over the entire previous decade. Many of these exceptionally talented graduates have also had multiple internship experiences that have adequately prepared them to compete for permanent employment opportunities within the industry. The program welcomed another new faculty member in the fall. We are very pleased to have Dr. Zach Agioutantis join the department as the Mining Engineering Distinguished Professor. With his expertise in unconventional hydrocarbon reservoir modeling we will be developing a certificate program in gas extraction that will stimulate additional education and research opportunities for the department.

The department faculty members continue to diligently conduct research on improving the safe and economic extraction of our natural resources. Clear examples of their hard work can be seen in the recent improvements in mine ventilation, which have significantly enhanced face ventilation efficiency. These advances have improved miner productivity, and more importantly have provided a safer work environment for miners. In fact, one patent-pending technology developed by our researchers is currently being evaluated for use in operating mines, in collaboration with the MSHA.

In closing, we hope that you are pleased with the current status of the program. If you'd like to become more active within the program, we encourage you to reach out to any staff or faculty member. There are a variety of ways to get involved, including serving as a mentor to our students. We wish you all the best.

Regards,

Rick Honaker, Chair



Friends and Family Celebrate Dr. Andrzej (Andrew) Wala's Retirement

Former and current students, family and friends gathered in Lexington on April 12 at the Marriott Griffin Gate Resort to celebrate Andrzej (Andrew) Wala's retirement from the University of Kentucky. The dinner capped off a full weekend for Dr. Wala, as he was also the UK Mining Engineering Foundation's distinguished lecturer the previous day. Students from 21 graduating classes attended the retirement dinner, which was sponsored by alumni and friends at Patriot Coal.

Following dinner, several people stood at the podium to speak of the impact Wala had on their lives and educations, including Wala's son, Tom; professor emeritus Kot Unrug; and several esteemed alumni. Vice President of Business Development of Alliance Coal, Jeff Brock, presented Dr. Wala with a plaque on behalf of 20 former students currently employed by Alliance Resource Partners. The plaque included a quote by Henry Brooks Adams: "A teacher affects eternity; he can never tell where his influence stops." It was a fitting tribute for a man who served his family, his colleagues and his students so well throughout his teaching career.

After the final goodbyes were said, Dr. Wala spoke, claiming he was surprised to see so many of his former students from as far back as 1980 in attendance. "It was very nice to see everyone in such good spirits talking about their careers, families and plans for the future. We were still able to recognize one another—even though some of us are close to 80 years old!"

Dr. Wala later recounted his 5½-year-old granddaughter, Madison's, comments the day after the dinner, "Mother, it was not fair last night. There were so many people at the dinner but everyone only talked about Grandpa!"

Indeed, it was fair. Dr. Andrew Wala is deserving of his accolades, and will continue to hold a place of importance in the history of the Department of Mining Engineering. We wish him well in the next phase of his life.

“A teacher affects eternity; he can never tell where his influence stops.”

Zach Agioutantis Joins the Department of Mining Engineering Faculty



Dr. Zacharias Agioutantis comes from Athens, Greece, but is no stranger to the United States. He is an alumnus of the Department of Mining and Minerals Engineering at Virginia Tech, with which he has had an ongoing collaboration since his graduation.

After Virginia Tech, Dr. Agioutantis moved to his homeland, Greece, and

joined the newly-founded Technical University of Crete as a lecturer in the Minerals Engineering Department. He built the rock mechanics lab from scratch, as well as a computer lab for graduate and undergraduate mining students. Over the years he has taught undergraduate and graduate classes in core mining engineering courses such as drilling, blasting, mining methods, ventilation and rock mechanics.

In 2003, Dr. Agioutantis co-launched a series of international conferences with the Department of Mining and Minerals Engineering at Virginia Tech and Aachen University, Germany, SDIMI, which have become an international forum for sustainable development in the minerals industry. The main objective of these conferences, which take place every other year, is to assist the global minerals industries in their transition to sustainable development. Dr. Agioutantis believes that “educating individuals and companies in sustainable development principles is greatly needed today, as all mining projects need to obtain the social license to operate. Without this license, mining projects are not considered viable.”

Dr. Agioutantis’ main research experience lies in the areas of rock mechanics, numerical modeling, mining systems and, most recently, gas reservoir modeling. He also has a strong background in software development for mining and geotechnical applications, including commercially available and freely distributed software.

As a postgraduate student at Virginia Tech, he realized that the mining and geotechnical community was in need of quality software to address technical issues during the various mining stages. As a result, through ongoing collaboration with Virginia Tech, he developed the Surface Deformation

Prediction System (SDPS)—the first Windows-based suite of computer programs to calculate surface deformations due to underground coal mines. The SDPS software has been constantly updated over the last 25 years and is now the official package used by the U.S. Office of Surface Mining Reclamation and Enforcement (OSMRE) for subsidence calculations. It is also widely used by the mining industry and consultants in the U.S. and Australia.

“I would like to pursue a number of areas that can contribute to improving the reputation and national standing of the mining engineering program.”

In recent years, Dr. Agioutantis has developed database applications for the management of large and real-time data sets, such as the applications deployed at the surface lignite mining complex in northern Greece. He has also worked on applications for collecting, managing and analyzing atmospheric data for underground coal mines in the U.S.

During his 25 years at the Technical University of Crete, he served as department head for three two-year terms and during the 2012-2013 academic year he served as president of the Society of Mining Professors.

Dr. Agioutantis is married to Kitty, a social anthropologist, and has two daughters, both of whom are currently studying environmental engineering at the Technical University of Crete.

Dr. Agioutantis is very excited about joining the Department of Mining Engineering at UK and sees it as an opportunity and a challenge.

“I would like to pursue a number of areas that can contribute to improving the reputation and national standing of the mining engineering program. Mining in the future will be much more complex, computerized and automated than current practices. The mining engineers graduating from the University of Kentucky should be well versed in mining engineering, computer technologies and applications as well as contemporary ‘license to mine’ concepts.”

Marco Rajkovich Jr. Receives Distinguished Alumni Award

Marco M. Rajkovich, Jr. was the recipient of the University of Kentucky Department of Mining Engineering Distinguished Alumni Award at the 32nd Annual Mining Awards Dinner, held on April 26th, 2014 at the Marriott Griffin Gate Resort. A native of Lynch, KY, Rajkovich earned a Bachelor’s degree in civil engineering with the mining option in 1977, and received his Juris Doctor from the University of Kentucky in 1987. He is a licensed professional engineer, a licensed professional land surveyor and a certified underground mine foreman in Kentucky. Prior to his law career, he worked with U.S. Steel Mining Company, where he served various positions in engineering and production.

Rajkovich is currently a member of the Lexington law firm Rajkovich, Williams, Kilpatrick & True, PLLC (RWKT), which was formed in 2005. Prior to the firm’s founding, he was a partner at the law firm of Wyatt, Tarrant & Combs for 18 years. RWKT has been listed in U.S. News & World Report’s annual “Best Law Firms” since 2011. Throughout his law career, Rajkovich has been involved with mineral law issues in federal and Kentucky state courts, as well as administrative tribunals – some of which have gained national prominence.

“Marco has provided invaluable service to the industry through his extensive knowledge of mining regulations and the associated legal processes, his exceptional understanding of basic engineering concepts as applied to mining operations and, most importantly, his dedication to the betterment of the industry and mankind in general. He is the perfect model for any young professional to follow and we are extremely proud that he is a graduate of our program.”

Rajkovich, also an author, is a sought-after speaker at many mining industry conventions, meetings and seminars. He is authorized by the Kentucky Board of Licensure of Professional Engineers and Land Surveyors as an instructor on ethics and minimum technical standards, and has given national ethics presentations to the National Society of Professional Engineers.

Rajkovich is very active in his church, as well as various civic and professional organizations. Rajkovich thanked the department for honoring him with the alumni award, and also thanked his family in attendance for their love and support throughout his career.



“He is the perfect model for any young professional to follow and we are extremely proud that he is a graduate of our program.”

DEPARTMENT NEWS



Associate professor Braden Lusk received a Dean's Award for Excellence in Research in April 2014.

Dr. Lusk has developed an extensive explosives and blasting research program that has significantly impacted the methods used when blasting near residential areas. His research is conducted in a world-class underground laboratory that he personally developed, and is where many companies test their products.

Braden Lusk (left) receives his Dean's Award for Excellence in Research from UK College of Engineering from Dean John Y. Walz (right).



2013-2014 Mu Nu Gamma Initiates

From left: Addison Wheatley, Jacob Brinkman, Austin Kulengowski, Elizabeth Maher, Zachary Zourakis, Brendan McCray, Adam Levy, Patrick Heeb, Kody Maikranz, Alex Shacklette, Alex Jolly, Joshua Hescocock, Eamonn Magner.

Not pictured: Morgan Lane, Terrence Luckett, David McLaughlin



A group photo of UK mining alumni attending the Professional Engineers in Mining (PEM) seminar, held at the Marriott Griffin Gate Resort and Spa on September 5, 2014.

DEPARTMENT NEWS

Ron Robinson, recruiter extraordinaire, retired in May of 2014 after 13 years at UK. Ron continues in a limited role as the department recruiter.

Mr. Greg Wooten of Natural Resource Partners, Mr. Brad Geiger of Martin Marietta Materials and Mr. Gerry Pearson of Luminant Mining were selected and approved by the UK Board of Trustees to serve on the Mining Foundation Board.

The Old Timers Club named Dr. Rick Honaker as recipient of the 2014 faculty award. The Old Timers club dates back to 1938 and is comprised of individuals who have made significant contributions to the coal industry and mining engineering education.

Copies of David Zegeer's book Inside MSHA: The Formative Years of the Mine Safety and Health Administration has now been published. Go to www.davezegeer.com to order your copy. The Kentucky Foundation will donate all proceeds after expenses to UK's Department of Mining Engineering David A. Zegeer Scholarship Fund.

At the October 24 Mining Foundation board meeting Dr. Braden Lusk presented a report and completed design for a state-of-the art research facility and mine health and safety training center. Funding for the study came from the Kentucky Energy and Environment Cabinet. You can download his PowerPoint presentation at <https://www.dropbox.com/s/beygujnlts7iby/Exp%20Mine%20Building%20Presentation%20final.pptx?dl=0>

Dr. Jhon Silva-Castro began work in August of 2014 on a two-year project entitled "Design and Construction Considerations for a Protected Compressed Air Line to a Refuge Alternative." The two-year \$300,000 grant was awarded by NIOSH. Dr. Braden Lusk is the co-principal investigator.

Dr. Chad Wedding received 1.25 million in funding to study mine ventilation research for coal dust mitigation. NIOSH funded this five-year grant with Dr. Tom Novak as the co-principal investigator.

Dr. Tom Novak received a \$660,000 two-year grant from the Alpha Foundation for the Improvement of Mine Safety and Health for reducing respirable and float dust in longwall mining through the application of a flooded bed scrubber to a longwall shearer. Drs. Chad Wedding and Joe Sottile are co-principal investigators on the project.

Dr. Rick Honaker will receive the 2015 Robert H. Richards Award at the SME Annual Conference in Denver, Colorado. The award, established in 1948 and funded by AIME, recognizes achievement in any form which unmistakably furthers the art of mineral beneficiation in any of its branches.

STUDENT REFLECTIONS



**Colton Parsons
B.S. '14**

When I came to the University of Kentucky in the fall of 2010, I really did not know what to expect. Growing up in a small town and attending a relatively small high school in West Virginia, the thought of attending college with 25,000 other students seemed overwhelming. However, once I became acquainted with the smaller Department of Mining Engineering and started to participate in SME events, I knew I had made the right decision.

The faculty and fellow students in the department have made the four years I have spent at UK a very rewarding experience. The instructors and staff truly want students to succeed academically and in the mining industry. They are willing to take extra time if a student is struggling in order to ensure a solid foundation for a successful career. Through challenging coursework and many interesting design projects, the professors test our knowledge and promote the importance of using good judgment. Fellow students are also willing to help peers develop a better understanding of the course material. Whether at tailgates, SME conferences or playing intramurals, the students are some of the nicest and most entertaining people you could ever meet.

In my experience, the Department of Mining Engineering far exceeded my expectations. I was given the opportunity to complete three industry internships, became vice president of the Norwood Chapter of SME and was even blessed with several national scholarships awarded through SME. I am now in law school with intentions of remaining in the mining industry upon graduation. However, I know wherever my career may lead I will maintain and cherish the relationships I made with faculty, staff and peers, remembering how they provided the opportunity and pushed me to succeed.



**By Kristin Floyd
B.S. '14**

I once asked my parents what I should be when I grow up. Their response: "an engineer." While it was their goal for me to become an engineer, it was ultimately up to me. I liked math, science, being outdoors and had no problem doing manual labor. Never did I think this combination of interests would lead me to where I am today. In May I graduated with a degree in mining engineering and joined Peabody Energy. While I am excited about what lies ahead, I want to share how I got here.

During the past four years, I became involved with the SME and Women in Mining (WIM) student chapters. While I did not travel to the national conventions, I participated in weekly SME meetings (where the food never disappoints) and educational outreach events. In my senior year I became the WIM chapter president and spearheaded and revitalized the Department of Mining Engineering's participation in the annual E-Day events. On E-Day, hundreds of students and parents visited our assortment of mining-related exhibits: particle separation, blasting and roof support.

It has not been just the students who impressed me, but the professors who show such passion about their own mining discipline. Whether it was ventilation, coal preparation or rock mechanics, the knowledge gained from these professors gave me the foundation needed to start a career in mining.

While students build teamwork skills and professors build knowledge, hands-on experience builds a future. Throughout my time in the department, I had the opportunity to learn about companies from a variety of sectors and complete three internships. Since only so much can be learned from a textbook, having companies recruit students wanting hands-on experience creates outstanding opportunity.

Growing up in the small Kentucky town of Science Hill, the closest I had ever been to a mining operation was the local rock quarry. However, over the span of my four years in the Department of Mining Engineering, I have come to understand what mining and this department is all about: people, experience and opportunity.



2014 B.S. Graduates

Front row left to right: Quentin Eades, Jiawei Dong, Shane Ratcliffe, Colton Cook, Chris Clarkson, Taylor Gabbard, Jeremy Hundley, Max Shrout; Middle row: Gabe Nickell, Brody Herd, David Albers II, Aaron Wagner, Owen Moreland, Curby Critser, Chase Guengerich; Back row: Melyssa McFarland, Andrew Hill, Patrick Jorgensen, Tyler Meadows, Colton Parsons, Adam Thompson, Jonathan Fryman, Tressa Lunsford, Tyler Fugate, Rachael Cash, Austin Brock, Kristin Floyd, William Axtell, Chase Richardson, William Walker.

Not pictured: Justus Carter, Michael Gordan, Jonathon House, Joseph Jury, Cory Kiser, Katy Petry, Andrew Reesor



2013-2014 M.S. and Ph.D. graduates

Left to right: Yigong Zhang (Ph.D.), Majid Mahmoodabadi (M.S.), Seyed Hassan Amini (M.S.), Ali Soltani (M.S.), Todor Petrov (Ph.D.)

MARK YOUR CALENDAR

April 16, 2015

Mining Engineering
Foundation Board Meeting
and Distinguished Lecture

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April 24, 2015

College of Engineering
Hall of Distinction

.....

April 25, 2015

Student Awards Dinner
Marriott Griffin Gate Resort

2014 STUDENT AWARDS

**Professional Engineers
in Mining (PEM) Award**

Tyler Meadows

**Mu Nu Gamma Junior
Academic Achievement**

Kristin Floyd

Mu Nu Initiates

Jacob Brinkman
Elizabeth Maher
Alex Shacklette
Adam Levy
Austin Kulengowski
Patrick Heeb
Alex Jolly
Zachary Zourakis
Brendan McCray
Addison Wheatley
Kody Maikranz
Eamonn Magner
Joshua Hescock
David McLaughlin

Academic Excellence

William Walker

**Tau Beta Pi
Outstanding Senior**

Kristin Floyd

**Tau Beta Pi
Outstanding Junior**

Alex Jolly

**Ta Beta Pi
Outstanding Teacher**

Dr. Braden Lusk

**Outstanding
Graduate Student**

Mohammad Rezaee

**Catesby Clay
Leadership Award**

Austin Brock

**Careers in Coal
Lamplighter Award**

Patrick Jorgenson

Old Timers' Club Award

Kristin Floyd



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