



Black Diamonds

from the
Department of Mining Engineering

COLLEGE OF ENGINEERING AND MINERAL RESOURCES
WEST VIRGINIA UNIVERSITY

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Thomas William Garges presented the fall term's Poundstone Lecture, "Underground Mining Technology Evolution" and received the Distinguished Engineer of Mines Award on November 13th.

Mr. Garges was born near Beckley, West Virginia as a

Thomas W. Garges, President/CEO Pittston Coal, named Distinguished Engineer of Mines

Promoter of Mining Equipment Technology



Thomas Garges presents his lecture on the significant developments in underground coal mining equipment technology

third generation coal miner. Throughout high school and college he worked at the

Cabin Creek Mine and graduated from West Virginia University in 1963

with a B.S. Engineer of Mines degree. After graduation, he worked as: a salesman for Jeffrey Manufacturing Co. (1963-1967), Chief Mining Engineer and General Superintendent for Union Carbide Co. (1967-1971), Manager of Mines for Jewell Ridge Coal Co. (1971-1976), Vice President of Koch Carbon, Inc. (1976-1982), Executive V.P. of Pittston Co. (1982-1986), Senior V.P. of Elk River Resources (1986-1988), President and CEO of R&P Coal Co. (1988-1999), and President and CEO of Pittston Coal Co. (1999-present).

Mr. Garges's long and varied mining career was clearly evident in his Poundstone Lecture presentation which covered the significant developments in underground coal mining equipment technology. In fact, he had personal experience with, and contributed to, many of the more recent equipment (see **GARGES** page 2)

MAJOR STORIES

- 30 Years at WVU and in Coal
- Tom Garges Named Distinguished Engineer of Mines
- MinE Design and Teaching Computer Lab Funded
- New MinE Recruiting Program Initiated
- Several Notable Awards and Scholarships Won
- MinE Alumni News
- SMESC Student Activities

Mine Design and Teaching Computer Laboratory Funded

If anything can be said of mining engineering today, it is that the computer and current software are essential engineering tools. As we prepare to serve an expanded enrollment, new facilities and equipment are needed in spite of the decreasing level of state funding. As you might expect we returned for help to our main constituents, alumni and

coal mine operators and engineers.

We were privileged to announce at the Poundstone Lecture, November 13, 2003, that Tom Garges, Cliff Forest, George & Janet Desko and Jim Boyd, as leaders in the mining industry, have joined to fund the renewal of the Mine Design Computer and Teaching Laboratory.



Seniors working on their mine design projects in Mine Design Computer Laboratory

These mining industry professionals have seen the need and are insuring that the Mining Engineering

Department will continue to have the tools to train capable and prepared engineers.

If you are interested in helping to establish an endowment for the Mine Design Laboratory's ongoing care and maintenance or other facilities, make sure that you designate the funds specifically for the Mining Engineering Department and send your check made out to the WVU Foundation, Inc, c/o Syd Peng, Chairman, Department of Mining Engineering.

Alumni News

- **David J. Akers** (MSMPE '84) is the editor of the Coal Preparation Society of American Journal.
- **William D. Allen** (BSEM '56) retired from US Steel Mining Company in 1987 as Manager of Engineering. Retired from State of Florida Environmental Engineering in 2000 as P.E. Administrator.
- **Alex Bacho** (BSEM '51) retired from former U.S. Bureau of Mines.
- **Robert L. Baldwin** (BSEM '82) Married with three children (2 boys/1 girl). Wife Susan is also WVU alumna. Oldest son, Rob is currently a freshman at WVU. He is currently serving as President of the Tug Valley Institute and Board of Directors of the Logan County Chapter of the WVU Alumni Association.
- **John G. Blue** (BSEM '84) married to Monica Blue, 2 children, Brooke and J. J. Currently Vice-President of Utah Operations, Conveyor Services Corporation.
- **Raymond A. Bradbury** (BSEM '50) - The Raymond A. Bradbury Safety Award, established in 1993 to recognize the most outstanding safety performance among the Massey Energy Co. Resources Groups, was won in 2002 by Green Valley Coal Co. of Leivasy, WV, Paul Hughart, President. This was the 9th year the Bradbury Trophy was presented and is named for the retired President of Martin County Coal Corp. of Inez, KY.
- **Patrick Brady** (BSEM '77) is now acting administrator, MSHA Academy, Beckley, WV. He was the former District Manager of MSHA District 5 in Mt. Hope, WV.
- **John E. Caffrey** (BSEM '50) is still involved, being chairperson of the McDowell County Development Authority.
- **Kenneth K. Eltschlager** (BSEM '76) - With Office of Surface Mining for 17 years.

A mining engineer, blasting engineer, and board member of the International Society of Explosive Engineers. Focus on environmental effects of blasting.

- **Howard Epperly** (BSEM '73) is now with MSHA Approval & Certification Center, Triadelphia, WV. But he commutes daily from Morgantown, WV.
- **John C. Hill** (BSEM '77) has been named director of underground mining for Black Beauty Coal Co. unit, Peabody Energy. He has responsibility for all Black Beauty underground mines, which include Air Quality No. 1 in Knox County, IN and the Riola Mine Complex in Vermillion County, IL.
- **Wahab Khair** (BSEM '68, MSEM '69) was invited to

(GARGES from page 1) enhancements and improvements. The presentation gave a very thorough history of the evolution of mining equipment from the original hand loading, through the initial loading, and cutting machines, and up to modern automated longwall systems. Numerous old photographs of the equipment and miners highlighted the delivery and visually captivated the large audience of students and industry visitors. Integral to the



Thomas Garges accepts the Distinguished Engineering of Mines Award from MinE Department Chair, Syd Peng.



Ben Statler, President of PinnOak Resources.

This past summer, Ben Statler (BSEM '72), engineered the creation of PinnOak Resources, the company that acquired the two remaining USX coal mines, Pinnacle No. 50 Mine in Pineville, WV and the Oak Grove Mine near Tuscaloosa, AL. Ben is part owner and President, Barry Dangerfield (BSEM '73), is Chief Operating Officer and Doug Williams (BSEM '86) is Mine Manager, Mine 50. Statler recently was quoted saying "we will build a company committed to the objective of mining coal safely, efficiently and at a competitive price."

participate in a problem solving workshop addressing shrapnel generation from a continuous miner's cutting bits at the MSHA Approval & Certification Center, Triadelphia, WV, Nov., 2003. There he met four BSEM graduates employed by MSHA: **Chris Weaver** (BSEM '84), in charge of the workshop, **Ben Gandy** (BSEM '97), **Howard Epperly** (BSEM '73), mem-

bers of the accident investigating team and **C. W. Moore** (BSEM '95).

- **Fred Kozel** (BSEM '80) was promoted to Vice President-Operations, Jim Walter Resources, Inc. Brookwood, AL in charge of all mining operations.
- **James Laurita, Jr.** (BSEM '82) recently married in August 2003. (see ALUMNI NEWS page 12)

experience and vision of the future, Mr. Garges recommended that students consider acquiring some accounting and financial skills in addition to technical engineering knowledge.

Calendar of Events Spring, 2004

Feb 23-25 SME Annual Meeting and Exhibits, Denver, CO. with MRAC Reception.

April 4 (Tentative) Mineral Resources Award Banquet, Lakeview Resort & Conference Center, Morgantown, WV.

April 22 William Poundstone Lecture and Distinguished Engineer of Mines Award, Mineral Resources Building, Morgantown, WV.

April 23 MinE Dept Visiting Committee Spring Meeting, Morgantown, WV.

May 6-8 WVCMI/WVCA Joint Meeting, Glade Springs Resort, Daniels, WV.

May 16 WVU Commencement. Morgantown, WV.

Life Since WVU Mining Engineering—Shelley Shalvis

As a recent graduate (BS MinE '01), I wanted to share with you what life is really like outside of Morgantown. As much as we all would like to stay in college, one does have to move on someday.

Upon graduation, I learned that there are many different opportunities available for grads of WVU. While wanting to be involved with mining, I chose to accept an offer of employment with Rockwell Automation, manufacturer of DODGE® mechanical transmission products and Reliance Electric® motors and drives, headquartered in Greenville, South Carolina. Now, with only 2-1/2 years of work experience under my belt, I can say that I have lived in three different states and worked with 9 key industries, including, Coal Mining, Aggregates, Food Processing, Unit Handling, Lumber, Metal, Petro-Chemical, and HVAC.

While in the field, I have worked with mining companies and helped them find ways to decrease downtime and in-

crease production. This is key in any industry, but most important to Coal Mining. We all know what happens if a long-wall goes down or if a conveyor belt breaks. Industry standard says that it will cost \$500 for every minute a coal conveyor is down. At Rockwell Automation, we try to prevent these problems by gathering information and using tools to provide our customers with the best possible preventive solution. For instance, is it worth purchasing a more expensive product (i.e. bearing or motor) for longer life or easier maintenance?

I have worked with almost every application in the mining industry from Highwall Miners and Overland Conveyors to Crushers and Washers. As for the food and beverage industry, I have worked with industry leading soft drink, beer, and food manufacturers that make the name brand products I consume everyday. In addition, I have worked with Original Equipment Manufacturers (OEM) who make water heaters,



Shelley Shalvis working at her Rockwell Automation Office.

Chief Executive Officer (CEO). I can honestly tell you that you are starting at the right place with WVU's Mining Engineering program. It has afforded me the foundation I needed to stand out in this very competitive market-

conveyor belts, fans, glass, and much more.

My advice to students is to enjoy college and work hard. It will pay off, even though it is sometimes hard to see in the midst of exams and projects. Whatever your passion may be, follow it. Some of you may have dreams about becoming a Sales Engineer, Mine Engineer, Superintendent, President, or

place.

Currently, I reside in Knoxville, TN. My territory consists of East Tennessee, East Kentucky, Western North Carolina, and Western Virginia. As for the future, my plan is to continue to assist customers in making their process or operation the best in the Industry by using DODGE and Reliance Electric Products and Services.

James Laurita, Jr. presented Laurel Aggregate Mines and hosted Mine Tour



MinE students eager to diversify their field experience, arranged for Jim Laurita to speak at the October SMESC meeting, and hold a tour of his Lake Lynn facility following his presentation. Mr. Laurita (BSEM '82), a former WVU graduate, hosted the tour.

The Laurel Aggregates quarry mines the Greenbrier Limestone—a calcium rich softer grade limestone, and the Loyalhanna Limestone—a hard silica-rich limestone. While visiting, the group was able to see the blasted limestone being loaded into 85-ton diesel trucks and fed into the

48" x 60" Jaw Crusher along with witnessing a shot detonation. It was lucky to have chosen a blasting day for the tour, and so exciting to see the earth moved under their feet.

Co., and two graduate students (see **the Greenbrier** on page 3) (**THE GREENBRIER** from page 4) Dan Alexander on the Evaluation and Estimation of Mine Catastrophe Cost Impacts; and Bo Yu on Advantages of 3-D Computer Modeling to Simulate and Maximize Shearer Cutting Tech-

Ben Hardman spoke of J. H. Fletcher & CO., and showed a 30 ft High Mobile Roof Support

Ben Hardman (BSEM '95), District Sales Manager, visited WVU September 3rd to tell MinE students about the company, products, and functions of J.H. Fletcher & Co. Then on Sept., 5th, the students had the opportunity to tour the facility in Huntington, WV. The tour included seeing the different workshops where companies from all over the world send their mining equipment to be repaired and even over-



hauled.

Some of the tour highlights were seeing a mobile roof support nearly 30 feet tall and introduction to the roof bolter with feedback control system, a project in collaboration with WVU, which allows the geological conditions of roof to be monitored and recorded as a roofbolt hole is being drilled. The new roof bolter feedback controller was demonstrated and students were allowed to try their hand at drilling.

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First Place in 2003 Senior Mine Design Project



Hilmar Ireland (right) and Rebecca Hardy (left) received First Place in the Senior Mine Design Project competition of the Pennsylvania Coal Mining Institute of America (PCMIA) and the Pittsburgh Section of the Society of Mining Engineers (SME-PS). The awards were given at the joint annual meeting on October 25, Meadowland, PA. Their senior mine design advisors, Dan Alexander and Dr. Keith Heasley were also on-hand to share the honor.

SMESC attended Joint Meeting of WVCMI/SMECAS at the Greenbrier

SMESC students and MinE faculty attended the Joint Meeting of West Virginia Coal Mining Institute (WVCMI) and SME Central Appalachian Section (SMECAS) at the Greenbrier in White Sulphur Springs, West Virginia, October 16 – 18,

Senior Students visit the RAG PA Operations Office

Students from the MinE Mine Design class visited the RAG-American Exploration Offices in Waynesburg, PA in November to see how geology is applied to mining engineering. RAG's Eastern Technical Support Group manages exploration drilling, in-mine hazard mapping, geophysical evaluations and production forecasting databases. Brian Shaffer and Scott Peterson, geologists, explained how they support coal mining opera-

tions' long and short term planning goals and demonstrated their work with examples of projects they had done recently. It is important for students to understand how a wide variety of professionals contribute to the successful operation of a mine. Brian and Scott certainly helped. WVU students Don Swartz, Matt Jordan, Kris Lilly, Justin Bushneck, Mike Mullins and Joseph Zirkle joined faculty Keith Heasley and Dan Alexander in the visit.



At Joint Meeting of WVCMI and SMECAS, SMESC students listened intensively to the presentation. From left to right: Edin Delic, Olayemi Akinkugbe, Rebecca Hardy, Kris Lilly, Ben Mirable, and Dr. Keith Heasley,

2003. Presentations from WVU included Dr. Syd Peng on the advances in roof geology map-

ping with the Feedback Controlled Roof Bolter designed in conjunction with J. H. Fletcher &

MRAC Banquet and MR Museum-**Have You Visited the Mineral Resource Museum Lately?**

The annual Mineral Resources Alumni Chapter (MRAC) banquet was held on October 10, 2003 at the Erickson Alumni Center. A record number of MinE alumni turned up for the event. After a welcome by Jerry Zimmerman, president of MRAC, Professor Royce J. Watts presented a talk on the collections held by the MR Museum and the museum endowment. Several items of the museum's valued collections were also on display.



From left to right: Y.Q. Zhang PhD '03, Khaled Morsy PhD '03, Murali Gadde MSMinE '03, Rizwan A. Qayyum MSMinE '03, Jeff Kukura BSEM '87, Scott Pack BSEM '83, Bob Thomas BSEM '67, Jason Hustus BSEM '96, Robert L. Baldwin BSEM '82, Charles Howard BSEM '83, Daniel Lancy BSEM '80, Nancy Dorset BSMInE '01/MSMinE '03, James W. Boyd BSEM '69, Bill Wolf BSEM '85 (Vice-President of MRAC), Heather Miller BSMInE '02, James L. Laurita, Jr. BSEM '82, Jerry Zimmerman BSEM '95 (President of MRAC), Carrie Daugherty BSMInE '02, Jim Dean MSEM '90, Rebecca Hardy BSMInE '03, Rob Murray BSEM '98, Josh Rockwell BSEM '99 (Council member of MRAC), Jim Turner BSEM '98, Wahab Khair BSEM '68/MSEM '69, Ryan Murray BSMInE '02. Photo taken by Yi Luo PhD '90.

30 years at WVU and in Coal

by

Syd S. Peng

Chair and Charles T. Holland Professor, Mining Engineering

Preamble

In May 1974, Felicia and I came to Morgantown (a place we knew nothing about) to interview at the request of Dr. Jay Kelley, then Dean of the School of Mines, West Virginia University. We were so impressed by the opportunity and potential that the School of Mines could offer, i.e., teaching and research in the middle of the world's richest coalfield, we promptly accepted Dr. Kelley's offer and moved to Morgantown in July 1974, even though it was a reduction of salary on my part and many of our colleagues and friends had never heard of Morgantown and WVU. That was 30 years ago!

Academics

In the mid 70s student enrollment and graduates in mining engineering at WVU were growing rapidly (Figs. 1 and



Dr. Jay H. Kelley, Dean of COMER, 1970-1978.

2). In fact, the mining enrollment and number of

graduates were the largest in the nation from 1976 to 1979; and yet, we only had 5-6 faculty members (Fig. 3). Obviously there were considerable growing pains!

In January 1978, with the consent of program faculty, Dean Kelley asked me to run the Mining Engineering program as chairman. Although this was not



Mineral Industries Building, also known as White Hall, was dedicated in 1942 and housed the School of Mines and College of Mineral and Energy Resources until 1990.

my original objective for coming to WVU, I liked the challenge! At that time, due to a lack of resources to deal with the large enrollment, emotions ran high among faculty and students. Many new faculty came and went, including Drs. Jan Mutmanský and Cal Konya. I

Dr. Syd Peng, New Chair of Mining Engineering Program, 1978

was determined to make it work!

My simple approach was to divide the teaching load. Every faculty member not only had a full teaching load, including me, but also covered a variety of subjects. It was during this period that I learned to teach all mining engineering subjects.

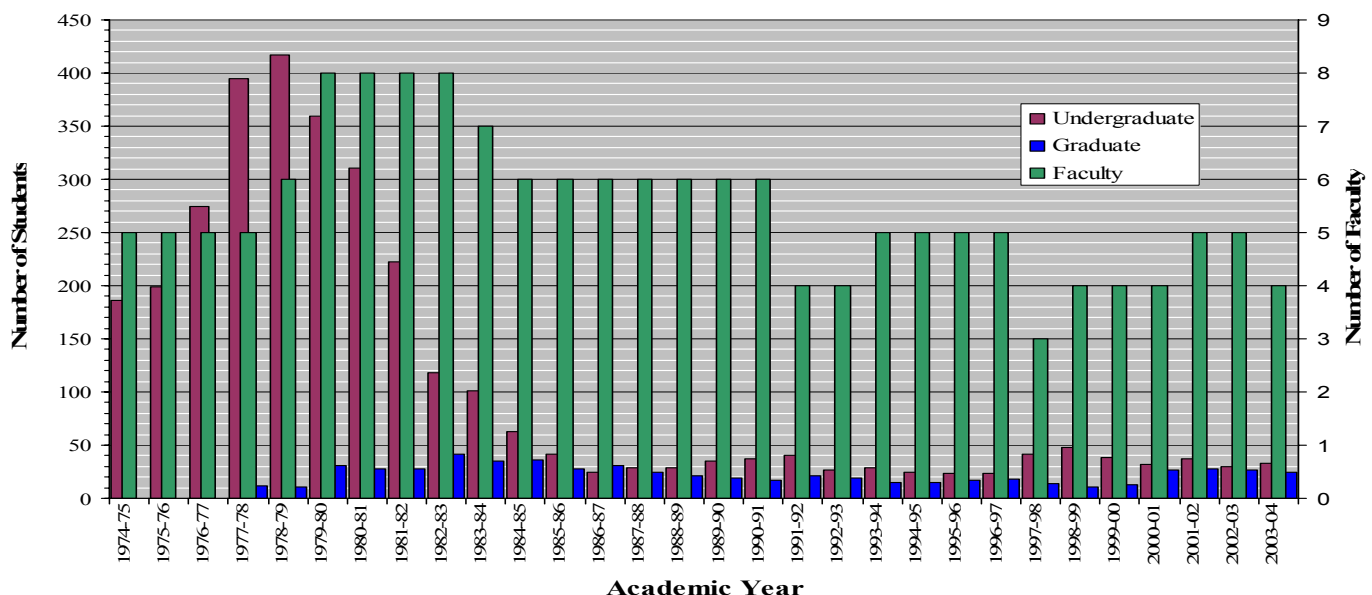
In the past 30 years we changed the BS curriculum

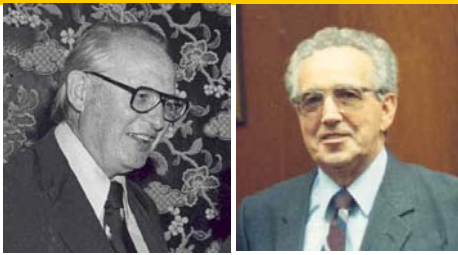
eight times, sometimes because of our own convictions while other times due to recommendations from



Dr. Syd S. Peng.

Figure 1 Enrollment, Department of Mining Engineering





Professors E. J. Sandy (left) for Mine Design, Mine Surveying and Health & Safety, and Donald Bondurant (right) for Mine Surveying and Reserve Valuation.

alumni, industry and ABET (Accreditation Board for Engineering and Technology) program evaluators. Prior to 1980, the BSEM (BS in Engineering of Mines) had three options (Underground, Surface and H&S) with 137 credit-hours.

Between 1980 and 1982, we eliminated the options and combined them into one curriculum with 141-hours. This enabled us

to measure up to the rapid developments in technical and legal fields, and management skills. Today the program has been reduced to 134 credit-hours to follow the current national trend. In 1997, when ABET came for an accreditation visit, the program evaluator recommended a program name change to comply with the accreditation criteria. Consequently, the BSEM was changed to BSMiE (Bachelor of Science in Mining Engineering) effective Fall 2000.

BSEM received its accreditation by the ABET predecessor in 1936 - the year it began to give accreditation to



Dr. Jan Mutmanský (left) for Ventilation and Operation Research; and Dr. Cal Konya (right) for Explosives.

engineering programs in the U.S. Accreditation for BSEM continued uninterrupted up to the present. Today we are in the middle of another ABET accreditation cycle under the new EC 2000 guidelines. Again we have reviewed

the curriculum with our stakeholders (employers, alumni, students & faculty) and better defined our mission, objectives and outcomes. Mining courses have been

BSEM was changed to BSMiE in 2000

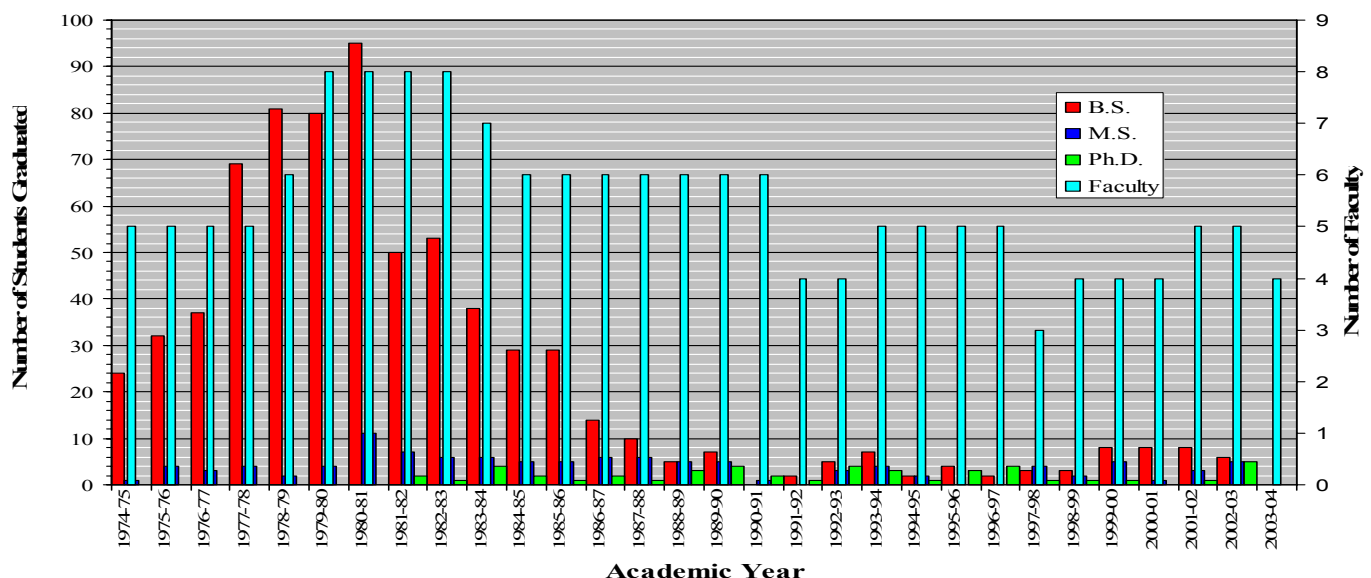
revised to reflect this review. This process will continue.

As we all remember, the energy crisis of the 70s did not last long. Our enrollment began to decrease in the early 80s while schools in the neighboring states were still climbing. I believe coal is West Virginia and our program has always been intimately tied to the coal industry. Consequently, our enrollment trends more quickly and precisely reflects the activity of the coal industry than any other school. The decline bottomed out in 1989 and enrollment from that time stayed



From left to right: Dr. Duk-Won Park for Ground Control and Ventilation; Dr. Y. J. Wang for Mine Ventilation and Mine Design; Dr. Ronald Rollins for Explosives; Dr. Larry Adler for Mining Equipment and Dr. A. Wahab Khair for Ground Control.

Figure 2 Graduates, Department of Mining Engineering



approximately the same. In retrospect, our current enrollment is more of the norm in the 20th century. There were two large enrollment periods, one immediately after World War II and the other in the mid 70s to early 80s.

In the 1970s, women became interested in mining engineering. The first female BSEM graduated in 1977, followed by 13 graduates between 1978 and 1981. Their interest decreased greatly in the 80s and 90s. But the current trend is an increasing interest since the late 1990s. So far we have a total of 30 female BSEM and BSMInE graduates. However woman's interest in advanced

Extension Services field agents to WV high schools. This effort kept the enrollment stable, although small.

After merging with the College of Engineering in 1995, the number of sophomores entering mining from the general freshman engineering program was

far lower than before the merger. So we initiated a recruiting program by direct telemarketing. This contributed to the slight increase in our enrollment in 1998 and 1999. We later expanded the program to include visits to high schools in WV and the surrounding states. Many alumni were



Gill Gerwig (BSEM '77) — WVU's first female Mining Engineering graduate.

instrumental in arranging and participating in the visits. It was during this period that I realized the public have a great misconception about coal, and that we, the coal people, must aggressively convey the real advantages coal provides the public and that coal is here to stay.

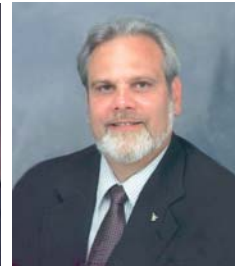
For placement of new graduates, I remember in the 1970s, job opportunities were super. Many coal companies came to wine and dine the graduating seniors and they all had multiple offers, some had up to 10. But beginning with 1980, the job market began to shrink and there were a few graduates who did not get any offers before graduation during the 1980-1986 period. Thereafter, as the number of gradu-

Students Recruiting by Direct Telemarketing and Visiting High Schools

degrees in mining engineering came considerably later. The first and only MSMinE graduated in 2003, and the first and only PhD MinE in 2004.

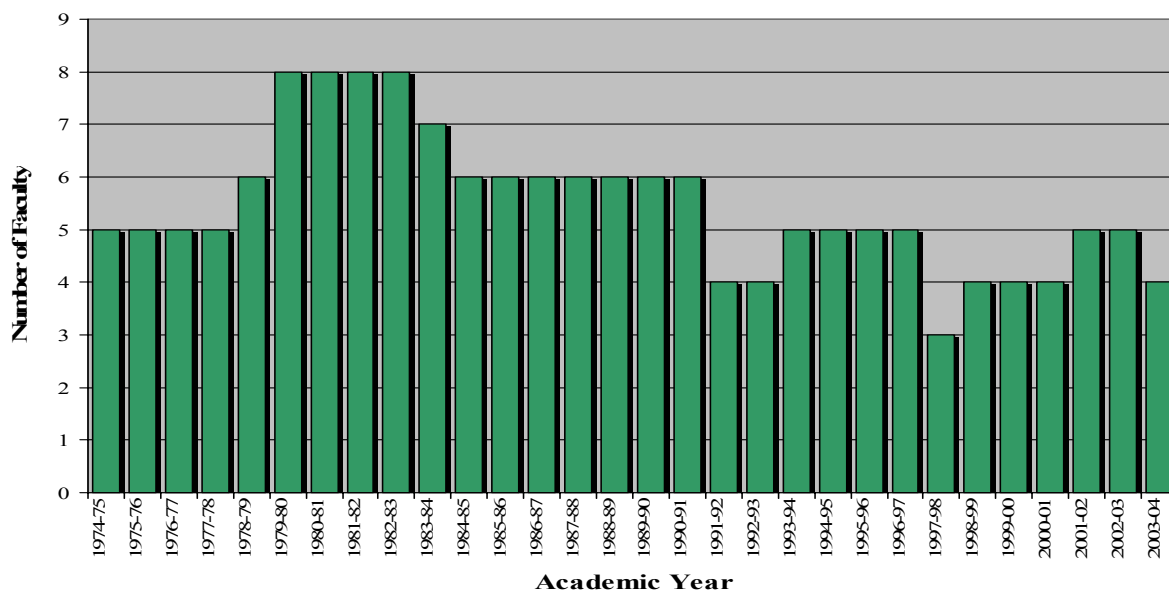
As the enrollment declined in the mid 1980s, COMER began to recruit freshman through direct mailings and visits by Mining

Deans of COMER (from left to right): Joseph W. Leonard, 1978-1981; George Fumich, 1981-1984; and John Schroder, 1984-1991.



Dean of COMER: Dr. Larry Grayson (left), 1991-1994. Deans of CEMR: Dr. Allen Cogley (middle), 1995-2000, and Dr. Gene Cilento (right), 2001-present.

Figure 3 Faculty, Department of Mining Engineering



ates declined, all BSEM graduates received at least one offer before or soon after graduation. A great majority of our graduates sought careers in the coal industry, with the remaining few going to the aggregate industry or industrial minerals. Right now and in the foreseeable future, job opportunities for our graduates are excellent, because all major coal companies say the average age of their employees is 52-54 years old and they are desperate to train the new graduates to replace them.

Traditionally, WVU's Mining Engineering Program is known for producing top managers for the coal industry. Our alumni's achievements have well-attested to that. While trying to maintain this standard, I was also working on expanding the department's reputation for technology development. Toward this end, I initiated the PhD program, in cooperation with the College of Engineering in Fall 1978 while applying for our own PhD in Mineral Engineering, which was approved in Spring 1986. The first two PhDs in Mining Engineering graduated in May 1982. Today this program has produced about 50 PhDs covering all major subjects in



Charles T. Holland (left), Dean of School of Mines prior to 1970 and Dr. Jay H. Kelley for Mining Machinery.

mining engineering.

In the past 30 years I have served seven deans, five for COMER (Jay Kelly, 1974-1978;

Joseph Leonard, 1978-1981; George Fumich, 1981-1984; John Schroder, 1984-1991; and Larry Grayson, 1991-1994) and two for CEMR (Allen Cogley, 1995-2000, and Gene Cilento, 2001-present). As for faculty, we were given resources in 1979 to hire

Drs. Larry Adler and Ron Rollins to handle the large enrollment. In Fall 1981, Dr. Wahab Khair joined the faculty to replace Dr. Duk-Won Park (1979-1981) who left in Spring 1981. After the mid 1980s the senior faculty began to retire; E.J. Sandy in 1985, Don Bondurant in 1986, Jay Kelley in 1987, Ronald Rollins and Larry Adler in 1992, and finally Y.J. Wang in 1997.

In 1987, with the recommendation of a selection committee, Dean Schroder appointed me as the Charles T. Holland Professor of Mining Engineering. In addition to being one of the eight named professors at WVU at that



Drs. G. T. Lineberry (left) and Daniel Su (right) were the first two PhDs in Mining Engineering, 1982.

The School of Mines changed to COMER in 1975

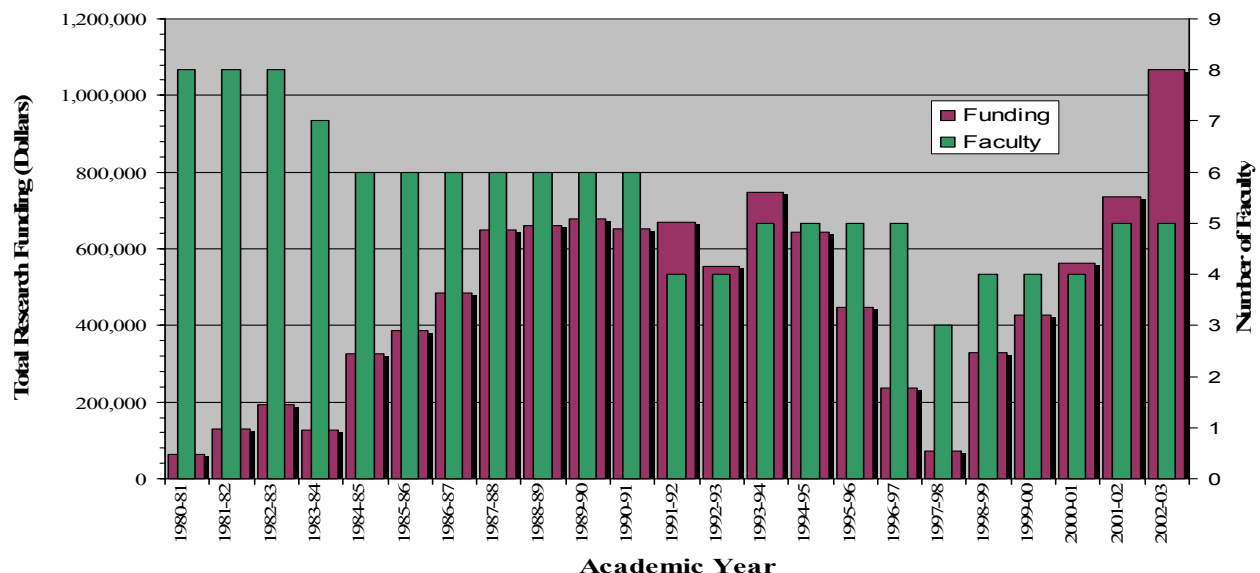
time, it was an honor to carry the name of our former dean of the School of Mines who was well-known for his coal pillar design formula.

In January 1975, the School of Mines (SOM) changed its name to the College of Mineral and Energy Resources (COMER) taking advantage of the on-going energy crisis and expanding the programs to

Merger of COE and COMER in 1995

cover mineral processing and mineral resources economics. In July 1995, COMER, under the initiation of former Dean Larry Grayson, merged with the College of Engineering to become CEMR (College of Engineering and Mineral Resources). The Department of Mining Engineering was officially established in January

Figure 4 Sponsored research funding, Department of Mining Engineering



1980 and the Department of Mineral Processing was merged with it in July 1994. Dr. Felicia Peng, one of the two

New COMER BLDG dedicated in July 1990



COMER Building dedicated in July 1990. In 1995, its name was changed to Mineral Resources (MR) Building.

MPE faculty members elected to join the MinE faculty.

We began to plan a new COMER Building in Spring 1980. The bond sale was authorized in 1986 by the WV legislature. The ground breaking was held in spring 1987 and the building was dedicated in July 1990. The experience of planning for and constructing a



Dr. Felicia Peng for Coal/Mineral Processing and Computing Methods.

new building in such a long period of time was extraordinary. Under the coordination of Associate Dean Watts, every faculty member planned and watched step by step the completion of their state-of-the-art laboratories. In

1981, we set up the PC Computer Laboratory, the first ever at WVU. By the mid 80s, we had set up four state-of-the-art laboratories: Rock Mechanics, Mine Ventilation, Health & Safety, and Mine Design. These labs were further upgraded in conjunction with the new building.

Over the years I was most impressed by our alumni, they are the most loyal supporters of our program. In order to recognize their achievements, we established the William N. Poundstone Lecture and Distinguished Engineering of Mines Award in Fall 2000 and held once per semester. The candi-

Poundstone Lecture and Distinguished EM Awards began in Fall 2000

dates are selected by a committee consisting of our alumni, employers, faculty, students and friends. A wall commemorating this award has been erected in the hallway of the Department office. In order to increase our com-

munication with alumni and friends, we also publish a semi-annual newsletter, BLACK DIAMOND beginning with Spring 2001.



Associate Dean Royce Watts, COMER/CEMR, 1979 –Present, oversaw the construction of COMER (now MR) Building .

tional Research Center for Coal and Energy, and made it available for all university academic programs. Our faculty took advantage of this opportunity to develop various programs and attract external funding (Fig. 4). In 1998, through the joint

BLACK DIAMOND MinE Department Newsletter started in Spring 2001

initiative of the WV Surface Mining and Reclamation Association and the WV Coal Association, the Bureau was recreated as the Coal and Energy Research Bureau (CERB) by the WV Legislature. Further, the



Distinguished EM Exhibit Wall in Mineral Resource Bldg.

Research

The Coal Research Bureau, which was established by the State Legislature in 1960, was housed in and administered by the School of Mines, but was independent of academic programs. During the energy crisis of the late 70s, WVU, in its strategy for research expansion, took over the Bureau and established the Energy Research Center which later changed to Na-

Bureau was to be governed by an Advisory Committee, the chair of which is the chairperson of the Department of Mining Engineering, WVU.

Immediately upon my arrival in 1974, I started my research on ground control, which included powered supports design for shortwall and longwall mining. The shortwall project used the Valley Camp #3 mine near Dallas Pike, WV, while the longwall project used the Olga Coal Mine, Coalwood, WV. Back then a trip from Morgantown to Coalwood took more than six hours and there were few things in between. The only big thing was the

construction of the New River Bridge. While in the Olga mine, we roomed and boarded in the company dorms and shopped in the company store. The powered support research reached its peak when the British Institution of Mining Engineers selected us for the Overseas Award in January 1992 at its annual meeting for our 2-leg shield work. Today, 2-leg shields are the standard for longwall mining all over the world.

In the late 70s, I initiated research on surface subsidence due mainly to longwall mining and then expanded to abandoned mined land subsidence. With this experience, we developed a comprehensive surface subsidence prediction model. For the past 15 years, we used this model to successfully predict and mitigate surface subsidence damages to hundreds of all types of surface structures affected by longwall mining. This model is also very popular in other coal producing countries. Today, we are the only surviving group in subsidence research and our published results form the great majority of US coal mining subsidence literature.

Under Dean Fumich's guidance, we sought congressional assistance and established the Generic Mineral Technology Center for Respirable Dust in 1983 in conjunction with Penn State. The program continued until 1998 with total funding

Generic Mineral Technology Center for Respirable Dust established in 1983

reaching nearly \$22 million. Again, most mining engineering faculty participated and developed research areas in this program including Dr. Khair's new cutting bit design study. This contributed to the research funding surge in the mid and late 1980s (Fig. 4).

However, in the mid 1980s, when the National Research Center for Coal and Energy took over, the program emphasis changed from mining engineering control to fundamental and medical research. In this program we developed a 3D two phase dust distribution model for longwall faces.

With the encouragement of Dean Schroder, I established the Longwall Mining and Ground Control Research Center in 1985. This Center works closely with coal companies all over the world and is responsible for many improvements in longwall mining, surface subsidence and ground control.

Establishment of Longwall Mining and Ground Control Research Center in 1985



With the termination of U.S. Bureau of Mines in 1996, mining research funding practically stopped. This was reflected by a period of reduced research funding for our program (Fig. 4). In 1999, the U.S. DOE's Mining Industry of Future program began, followed by NIOSH's Mine Health & Safety program solicitations. Although highly competitive, our faculty have competed and done well by any measures and this plus the CERB funding accounts for the increasing funding since 1999.

Services

Under the COMER structure, the Dean was the representative

to interact with our constituent – the coal industry of West Virginia. So during this period, our service activities aimed mainly at the national and international levels following the traditional requirements of a land-grant doctoral university. We developed in mid 1980s several short courses such as longwall mining, surface subsidence, ground control, and professional engineers review, and offered them annually until mid 1990s. We also developed two conference series. The short course attendees came from all mineral producing states in the U.S. and several foreign countries including Canada, China, and Mexico.

After the merger of COE and COMER in July 1995, the Department chair's role expanded. I began to get involved in more state-wide activities such as Mountaintop

Expansion of MinE Dept Chair's Role in the State Wide Services

mining issues, the Coal and Energy Research Bureau, and more recently, the State Mine Inspectors's Examining Board (MIEB). Being the chair of MIEB, I have begun to improve the selection process and to make sure that our state mine inspectors are the most well-qualified group possible, and the results in the 2003 roster have shown we have been successful.

When I started research in the mid 70s using coal mines as my laboratories, I found there was a considerable gap between the state-of-the-art ground control technology and its application in mine settings. In other words, many operators did not know what technology was available for mining operations. Conversely, many

International Ground Control Conference was born in 1981



researchers performed research using well-controlled laboratory settings and did not realize the technology they developed may not be applicable to the ever-changing mine settings. Therefore a forum in which mine operators, researchers, equipment manufacturers, consultants and government regulators could exchange information was badly needed. That's how the Annual International Ground Control Conference was born. Since its inception in 1981, more than 1,000 papers have been presented and there have been more than 4,000 attendees from all major coal producing countries. Today "Ground Control" which is the application of rock mechanics principles to mining operations is standard terminology in mining engineering.

Closing Remarks

Today, I believe, and I am sure you will agree, that WVU's Mining Engineering Program has not only maintained its reputation as being one of the premier institutions producing the best graduates for coal mine operations, it has also solidly established a world-wide reputation as the leading institution for technological developments in coal mining.

A Fulbright Scholar from Bosnia and Herzegovina by Edin Delic

I am a professor in the Dept. of Mining, Geology and Civil Engineering, Tuzla University, Bosnia and Herzegovina. I am here at West Virginia University for eight months as a Fulbright Scholar under the coordination of Professor Syd Peng.

To become a Fulbright Scholar is my longtime dream, because it is a highly respected and recognized program in my country, and in my opinion, all over the world.

How did I select West Virginia University as the host institution? West Virginia is wild and wonderful and Morgantown is a very nice small town surrounded by many coal mines. But most importantly, West Virginia University is on the top of my list because of

its excellent reputation in the world mining scientific and research community.

During this short eight months, I would like to learn more about the curriculum of U.S. mining engineering programs and carry out my proposed research project "Computer Applications in Mining Operations." The mining industry in Bosnia and Herzegovina is facing serious problems in its development. I believe the U.S. experiences will be very helpful for solving some scientific and technical problems in my home country. I will try to propose, discuss and research some of these problems here. In addition, I am joining Professor Peng's research team working on some of the on-going research projects in the area of my interest. Finally I would not

consider my work successful without maintaining contact and communication with people here long after I return home. Cooperation with West Virginia University in areas such as joint research, student exchange and other activities is something that I would like to continue after returning home.

I came to Morgantown with my whole family. Dino is attending the 1st grade while my wife and the younger son are attending intensive English classes. I insisted they come with me to be part of this important project in my life and insure its success.



Dr. Delic's Family: from left to right: Edin, Azira, Dino and Adi Delic at Coopers Rock, WV.

A Sumo Wrestler comes from the Far East by Takashi Sasaoka

I am from Japan. I just received my doctor's degree in March 2003 from the Dept. of Earth Resources & Mining Engineering, Kyushu University, Fukuoka, Japan.

As you already know, the mining industry is called a "Sunset Industry" in Japan. There are no major coal mines left and all other types of mining such as limestone and metal mines are facing difficult conditions such as high cost, adverse geological conditions, etc. At present, Japan depends largely on foreign countries for raw materials and energy re-



Dr. Takashi Sasaoka of Japan.

sources.

"Are there needs for Mining Engineers in

Japan?" The answer is "Yes" in my opinion. I think mining engineering still plays an important role in various fields such as operations of domestic mines, of overseas resources, overseas technical & financial cooperation and so forth. So, in the future, I would like to be an engineer and/or a researcher in the mining field. However, it is very difficult for us to study and develop new mining technologies due to a lack of mine sites in Japan. We not only need to know the nature and technology of mining industry in Japan but also those in other countries. Moreover, I was originally very interested in underground mining and I was greatly impressed by the ground control techniques developed in the United States

when I took part in the 21st *International Conference on Ground Control in Mining* in August 2002 here in Morgantown, WV. This is why I wish to know and do research on the state-of-the-art ground control techniques in the United States.

Professor Peng gave me a great opportunity to join his team and do research in his laboratory. I am now working on the MRGIS (Mine Roof Geology Information System) project. It is a very interesting subject to me. My wish is to do research so hard as to lose my weight even if I will not be able to become a Sumo Wrestler.

Visiting Committee for MinE Department met on November, 14, 2003 — Focus on Student Recruiting



MinE Dept Visiting Committee Members attended the Meeting. From left to right: Scott Pack, RAG American Coal; James Boyd, John T. Boyd Co.; Walter Scheller, III, CONSOL Energy; Ben Statler, Pinnoak Resources; Stanley Suboleski, Federal H&S Commission; Gary Hartsog, Alpha Associates; Barry Dangerfield, Pinnoak Resources.

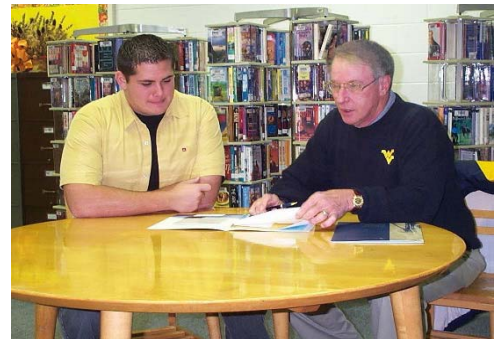
New MinE Recruitment Program Initiated at WVU

Under the direction of Drs. Syd Peng and Keith Heasley, a new program to recruit students for Mining Engineering has been established. William R. Ryan (see picture at right), a retired Monongalia County School Administrator, has been retained to design and implement an enhanced student recruitment program. Mr. Ryan is the son of the late Leslie C. Ryan, former Director of the Department of Mines and a pioneer in mining safety in West Virginia. During September, Mr. Ryan contacted

school counselors in 35 high schools in West Virginia and Maryland. The high schools were selected based on the size of the school, the location of the school, and the past student interest in Mining Engineering. He has traveled extensively and met with the school counselors to explain the opportunities in our program and requested the counselors survey their students for interest. Prospective freshmen information forms are now being returned. In the next step individual or group contact will be

made with students to explore a career in Mining Engineering. If you know a high school senior interested in Mining Engineering, please contact Mr. Ryan at 1-304-292-1982 or at

caryan@adelphia.net, or Dr. Syd Peng at 304-293-7680 ext. 3301, or at Syd.Peng@mail.wvu.edu.



Bill Ryan was talking to a high school student, Frank Reid, at University High School, Morgantown, WV.

(ALUMNI News from Page 2)

- **Richard Lucas** (BSEM '53) passed away in March 2003.
- **Pius Mokgokong** (MSEM '87) is a shareholder in a venture aimed at developing a coal mine in South Africa which should start producing around March 2004. He also does consultancy work for Anglo Coal, Eskom Grinaker-LTA and a few other mining entities in South Africa.
- **Myron P. Nehrebecki** (BSEM '76) has been working on configuration and development of SAP enterprise resource software in the area of Human Resources since September 2001. CONSOL has effectively switched all

computerized business activities over to SAP.

- **James Simpson** (BSEM '80). The picture at right was taken in front of the new library at WVU. All three of his children have now graduated from WVU. Brian—BS Mechanical Engineering, Bethanie—BS Dental Hygiene and the youngest son Brandon—BS in Geology and is currently enrolled in the Master's program in Safety & Environment Management. They are proud of their three WVU graduates children.
- **Joseph V. Tassone** (BSEM '51) is working as a part-time consultant in Intellec-



From left to right: Debbie (Mrs. Simpson), Brian, Brandon, Bethanie and James Simpson in front of new main library, WVU.

tual property matters for Dayco Products LLC.

- **Fred R. Toothman** (BSEM

41, MSEM '46) has retired from both CSX and President, Vandalia Book Co. He has completed homemade books: WW II Action, and Four Toothman Brothers.

- **Edward Trompak** (BSEM '78) passed away in July 2003.
- **Jeffrey A. Wilson** (BSEM '80), in addition to being Vice President of James River Coal Co., he is now President of James River Coal Service Co.

Faculty Personal Note

BSEM Alumni in Fuchs' Century Lubricants



From left to right: Kevin Haring (BSEM '77), Steve Williams (BSEM '84), John Elliott (BSEM '79), Chuck Herron (BSEM '78), Roger Russell (BSEM '79), Syd Peng, Phil Sims (BSEM '79), and Bernie Bachman (BSEM '77).

Longwall USA International Conference and Exhibit was held on June 3-5, 2003. MinE Dept Chair, Syd Peng, was surprised to find out his seven former students are working for the same company. The photo at left shows seven BSEM Alumni employed by Fuchs' Century Lubricants gathered at the Fuchs' booth. John Elliott was recently promoted to be responsible for Fuchs' international sales.

Dr. Felicia Peng participated in the First Center of Advanced Separation Technology (CAST) workshop in Charleston, WV on November 19-21, 2003. She presented a paper entitled, "Fine Dolomitic Phosphate Pebbles Flotation Using Selected Fatty Acid Collector in Flotation Column." The project is funded by U.S. Department of Energy through the CAST Program, which is jointly administered by Virginia Tech and West Virginia University. Dr. Peng also participated in the Northern West Virginia Coal Preparation and Engineering Society meeting on December 10, 2003. The topic of meeting was innovated air classifying/abling for dry coal separation.

Justin Bushneck was awarded NSSGA Scholarship



Justin Bushneck, a senior received the National Stone, Sand and Gravel Association Scholarship of \$2,500 from MinE faculty in an award ceremony. From left to right: Dr. W. Khair, Dr. S. Peng, Justin Bushneck, and Dr. K. Heasley.

Dan Alexander Received SMEPS Service Award



From left to right: Jim Kvitkovich, Dan Alexander, and Jürgen Brune.



Dr. K. Heasley congratulates Len Roman on receiving the student grant award from PCMIA & SMEPS 2003.

Faculty Personal Note

Dr. A. Wahab Khair participated in the **Third International Conference in Mining Tech-**

niques 2003, held in Krakow, Poland, September 16-19, 2003. Dr. Khair is a member of both the Program and Scientific Committees of this Conference. He presented a technical paper entitled "Transient Study of Continuous Miner Rock Cutting Process." He also chaired two sessions of the Conference.

MinE Students started New Public Outreach Project—GEM Shows for Kids

Mt. Chateau GEM Show:

The WVU Student Chapter of the Society for Mining, Metallurgy & Exploration (SMES) held its first **Minerals Booth for Kids**, at the Mt. Chateau, Morgantown, WV. Gem, Mineral, & Fossil Show which has been held in September for the last 12 years and not had



any activities for kids.

This year eighteen student volunteers from the Department of Mining Engineering, WVU staffed the **Minerals Booth for Kids** on Saturday and Sunday, September 20-21, 2003.

Each child that came through the booth received a free mineral kit containing ten minerals, donated by the Pittsburgh Section of SME. 150 children handled mineral specimens as they listened to the college students describe how each mineral and coal is used and where it is found. In less than 10 minutes they moved with their parents to the

end of booth for their kit. Along with the mineral and coal stories we know they gained a better appreciation for the importance of coal and minerals in their lives.

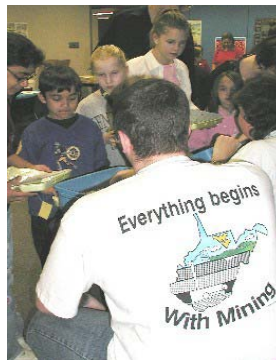
The students from WVU SME Student Chapter are: Greg Boyce, Justin Bushneck, Kris Lilly, Christian Warfield, Jonathan Gordon, Becky Hardy, Dale Hazelton, Matt Jordan, Sami



Stahle, Mike Mullins, Nancy Dorset, Cade Mason, Kevin Rakes, Len Roman, Mike Moten, Rizwan Qayyum, Joe Zirkle, Olayemi Akinugbe and Dan Alexander.

Carnegie GEM Show:

The WVU SME Student Chapter also volunteered for the 3rd time at the Carnegie Museum of Natural History's Gem & Mineral Show **Minerals Education Exhibit** in Pittsburgh, PA, Nov. 22. GEM



Coordinator Kevin Rakes, senior Joe Zirkle, graduate students Nancy Dorset and Becky Hardy, Geology major D. H. Hamilton and faculty Keith Heasley and Dan Alexander participated. The Gem and Rock Show theme this year was **Diamonds Are Forever** and the world's largest diamond was on display along with exhibits of minerals from around the world. Many vendors displayed incredible jewelry and art objects made from minerals. Of course none of this would have been possible without mining because, as it says on the back of the Mining Department tee shirt (photo above):

Everything Begins with Mining!

Making A Gift to the Department

Thinking of making a gift to benefit our Department in your will, living trust, IRA, or other manner? If so, the proper wording is very important to ensure that your gift works out the way you intended.

Have your attorney include a provision directed "to the West Virginia University Foundation, Inc. (i.d. #55-6017181) to benefit the Department of Mining Engineering in the College of Engineering and Mineral Resources." Your gift provision can provide for the creation of an opportunity fund, a faculty development fund, a scholarship — whatever you choose. It will help us in an important way to further our educational, research and service mission.

If you would like further assistance with your gift plans, call Bob Bragg, College of Engineering and Mineral Resources (or Department Chair) at (304) 293-4821 Ext 2240.

And *thanks* for thinking of helping the Department!

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Alumni and Friends

Editors: Faculty and staff, MinE Department

Everything starts with mining!

WE'RE ON THE WEB!

<http://www.mine.cemr.wvu.edu/>

Greetings from the Chair

Dear Alumni and Friends:

The 2003-2004 academic year marks our 30th year of employment with West Virginia University. Felicia and I came to Morgantown in July 1974. We raised our two sons here in West Virginia. In fact our 2nd son, Wildon, was born in Morgantown, WV. Therefore West Virginia is undoubtedly our adopted home state and we are proud of it and its most important industry - coal. At this time, I thought it was most appropriate to reflect on our association with the mining engineering program during the past thirty years. The article is a little bit lengthy, but I believe it

is a fairly complete review of the historical development of the program in the past 30 years.

In this issue of Black Diamond, we feature the Poundstone Lecture by Tom Garges (BSEM '63), president and CEO of Pittston Coal. He had a very interesting and complete review of the evolution of U.S. coal mining equipment. We have posted his text in our website,

<http://www.mine.cemr.wvu.edu> and I invite you to visit and enjoy your reading.

Beginning with this academic year, we hired a recruiting consultant to assist in the freshman recruiting. Bill Ryan,

a retired junior high school administrator, came from a coal mining family and understandably has an excellent appreciation of the coal mining profession. We believe he is an excellent candidate to enhance our recruiting program.

In this issue we have also expanded the "Alumni News" section. We went to MRAC and picked up quite a few pieces of news from the notes accompanied your annual MRAC dues. We offer this section as your "Communication Bulletin" and request your assistance by writing to us or MRAC regarding your recent activities of interest to your former classmates and friends at WVU.

We are also preparing the exhibit booths at the 2004 Annual SME Meeting & Exhibit in Denver, CO in Spring, and 2004 MINExpo in Las Vegas, NV in Fall. Drs. Yi Luo and Felicia Peng are in charge of putting the display materials together. Come and visit our booths in Denver and Las Vegas.

Finally, Felicia volunteered to accept the responsibility for the publication of this newsletter beginning with this issue. We, the faculty, all decided to share writing the articles/news pieces.

Syd S. Peng

IF IT CAN'T BE GROWN, IT MUST BE MINED!