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. Also, pass this newsletter on, or let us know any alumni who are not receiving The Major.

Send to:
Department of Chemical Engineering • West Virginia University
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Or, email updates to linda.rogers@mail.wvu.edu.

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Brief news of professional and family activities for future newsletters: _________________________________________

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For more information, visit our department web site at http://www.cemr.wvu.edu/~wwwche/
Readers whom I have had the pleasure of meeting during the past few months know that I will be stepping down as department chair as of July 1. Hence this marks the last time that I have the honor of using this space to communicate with you, our most loyal of alumni and friends. I will have served in this position for a little over ten years (ten years and four months, but who’s counting), and it is time for new ideas to guide the ship and a new hand on the tiller.

The word for this letter is hope – hope for our current students (our future alums), hope for the department and university, and hope for the profession. (Hope for larger entities, such as the country, is being taken care of by others at a higher pay grade than mine.) In this, I take my reading from the column by Henry Petroski in the most recent edition of *Prism*, the magazine of the American Society for Engineering Education. Professor Petroski’s columns by themselves are worth buying the magazine for, in general. In the April issue, he riffs on “April is the cruelest month,” from T.S. Eliot’s poem, *The Waste Land*. In the academic calendar, he says, April is cruel for thin envelopes of rejection, for term projects and final examinations, and for new graduates to feel that they have to act to prove themselves in the outside world. Then he draws himself up to say, “But the call to action need not lead to disillusion … Engineers understand that time eventually destroys all things, but rather than just lamenting the fact, they try to do something about it.” I find this particularly true in our department and in our profession. New materials with wonderful properties, new possibilities for life-improving drugs, new and renewable sources of energy and, most of all, fresh men and women to help all of these happen; these are the outcomes of this fine department and of the profession to which I have the honor to belong. If I could add just one word to Petroski’s column to personalize its final sentence, it would read, “Some poetry may deal in dismal truths, but the vast majority of chemical engineering adds considerably to the quality of life – however brief and whatever the month.” Petroski’s hope at a low point in the calendar serves us well at this time in our nation’s history.

I look forward to doing more teaching and research in the years to come, and to verifying the statement of one of my predecessors, Joe Henry, who noted that the highest rank in the university is not President, it is Professor.

It is not clear whether the time constraints of publishing will allow my successor to be named officially and to have the time to add greetings to mine in this issue. But I know that you will all support my successor as enthusiastically as you have me. Thank you for a great ten years.

Dady Dadyburjor, Chair
WVU Department of Chemical Engineering
DEPARTMENT NEWS

Dow/Union Carbide Seminar Series Honoring Jean B. Cropley

On April 3, 2009, Mr. Ben A. Christolini, vice president and chief technology officer of UOP, presented the Dow/Union Carbide Reaction Engineering and Catalysis Seminar honoring Jean B. Cropley. The seminar was entitled “Challenges in Energy Diversification.”

UOP is a leader in developing and commercializing technology for license to the oil refining, petrochemical, and gas processing industries. Ben joined UOP after a 15-year R&D career with Unocal Corporation. He was the general manager of R&D for the Process Technology and Licensing Business. Mr. Christolini holds an MBA from the University of Chicago and an undergraduate degree in chemical engineering from The University of Connecticut.

Faculty and Staff News

James Hall, senior instrumentation specialist in the Department of Chemical Engineering, was the recipient of one of the 2008 CEMR Outstanding Staff of the Year Awards. Four awards are given annually to outstanding classified staff of the College. The awards were presented at the annual Classified Staff Recognition Luncheon held on March 19, 2009, at NRCCE.

At the CEMR Weekend of Honors Ceremony on Friday, April 3, 2009, at the Erickson Alumni Center, Dr. Edwin Kugler was recognized as one of three selected as CEMR Outstanding Advisors for 2008-2009. And, Dr. Charter Stinespring was recognized as one of five selected as CEMR Outstanding Teachers for 2008-2009.

Dr. Rakesh K. Gupta, professor of chemical engineering, was recently named a member of the Editorial Board of the International Journal of Polymer Analysis and Characterization (IJPAC). Dr. Gupta’s research interests include polymer processing, polymer rheology, and polymer composites. Dr. Gupta joined the WVU Department of Chemical Engineering in January 1992.

When you enter the new main doors to the Engineering Science Building (ESB), take time to notice the one-ton graphite electrode and stand donated by the Department to the College. The electrode was made by the department’s Carbon Products group. Also note the photographs depicting the various stages of the testing of its fellows in a commercial steel-making plant.

Emeritus Reception

On Friday, May 1, 2009, the College of Engineering and Mineral Resources (CEMR) held the Annual Emeritus Luncheon as part of the University Emeritus Weekend. The following Chemical Engineering Alumni attended the lunch:

Kenneth Barker, BS '49, MS '50
John Baliker, BS '57
Harold Bishop, Jr., BS '50
J. Reginald Dietz, BS '52, MS '54, PhD '56
Jimmie Justice, BS '47
H. Leo Mehl, BS '59

Richard N. Smith, BS '59
Paul R. Westfall, BS '50

Professors Turton and Zondlo were on hand to greet them. The lunch was held at the Erickson Alumni Center. We look forward to seeing you all again next year.
UNIVERSITY NEWS

Dr. James P. Clements has been chosen at the University’s 23rd president, effective June 30, 2009. Dr. Clements comes to WVU from Towson University, where he is the provost and vice president for academic affairs. Dr. Clements has a M.S. and a Ph.D. in operations analysis from the University of Maryland Baltimore County, a M.S. in computer science from Johns Hopkins University, and a B.S. in computer science from the University of Maryland Baltimore County.

ACADEMY NEWS

During WVU’s Commencement Honors Convocation at 7 p.m. on Friday, May 15, 2009, at the Creative Arts Center, Verl O. Purdy (B.S. ’64) was awarded an honorary doctorate degree. A native of Poca, West Virginia, he also earned a master’s degree in business administration from the University of North Carolina in 1973. Verl started his career with BASF in 1969. In 1984 he founded AGDATA, the largest agricultural data analysis and marketing company in the world. In 1997, he founded MedData, a division of AGDATA that provides a state-of-the-art database and real-time transaction processing technology for the health care industry.

Verl is a member of the WVU Foundation Board of Directors, the West Virginia Business Hall of Fame and the WVU Chemical Engineering Academy of Distinguished Alumni. He also established a faculty fellowship in the Department.

Academy Meeting and Induction Ceremony

The most recent meeting of the Academy of Chemical Engineers was held on campus Friday, May 1, 2009. At the banquet and induction ceremony of the Academy, held that evening at the Erickson Alumni Center, two new members were inducted. Their bios follow:

Émer ÓBrion Gunter, B.S. 1980, Monsanto Company, St. Louis, MO

Émer joined Monsanto in 1980 and is the vice-president for environmental safety, health and human rights. She has held a range of positions with increasing responsibility, including director of manufacturing, Latin America, and director of manufacturing, Asia Pacific. She has worked at three different manufacturing plants, had two international assignments, and been associated with six different divisions, including AG, Phosphates, Rubber Chemicals, and Animal Science.

She was born in Wick, Scotland, and is an Irish citizen. She immigrated to the U.S. and West Virginia in 1966. She received a B.S. degree in chemical engineering from West Virginia University in 1980, and an MBA in international business from St. Louis University in 1993.

Émer’s global business and broad manufacturing experience has had a significant impact on Monsanto employees on and off the job. Under her leadership, injuries have been reduced at Monsanto by over 50% in the past six years, the company’s eco-efficiency has improved, the conditions for migrant workers globally have been enhanced, and Monsanto is helping transform safety and human rights in agriculture.

Émer has served on the Wildlife Habitat Council (WHC) Board of Directors since 2003. She was chairman of the Board of Directors from 2007-2009 and has been a member of the Executive Committee of the Board since 2005. She is on the Advisory Board of the Center for Chemical Process Safety (CCPS). She is a past chair of the Conference Board’s Chief EH&S Officer’s Council. In 2003, she was recognized at the YWCA Leader Lunch in St. Louis. She was in the Leadership St. Louis (LSL) Class of 2005-06, and has been a member of the LSL Advisory Committee. She is a charter member of the WVU Foundation Mountaineer Executives and is active in global conservation and sustainability efforts.

Émer and her husband, Michael, have two daughters, Liadan and Ciara. They reside in St. Charles, Missouri.

Paul D. Payne, B.S. 1987, ExxonMobil Corporation, Luxembourg

Paul was born and raised in Charleston, West Virginia, the only son of Paul C. and Delores J. Payne. He graduated summa cum laude with a B.S. in chemical engineering from WVU in 1987.

Following graduation, Paul began his career with Exxon Chemical Company as a process engineer in Baytown, Texas. A series of technical assignments in olefins and aromatics paved the way to move into operations management in 1990. In 1995, Paul assumed the role of Baytown-area engineering manager and was responsible for all capital projects. Following the assignment in engineering, Paul moved to the company headquarters as the Americas planning manager for the polyethylene business. In addition to this role, Paul assumed the responsibilities as product manager for the high-density film business. With the ExxonMobil merger in 2000, Paul moved to the Univation Technology joint venture with Dow Chemical as the director of global catalyst business. In 2002, Paul returned to manufacturing as the Beaumont Polyethylene Plant site manager. A transfer to Rochester, New York in 2004 as the Americas manufacturing manager for the OPP films business was followed by his current assignment in 2006 as the global manufacturing manager for the films business.

Paul and his wife, Jane, currently reside in Luxembourg where both continue to work for ExxonMobil Chemical Company.
Academic Scholarships Announced

The Academy of Chemical Engineers provided scholarships of $1,500 each to two rising seniors and six rising juniors for the 2009-2010 academic year. They were:

- Julian D. Bergstein ('11)
- Jennifer M. Knipe ('10)
- Zachary D. Mayes ('11)
- Matthew A. Payne ('11)
- Matthew S. Thompson ('11)
- Jacob L. Weidman ('11)
- Joseph T. Widmeyer ('10)
- Jennifer R. Wiegand ('11)

All scholarship winners were recognized at the 2008-2009 Annual Academy Banquet on May 1. The banquet was attended by 112 people. (See Academy News, pg 3.)

Student Awards and Presentations

Cassie Cunningham ('09) received the 2009 Professional Promise Award presented by the Pittsburgh Section of AIChE.

Jennifer Knipe ('10) won first place in the subsection of Food, Pharmaceutical and Biotechnology at the annual American Institute of Chemical Engineers meeting in Philadelphia this past November. Jennifer’s poster is entitled “Principal-Component Analysis of the Differentiation of Dendritic Cells,” and is based on her research work with Prof. David Klinke.

Matthew Payne ('11) received a $1500 scholarship awarded by the Pittsburgh Section of AIChE for a sophomore or junior chemical engineering student. Matthew received the award for the 2009-2010 academic school year.

Erica Sladky ('10) won third place in the Catalysis and Reaction Engineering section at the annual AIChE meeting in Philadelphia this past November. Erica’s poster was titled “Shape-Controlled Synthesis of Platinum Nanoparticles and Their Catalytic Effect on the Reduction of Aromatic Nitro Compounds.” Erica’s poster is based on her participation in Research Experiences for Undergraduates at the University of South Carolina last summer.

Senior Design

This year’s senior design was in the area of nanotechnology aimed towards biological processes. The final report was entitled “Hydrogenase Fuel-Cell Technology,” and involved the design of a hydrogen fuel cell and an in-house manufacturing process for the fuel cell. The senior class, led by Chief Engineer Cassie Cunningham, presented its results on April 28, 2009, at the National Research Center for Coal and Energy. The following is an edited abstract of the project report:

A fuel cell is a device that separates a combustion reaction into its two half-reactions. The electrons are forced to travel an external circuit, which creates electricity, before completing the reaction. A storage and delivery method for the fuel is an important factor to consider when designing a fuel cell. Hydrogen is a typical fuel used with fuel cells because its combustion reaction produces only water and heat. The purity of the hydrogen fuel is one area of concern that was investigated.

The fuel cell incorporates an enzymatic catalyst, hydrogenase, instead of the typical platinum catalyst currently used in most fuel cells. Hydrogenase is an enzyme produced by many species of bacteria that oxidize hydrogen. Hydrogenase is less susceptible to poisoning by impurities in the fuel feed.

Phase 1 of the project encompassed the identification of marketable appropriate nanotechnologies. The top six ideas were further investigated during Phase 2. The hydrogen fuel cell was found to be the most economically feasible choice. It also has a known manufacturing process and a variety of applications.

During Phase 3, the group investigated the manufacture of a fuel cell that uses hydrogenase immobilized on a single-walled carbon nanotube (SWCNT) as the catalyst; also hydrogen storage, SWCNT manufacture, and hydrogenase production. Compressed hydrogen was chosen for hydrogen storage. The SWCNTs are produced via a catalyst-free method. Desulfovibrio baculatum is the recommended strain of hydrogenase for the fuel cell catalyst. The methods for growing, separating the hydrogenase, and attaching hydrogenase to the SWCNT have been established. The recommended application is a small, motorized wheelchair (or increased-mobility cart) in the 250-650 W range. Each fuel cell will cost approximately $28,000, assuming a 90% bulk discount.

Even though this fuel cell is currently more expensive than its platinum counterpart, it has several important advantages. First, the hydrogenase catalyst is much less susceptible to poisoning from feed impurities. Also, the cost for this catalyst is much more stable in the long-run when compared to the normally fluctuating costs of precious metals such as platinum. Fuel cell technology must move out of the research phase for the mass production of enzyme-catalyzed fuel cells to become feasible.
This mission takes the crew north of the forward operating base (FOB), en route to a blast site that struck an Iraqi police (IP) checkpoint.

“It’s important to show the people that we’re here to help them, not just warmongers,” said Spc. Andrew Walters, 26th Concrete Detachment, while driving to the site.

Travel through the city can be treacherous, but all members of the platoon are vigilant while they look for possible improvised explosive devices. Moving through the city, gunshots are heard once or twice, though it is hard to determine whether they are IP shooting into the air or potshots being taken at you.

Fortunately, nothing serious happens and when they reach the crater the soldiers spring to their feet and get to work.

The explosion caused serious damage to the roadway, leaving only a crater roughly 20 feet in diameter and four feet deep, but also an upheaved section of road that will have to be cut and broken out for the repair to be correct.

The first step to a correct repair is to remove any damaged sections of roadway that are cracked, bent upwards or downwards, or overhanging. Cutting these out expands the reported dimensions two or three feet, but that is often what it takes for a good repair.

Once these sections have been dealt with, the remaining asphalt in the hole is removed, as this will break down over time and could cause the repair to cave in on itself. The edges along the existing roadway are then prepped and dug down to the minimum six-inch depth. For this particular crater, fill material was brought in and placed.

Finally, concrete is placed and finished, and the hole is marked to indicate to others who made the repairs. After the repair is blocked off from traffic, it’s time to go home.

“Find the hole, fill the hole, get out,” said Spc. Dustin Dove, 26th Concrete Detachment, summarizing the details of crater repair. It’s just that simple, he said.
1984
C. Cameron Bell (BS) is the executive director for Wealth Management Institute in Gaithersburg, Maryland.

1992
We just received word that Darrell Velegol (BS) has been promoted to (full) professor at Penn State University effective July 1, 2009. Darrell writes, “I have had the ride of my life in ChE... and it started with you.” Congratulations to Darrell!

1994
Christina A. (Patrick) Ondrick (BS) is an attorney at law for McDermott Will & Emery in Washington, D.C.

1996
Scott Jamerson (BS) graduated with an “emphasis” in biomedical engineering in 1996. After working four years as a research engineer at Union Carbide in Charleston, he returned to school and graduated with a doctor of medicine from Marshall University. Scott will complete his residency at the WVU Department of Ophthalmology in June 2009 and will start a two-year fellowship in vitreoretinal surgery in Cleveland this coming July. After his fellowship, he will join a practice in Charleston, West Virginia. Scott wrote, “I would probably never have considered the medical field if it were not for Dr. Cilento’s advice while I was an undergrad. I distinctly remember a conversation mentioning that chemical engineering had one of the highest acceptance rates into medical school, and that was the seed that started my career in medicine. In addition, the biomedical Engineering “emphasis” helped me get accepted into medical school without having to complete any additional prerequisites.”

Rebecca L. Pinell (BS) is associate director, quality compliance, for Mylan Pharmaceuticals, Inc. Rebecca resides in Morgantown, West Virginia.

1998
Alicia R. Dalton-Tingler (BS) recently accepted a federal position with the Department of Energy’s National Energy Technology Laboratory. Alicia is now employed in the Technical and Project Management Division.

1999
Chris Sizemore (BS) is production supervisor – flexible polyols for Bayer Material Science in South Charleston, West Virginia.

2000
Joshua R. Edgar (BS) was recently promoted to the position of assistant brawmaster at the Cartersville Brewery. Josh joined the company in 2002 and has held various positions in quality assurance and brewing in the Columbus and Cartersville breweries.

2002
Aaron H. Wine (BS) writes, “Upon graduation I was hired by Owens Corning Fiberglas as a manufacturing engineer. I moved from the lovely hills of West Virginia to the fast-paced life of Atlanta, Georgia. I worked about 4 years with Owens Corning in Atlanta. While there, I was trained as a Six Sigma black belt as well as a Kaizen Event and 5-S facilitator. I saved the plant over $1,000,000/yr and the company about $25 to $50 million per year with one of the Six Sigma Projects I completed. After two years of engineering, I moved into the management side of the business. I enjoy the science part of life, but I love the people and leadership side a whole lot more. While in Atlanta, I got married to Jewelw Daymon Cayton. We were married on October 5, 2002. In Atlanta we were highly involved in church and many outreach ministries. We worked with a lot of inner-city youth and troubled children while we were there. On 4/20/04 we had our first child, a baby girl, Trinity Eryn. The next year we had our first son, Timothy Daniel, on 5/20/05. In November 2005, a recruiter contacted me about coming to work for one of the competitors in the fiberglass industry. The company was Knauf Insulation, where I am currently employed and loving life. We moved to Shelbyville, Indiana (just southeast of Indianapolis) in December 2005. At Knauf Insulation, I started out as the production and quality manager for the plant. In October 2007, I was promoted and became the youngest plant manager in the company and possibly the industry. Since we have moved to Shelbyville, we have had our third child, Jennings Michael, on 9/19/08 and our fourth child, Isaiah Alan, on 11/28/08. In the Fall of 2007, I completed a master of science in management degree from Indiana Wesleyan University. We are still highly involved in church where we serve in many capacities.”

2003
Tim Hall (BS) is a principal scientist for Faraday Technology, Inc., and resides in Englewood, Ohio.

2006
Yin-Han Wang (MS) and Tze-Wei Lio (PhD 2008) are the proud parents of a baby boy, Edison, born on January 4, 2009. Yin-Han and Tze-Wei reside in Edmond, Oklahoma.

2007
Tirzah Mills (BS) writes, “I must say it is nice to see Morgantown in the news for their booming economy. Some of the professors out here at the University of Colorado – Boulder were complaining that WVU had messed up their basketball brackets, but I thought it was great that they at least believed we would be going far. I am doing well in Boulder and enjoying research. I’ll be receiving my coursework-based master’s degree in May, which will be nice to show my grandfather. The PhD work is going well. I coauthored a mini-review article that is waiting on my advisor’s desk to be submitted. The hope is to have my first two research papers submitted by the end of the year. I’ve been assigned a Research Experience for Undergraduates (REU) student for the summer, so hopefully that will work out well... I hope that life is finding you all well. I will be TA’ing next semester and am getting ready to pull out all of my old class notes that have moved with me to Colorado. Thank you for being such fantastic teachers and friends. I’m looking forward to my next visit to the fourth floor. Montani Semper Liberi.”

2008
Erica Trump (BS) recently received word that she has won an NSF Graduate Research Fellowship. Erica says she is surprised that she won and so thankful for the opportunity. Erica also writes, “Things at CMU are going well. I am still having a great time in Pittsburgh and just started my research project. I am working for Neil Donahue and my project has been funded by the Center for Environmental Implications of Nanotechnology (CEINT). We are looking at what happens to nanoparticles in the atmosphere. It’s fun so far.”

**SPORTS**

We hope you can attend some of the Mountaineer games under head football coach Bill Stewart. It should be an exciting season as we strive to win the Big East under the leadership of quarterback Jarrett Brown. The 2009 WVU football schedule is as follows:

- **Sat. Sept. 5** Liberty Home
- **Sat. Sept. 12** East Carolina Home
- **Sat. Sept. 19** Auburn Away
- **Thur. Oct. 1** Colorado Home (ESPN)
- **Sat. Oct. 10** Syracuse Away
- **Sat. Oct. 17** Marshall Home
- **Sat. Oct. 24** Connecticut Home (Homecoming)
- **Fri. Oct. 30** USF Away (ESPN2)
- **Sat. Nov. 7** Louisville Home (Mountaineer Week)
- **Fri. Nov. 13** Cincinnati Away (ESPN2)
- **Fri. Nov. 27** Pittsburgh Home (ESPN/ABC)
- **Sat. Dec. 5** Rutgers Away (ABC/ESPN/ESPN2)

**Alumni and Friends Invited to Pre-Game Hospitality Tents this Fall**

Alumni and friends are invited to attend the College and Engineering Mineral Resources Hospitality Tents prior to the WVU football games on **September 12 (East Carolina)** and **October 24 (Connecticut - Homecoming)**.

Check the WVU athletics web site for game times, which are not set as of this printing.

The tent will open two hours prior to game time. No reservations or tickets are required, and there is no cost to our guests. If you’re a graduate of the College, please join us and bring family and friends.

Our tent will be in Upper Tent City, on the stadium side of the Blue Lot (hospital parking lot) on the northwest side of the stadium, near the Ronald McDonald House. Just look for the CEMR banner.
John (Jack) H. Bees (BS 1950, MS 1951) passed away on Sunday, August 24, 2008, in Florida. Jack was a native of Huntington, West Virginia. Following graduation from WVU, he was employed by International Nickel Company in research and development. In 1952, he joined Union Carbide Corporation where he remained in various positions, until his retirement. Jack was a charter member of the WVU Academy of Chemical Engineers, which was founded in 1986.

Robert E. Pyle (BS 1950, MS 1951, PhD 1953) passed away on January 6, 2009, at the age of 81. Bob was born and raised in Middlebourne, West Virginia. He also received an Honorary Doctor of Science degree from WVU in 1980. Bob had a long career with Union Carbide Corporation and retired in 1987 to Mt. Pleasant, South Carolina. Bob is survived by his wife, Patricia, of Mt. Pleasant, his three children, and three grandchildren. Bob was also a charter member of the WVU Academy of Chemical Engineers.

Make a Difference in the Lives That Follow
Those who possess even the least amount of knowledge about chemistry understand the great impact that chemical engineers have on our daily lives in this country.

Continuing to educate knowledgeable chemical engineers is essential. Private support grows even more important in this process as the years go by. Current gifts of cash, stocks, and other assets help to enhance the program in valuable ways.

Many understand that, while also providing for the future needs of family, including a gift provision in a will or trust to support the Department is as simple as having your attorney use the wording of “to the West Virginia University Foundation, Inc. for the benefit of the College of Engineering & Mineral Resources Department of Chemical Engineering.” Adding further wording about the special use of your gift, such as funds for department-wide purposes, student support, graduate students, faculty development, or the purchase of equipment is appropriate.

Making the WVU Foundation the after-death beneficiary of a retirement asset account can be just as beneficial in supporting the Department. Simply changing the beneficiary form available from the plan administrator and then specifying the appropriate use of the funds through a separate letter or document are all that is needed.

Through gift support, helping the Department stay abreast of current industry standards is truly important. Contact Bob Bragg, director of development, at 304-293-4821, ext. 2240 or at Robert.Bragg@wvu.edu to assure that your support will provide a legacy of helping others.