A YEAR TO CELEBRATE

MESSAGE FROM THE CHAIR

The Centennial Celebration that marked the start of the chemical engineering program at WVU was held in conjunction with the 31st annual meeting of the Academy of Chemical Engineers from March 23-25, 2017. The weather was warm, bright and cheerful and so were the spirits of the alumni, faculty and students who participated in the event. Almost all alumni were personally contacted by a large number of class champions and invited to participate in the 100-year celebration.


Gupta

There were about 100 alumni at the banquet, including representatives from the class of 1955 all the way to the class of 2016. The class of 1980 had 10 members present, the largest of any class. Some alumni could not travel due to health reasons or due to the distance involved. Dr. J. Reginald Dietz, '52, '54, '56, a charter member of the Academy, sent a message of good wishes, while professors Hideki Mori, Katsumi Tsuchiya and Shigeo Uchida sent a gift of a ceramic plate containing many Japanese traditional auspicious subjects and designs.

It has been a century filled with events that the alumni can be proud of. On Friday morning the program showcased the accomplishments of our alumni, students and faculty. Featured were the history of the chemical industry in the state and the history of chemical engineering at WVU. Dr. Joseph D. Henry, '64, former professor and chair, delivered the inaugural C.Y. Wen lecture on the life of C.Y. Wen with the Wen family in attendance. The present and future of the Department and the profession were explained in a series of talks given by Dr. Darlene Schuster, B.S. 1981, Ph.D. 1990, Professor Jianli Hu, Professor L.S. Fan, M.S. '73, Ph.D. '75 and Professor Richard Turton. Seniors from both the chemical and biomedical engineering programs gave overviews of their design projects, and undergraduate and graduate students displayed posters on their research.

The event had been planned for several years, and it would not have been possible without the dedicated work of a large number of Academy members, department faculty, Department and College staff and students. Equally importantly, we received substantial financial contributions from alumni and their employers, among others. This is gratefully acknowledged.

As we look to the future, one area in which we have moved in a determined way in both education and research is the area of life sciences. Sixteen students graduated with a B.S. degree in biomedical engineering this year, and we plan to apply for program accreditation in 2018. A biomedical engineering open house was held on November 17, to showcase our students and program. In attendance were potential employers and representatives of companies and organizations supporting design projects and other student activities.

We have been interviewing a number of candidates for tenure-track positions in the biomedical engineering area. We have also initiated a collaboration with WVU's Blanchette Rockefeller Neurosciences Institute and

» **continued on page 2...**

THE MAJOR WV
VOLUME 30, NO.2 WINTER / SPRING / SUMMER / FALL 2017
BENJAMIN M. STATLER COLLEGE OF ENGINEERING AND MINERAL RESOURCES
DEPARTMENT OF CHEMICAL AND BIOMEDICAL ENGINEERING

TABLE OF CONTENTS

WestVirginiaUniversity.
BENJAMIN M. STATLER COLLEGE OF ENGINEERING AND MINERAL RESOURCES

Chair's message continued from page 1...

faculty are being hired who will have a joint appointment in both BRNI and the Department of Chemical and Biomedical Engineering. A graduate program in BMEG is also in the planning stage.

In other Department news, Nagasree Garapati, who graduated with a Ph.D. under the supervision of Professor Brian Anderson, returned at the end of August 2016 to become a research assistant professor and Jeremy Hardinger, one of our Ph.D. students, was appointed lecturer.

In the last newsletter, I mentioned that all Departmental faculty are active in research, and they have externally funded grants and contracts. Late last year, professors Jianli Hu and Hanjing Tian received a $1.25 million contract from the U.S. Department of Energy through ARPA-E to develop ammonia synthesis technology that is much more efficient than the Haber-Bosch process. Professor Hu is also a member of an AIChE-led team that won funding for a Manufacturing USA Institute from the U.S. Department of Energy. Dubbed RAPID for Rapid Advancement in Process Intensification Deployment, this new five-year, $140 million investment aims to revolutionize energy-intensive industries through ultra-efficient processes. The goal is to increase the productivity of manufacturing processes while lowering energy and capital equipment costs.

At WVU, research efforts will focus on turning natural gas into valuable chemicals and plastics and to develop ways in which these processes can be conducted at the wellhead. In anticipation of this award, Professor Hu organized a workshop on natural gas utilization in early November in Morgantown in conjunction with AIChE. It was focused on overcoming hurdles of technology implementation. Most recently, Fernando Lima received a prestigious five-year CAREER award from the National Science Foundation to improve modular systems for energy applications. He becomes the third member of the Department to win this award in recent years.

Our students routinely place first or second in research contests at local, regional and national meetings, and information on recent winners is given elsewhere in the newsletter. Anna Gilpin, a senior majoring in BMEG, became WVU's latest Goldwater Scholar, one of only two engineering students from WVU this year. She is working to design a stem cell biomanufacturing technique that involves culturing cells that develop into connective tissue, blood vessels and lymphatic tissue within collagen microspheres of physiological stiffness. Skyler Roth, a sophomore in the BMEG program, won second place in the Target Case Study Competition. Anika Coolbaugh, a ChE senior working under the supervision of Lizzie Santiago of the Fundamentals of Engineering program, won best overall and first place, individual undergraduate research at the student poster competition at the 2017 ASEE zone two conference for her project, "Promoting critical thinking skills in non-calculus ready first year engineering students." Selorme Agbleze, a ChE junior working with Dr. Lima, was selected for the McNair Scholars internship program. Also, Juan Carlos Carrasco-Moraga, a Ph.D. student working with Dr. Lima, was selected to attend the P&G FIRST Conference, an all- expenses paid three-day event, where he learned about research and development from top research groups in academia and industry.

In terms of external recognition of faculty accomplishments, Debangsu Bhattacharyya, along with David Mebane of mechanical and aerospace engineering, won an R&D 100 award known as the "Oscars of Innovation" for development of carbon-capture technology. This is the second such award won by Dr. Bhattacharyya in the recent past. Drs. David Klinke and Fernando Lima were designated "Researchers of the Year" in the Statler College for 2016-2017, and Dr. Klinke was inducted into Tau Beta Pi, the engineering honorary, in early April.

It is clear that we have much to be proud of and much to be thankful for!

Dr. Rakesh Gupta
George and Carolyn Berry Professor and Chairperson
Department of Chemical and Biomedical Engineering

CHEMICAL ENGINEERING EARNS FULL ACCREDITATION

The Statler College of Engineering and Mineral Resources underwent an ABET evaluation in fall 2016. The chemical engineering program earned the full six-year accreditation. The biomedical engineering program will seek accreditation after the first class of students graduate in the major.

CBE INDUSTRIAL ADVISORY COMMITTEE

The Departmental Industrial Advisory Committee met on October 19-20, for its annual meeting. A biomedical engineering subcommittee meeting is being planned for fall 2017. The following members were present and provided valuable advice and counsel to the Department:

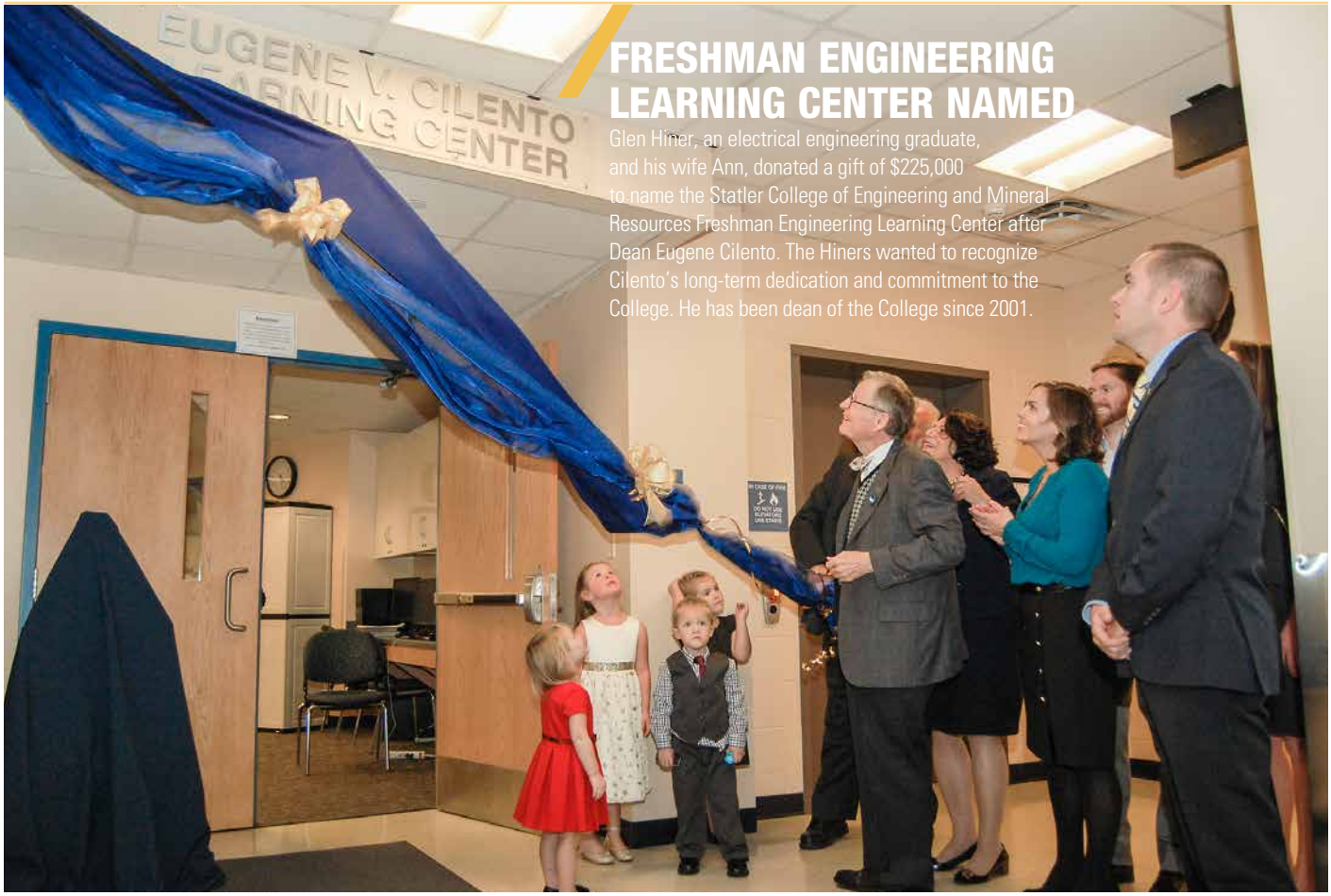
Steven Auvil, Air Products and Chemicals, Inc. (retired)
Kevin DiGregorio, Chemical Alliance Zone
Jacob Hunter, Momentive
Ken Miller, ISYN Consulting
Ray Page, Worcester Polytechnic Institute
Ailene Phillips, Dow Chemical Company
Vince Stricker, WR Grace and Company
Madhava Syamlal, USDOE/NETL
The committee welcomed new member, **Ailene Phillips**.

CONGRATULATIONS

Debangsu Bhattacharyya and David Mebane (mechanical and aerospace engineering) were the recipients of an R&D 100 Award, known as the "Oscars of Innovation." They received the award for creating a toolset that will aid in the development of carbon capture. The R&D 100 Awards recognize 100 of the brightest and boldest technologies and services of the year across nine categories. This is the third R&D Award won by researchers in the Statler College of Engineering and Mineral Resources.

David Klinke and Fernando Lima were recognized as Researchers of the Year–Senior Level in the Statler College for the 2016-2017 academic year. They were recognized at the College's Honors Day held at the Erickson Alumni Center on April 7.

COLLEGE NEWS



FRESHMAN ENGINEERING LEARNING CENTER NAMED

Glen Hiner, an electrical engineering graduate, and his wife Ann, donated a gift of $225,000 to name the Statler College of Engineering and Mineral Resources Freshman Engineering Learning Center after Dean Eugene Cilento. The Hiners wanted to recognize Cilento's long-term dedication and commitment to the College. He has been dean of the College since 2001.

STATLER COLLEGE EMERITUS LUNCHEON

The annual Statler College Emeritus lunch was held on Friday, June 2, at the Erickson Alumni Center. The event was well attended by College alumni. **Hugh Felton** (BS '59) and **A. Phillip Fisher** (BS '59) were in attendance from the Department. Also attending was Professor Emeritus Dady Dadyburjor and Drs. Rakesh Gupta and John Zondlo, who served as Departmental hosts. ▼

STUDENT NEWS

RECENT GRADUATES

The Department had 167 ChE undergraduate students and 69 BMEG undergraduate students enrolled for the fall 2016 semester in the sophomore through senior years. For academic year 2016, we graduated 59 students with a B.S. degree.

The BSChE graduates for 2015-2016 are shown below. Our congratulations and best wishes to all of them in their careers; please keep in touch!

CLASS OF 2016

DECEMBER 2015

Albuwaidy, Ahmed Adel

MAY 2016

Adkins, Laken
Allen, Erika A.
AlTarrah, Mohammed
Amachi, Adanna C.
Anderson, Joseph E.
Andrews, Reed C.
Atallah, Joseph G.
Baker, Joshua L.
Bandzuch, Dalton T.
Beihart, Jesse C.
Boyce, Kennedy
Bruso, Kimberly L.
Cain, Megan V.
Cain, Rebecca T.
Callaghan, Molly B.
Chavez, Joseph
Cheong, Haesoo
Chow, Zachary M.
Collins, Christian S.
Comer, Andrew J.
Cox, Bradley J.
Dako, Malik O.
Davis, Ross D.
Domer, Tyler D.
Dunn, Mariah P.
Eichelberger, Alexander L.
Elias, Jacob T.
Gates, Christopher J.
Gillispie, Alexandra M.
Golliday, Daisy J.
Hamner, Gabrielle
Hernandez, Melissa A.
Howerton, Tyler
Hughes, Ryan K.
Hunt, Steven D.
Jarvis, Matthew T.
Jones, Jamin I.
Krynski, Ryan
Kyle, Dylan C.
Lilly, Amber R.
Lodge, Kristofer J.
Mallory, Michael R.
Maloney, Andrew J.
McClung, Kelsey M.
Phipps, John V.
Plivelich, Austin W.
Prudich, Luke J.
Roset, James R.
Salmans, Jeffrey W.
Schau, Ian C.
Scott, Kelsey M.
Shamblin, Isaac C.
Sorrells, Matthew G.
Steinheimer, Matthew R.
Torres, Katrina E.
Watson, Alexander D.
Watton, Lydia E.

The Department had 189 ChE undergraduate students and 77 BMEG undergraduate students enrolled for the fall 2017 semester in the sophomore through senior years. For academic year 2017, we graduated 48 students with a BSChE degree and 16 students with a BMEG degree – our inaugural class.

The graduates for 2016-2017 are shown below. Our congratulations and best wishes to all of them in their careers! Please keep in touch!

CHE CLASS OF 2017

DECEMBER 2016

Davis, Jonathan Keith
Hamner, Danielle Morgan
Harp, Jeremy Ray
Wayne, Derek Edward

MAY 2017

Alkhateeb, Khaled Hesham
Almahrouqi, Ghaliya Khalfan
Almutlaq, Ahmed Saleh
Alohali, Talal
Alzahrani, Abdullah Faisal
Aportadera, Seth Tyler
Asoluka, Onyinyechi Ijeoma
Atallah, Chris George
Brown, Simon Bell
Buckland, Joshua Allan
Caswell, Sierra Nicole
Chapman, Jordan Scott
Coolbaugh, Anika Rachelle
Douglas, Jacob Martin
Duncan, Garith Andrew
Fisher, Kasey Marie
Fouts, Michael William
Fox, Matthew David
Games, Brice Kirby
Gibbs, Jeremy John
Gibson, Ryan Scott
Glasscock, Chad Allen
Goetz, Evan Daniel
Hedrick, Elijah Ballard
Ivey, Jacob Leon
Kenyon, Daniel Joshua
Kesselring, Candace Ann
Mahalingam, Kumarenderan
Miller, Kameron Nicole
Odom, Logan Garrett
Owens, Charles W.
Patel, Dhruvi
Peklinsky, Erica Renee
Peng, Julie Eden
Pinion, Maxwell P.
Reynolds, Katherine Grace
Rukundo, Patrick
Salakovich, Alec Benjamin
Sisler, Patrick Wesley
Snyder, Abigail Erin
Subramani, Paranthaman N.
Talbott, Justin Blake
Troutman, Zane Tyler
Wagner, Frederick William

BMEG CLASS OF 2017

MAY 2017

Alatorre, Austin Cole
Arnett, Drew Thomas
Capers, Krystal Renee
Chivers, Adam Brinley
Church, Tyler J.
Derosa, Michael Francis
Hott, Melanie Joy
Lobban, Karlee Jane
Mezan, Ryan Alexander
Midkiff, Erin Nichole
Monaghan, William Patrick
Neely, Margaret Anne
Palmer, Adam Lee
Peters, Christopher John
Sebacher, Kristina Lea
Tomblin, Brian

If your company is hiring, please let us know. We are always interested in providing more opportunities for our graduates.

In 2016-2017 the Department had 49 graduate students enrolled, of whom 38 were in the Ph.D. program. In 2015-2016, we graduated two M.S. students and five Ph.D. students. Their names, research topics and research advisors are as follows:

DECEMBER 2015

Saurabh S. Chaudhari (Ph.D.)
Research Advisor: Charter Stinespring
Title: Development of Graphene and Graphene-Nanoparticle Composites for Sensor Applications

Prokash Paul (Ph.D.)
Research Advisor: Debangsu Bhattacharyya
Title: Sensor Placement Algorithms for Process Efficiency Maximization

Timothy Ross (M.S.)
Research Advisor: John Zondlo
Title: Performance and Stability of Large Planar Solid Oxide Fuel Cells Using Phosphine Contaminated Hydrogen Fuel

Yueting Wu (Ph.D.)
Research Advisor: David Klinke
Title: Cancer Exosomes are Unique and Complex Mechanisms that Suppress Effector T Lymphocyte Functions

MAY 2016

Taiwo Ajayi (Ph.D.)
Research Advisor: Brian Anderson
Title: Advanced Reservoir Modeling and Fluid Flow Studies of Natural Gas Production from the Hydrate Reservoirs of the Alaska North Slope

Pratik Pednekar (Ph.D.)
Research Advisor: Debangsu Bhattacharyya
Title: Modeling and Simulation of Components in an Integrated Gasification Combined Cycle Plant for Developing Sensor Networks to Detect Faults

Matthew Tacker (M.S.)
Research Advisor: Brian Anderson
Title: Microfluidic Based Hydrate Permeability System: Design and Construction

In 2016-2017, we graduated one M.S. student and five Ph.D. students. Their names, research topics and research advisors are as follows:

AUGUST 2016
Reem Eldawud (Ph.D.)
Research Advisor: Cerasela Dinu
Title: Combinatorial Real-Time High Throughput Analyses of Cell Behavior Upon Exposure to Analytes

Kelydra Welcker (M.S.)
Research Advisor: Brian J. Anderson
Title: Utilization Risk Assessment and Thermal Conductivity Testing for the Low Temperature Geothermal Play Fairway Analysis for the Appalachian Basin

DECEMBER 2016
Manish Nandanwar (Ph.D.)
Research Advisor: Brian J. Anderson
Title: Numerical Modeling and Stimulations for Techno-economic Assessment of Non-conventional Energy Systems

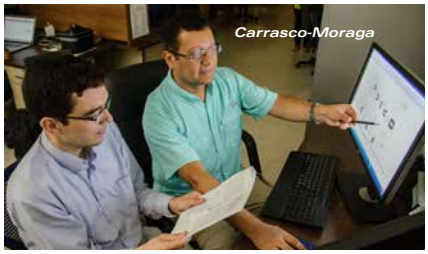
Matthew Thompson (Ph.D.)
Research Advisor: Rakesh Gupta
Title: Extensional Flow Blending of Immiscible Polymers with Nanoparticle Stabilization

Qiang Zhang (Ph.D.)
Research Advisor: Richard Turton
Title: Modeling and Control of Post-Combustion CO2 Capture Process Integrated with a 550MWe Supercritical Coal-fired Power Plant

MAY 2017
Yuan Jiang (Ph.D.)
Research Advisor: Debangsu Bhattacharyya
Title: Techno-Economic Studies of Coal-Biomass to Liquids Plants with CO2 Capture and Storage

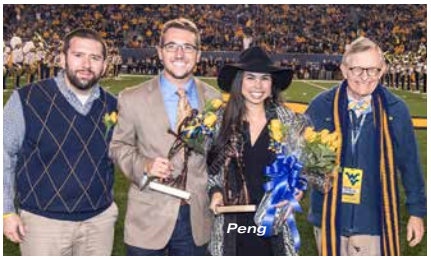
STUDENT AWARDS AND HONORS

Juan Carlos Carrasco-Moraga (Ph.D. candidate) attended the P&G FIRST Conference held in Cincinnati, Ohio, on September 18-21. The P&G FIRST conference is a three-day, all expenses paid program primarily intended for African American, Hispanic and Native American doctoral and postdoctoral scientists. Carrasco-Moraga's research is under the direction of Fernanda Lima. ▶


Carrasco-Moraga


Gilpin

Anna Gilpin ('18 BMEG) and **Eilish Miller** ('18) were NASA Undergraduate Research Scholars for 2016-2017. Gilpin did research under the direction of Yong Yang and Miller's research was done under the direction of Fernando Lima. Gilpin was also the recipient of a Goldwater Scholarship. A prestigious award recognizing students who have the potential to make significant contributions in the fields of mathematics, the natural sciences and engineering. ◀


Peng

Julie Peng ('17) was selected by her peers as Ms. Mountaineer 2016. Peng was named at half-time of the WVU vs. Kansas football game on Saturday, November 5. ◀

Katherine Reynolds ('17) was the recipient of the 2016 Professional Promise Award from the AIChE Pittsburgh Section.

STUDENTS PARTICIPATE IN AICHE POSTER COMPETITION


Hott

Seven undergraduate chemical and biomedical engineering students and several graduate students attended the annual meeting of the American Institute of Chemical Engineers, held in San Francisco, California, in November. Several of the students made poster and oral presentations at the meeting. **Jacob Douglas** ('17) placed second in the Computing and Process Control Division with his poster titled, "Modeling, Simulation and Control of a Supercritical Coal-Fired Power Plant for Smart Grid Applications." Douglas is performing research under the direction of Fernando Lima. **Melanie Hott** ('17 BMEG) placed third in the Food, Pharma and Biotechnology VII Division for her poster, "Enzyme-based Conjugates Capable of Bacterial Decontamination." She is performing research under the direction of Cerasela Dinu.

ACADEMY SCHOLARSHIPS ANNOUNCED

The Academy of Chemical Engineers provided scholarships of $1,500 each to 10 undergraduate students for the 2017-2018 academic year. The recipients are:

Ronald H. Alexander ('19)
Meshal Alshalan ('18)
Morganne F. Baranski ('19)
Brian W. Donaldson ('19)
Yacine Feliachi ('18)
Ethan M. Hazlett ('19)
Zachary A. Kilwein ('19)
Joel D. LeHew ('19)
Caitlin B. Morrow ('19)
Jaycie L. Saseen ('19)

Scholarship winners were recognized at the 2017 Annual Academy Banquet held on Friday, March 24, at the Erickson Alumni Center.

SCHOLARSHIPS ANNOUNCED

In addition to the Academy scholarships, which were identified in the summer/fall 2016 edition of *The Chemical Engineering Major*, the following scholarships were awarded for the 2016-2017 academic year:

Selome Agbleze: George A. & Syliva B. Crago Scholarship, W.J. Fitzgerald Chemical Engineering Scholarship, John M. Summerfield Scholarship

Alexa Anderson: James Kent Biomedical Engineering Scholarship

Huda Ashfaq: Chemical Engineering Scholarship, C.Y. Wen Chemical Engineering Scholarship

Emily Brezler: James Kent Biomedical Engineering Scholarship

Joshua A. Buckland: Lester Kincaid Scholarship

Krystal Capers: Williard W. Hodge Chemical Engineering Scholarship, Lester Kincaid Scholarship

Jordan S. Chapman: Ruckman and Balmy Dietz Scholarship, John M. Summerfield Scholarship

Tyler Church: Martha Hopkins Hashinger Scholarship

Killian Coyne: Samuel and Doris Kasley Scholarship in Chemical Engineering

Brian Donaldson: Chafin Chemical Engineering Scholarship, James & Catherine Faller Scholarship

Andrew Elliott: Lester Kincaid Scholarship

Kaylee Flohr: Martha Hopkins Hashinger Scholarship

Matthew Fox: Williard W. Hodge Chemical Engineering Scholarship

Paraag Gupta: W.J. Fitzgerald Chemical Engineering Scholarship, William M. Smith Scholarship

Emily Hayhurst: Camden Coberly Memorial Scholarship, James Kent Biomedical Engineering Scholarship

Elijah Hedrick: Salvatore & Josephine Cilento Research Scholarship

Thomas Hitchins: Williard W. Hodge Chemical Engineering Scholarship

Zachary Kilwein: Samuel and Doris Kasley Scholarship in Chemical Engineering, Albert Monack Scholarship, Georgia Nash Memorial Scholarship

Jason McBee: Salvatore & Josephine Cilento Research Scholarship, C.Y. Wen Chemical Engineering Scholarship

Dhruvi Patel: W.J. Fitzgerald Chemical Engineering Scholarship

Alec Salakovich: Camden Coberly Memorial Scholarship, James Wimer Scholarship

Justin Sharpe: C.Y. Wen Chemical Engineering Scholarship

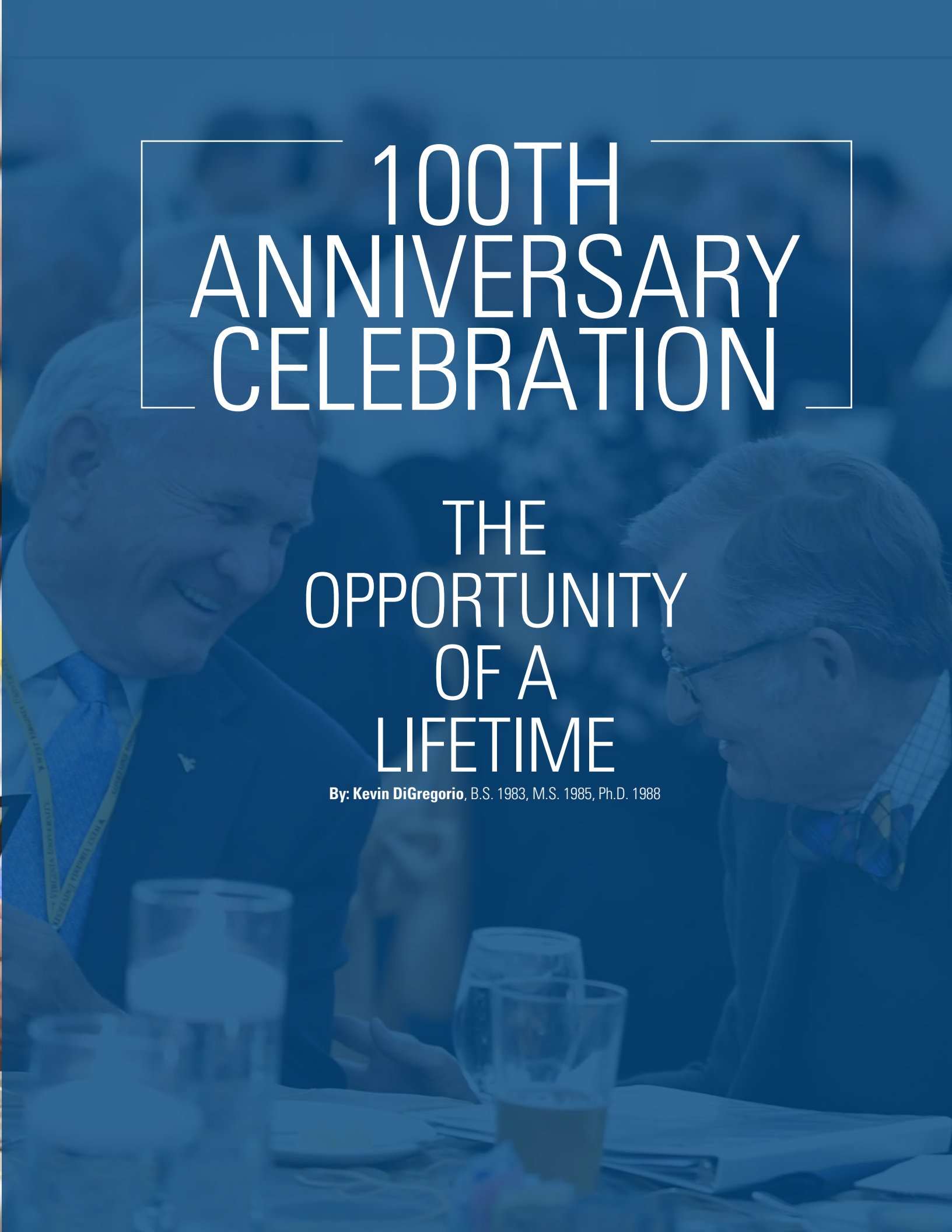
Jordan Shaver: James Kent Biomedical Engineering Scholarship

Nanda Siva: James Kent Biomedical Engineering Scholarship

Anika Solomon: Candelaria Jacques Memorial Scholarship, B.G. McGuire Scholarship

Jacob E. Suffridge: John M. Summerfield Scholarship

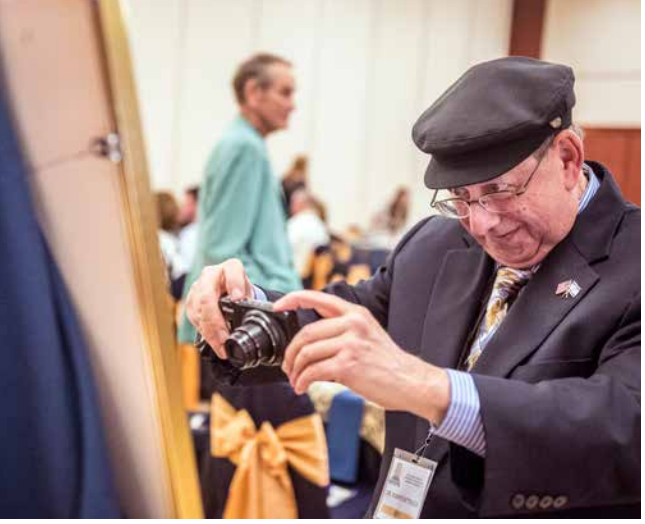
Note: Multiple scholarships are given to some students because for a select group of students, the College promises scholarships of a certain amount each year. Once the student enters the Department, he/she continues to receive this amount, but now it must come from Departmental scholarship funds. Since these amounts can be large (up to $1,750) the Department must sometimes draw funds from several separate scholarship accounts to meet the total promised.

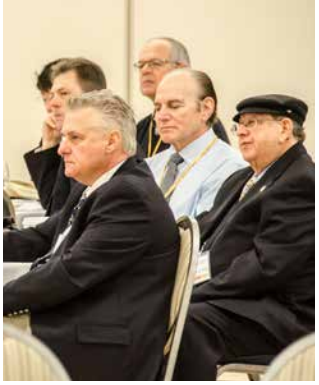


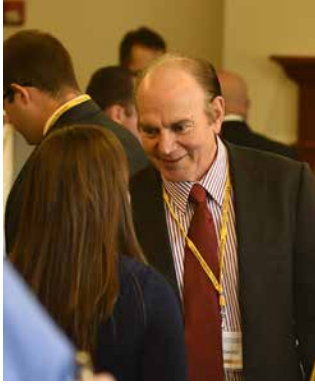
100TH ANNIVERSARY CELEBRATION

THE OPPORTUNITY OF A LIFETIME

By: Kevin DiGregorio, B.S. 1983, M.S. 1985, Ph.D. 1988







I was all but tackled within eyesight of Mountaineer Field as I approached the buffet line at the WVU Erickson Alumni Center.

"Dig," Jay shouted, giving me a big bear hug.

Then he saw Jerry just behind me, turned around, and grabbed him as well. "Jerry!"

And just like that, Jay had two tackles on one play, something even former All-American linebacker Darryl Talley was unable to do in his career at WVU.

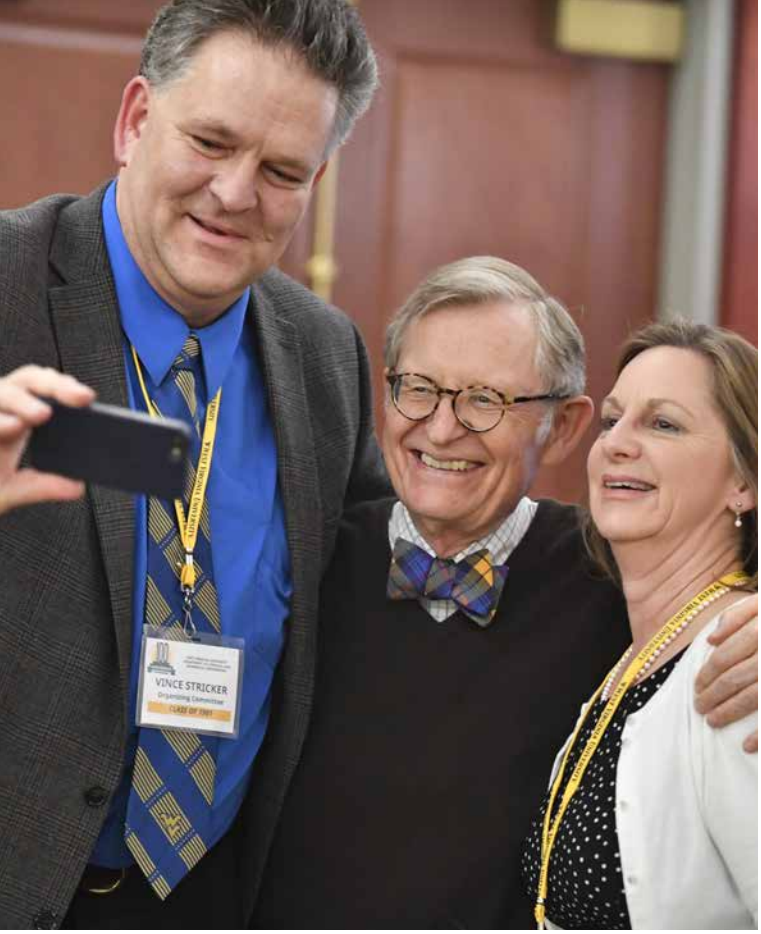
And also just like that, Jay had reconnected with two former classmates that he hadn't seen in almost 34 years. The stories and remembrances that followed over the next three days were even better, of course, but all are too long (and most too, shall we say, revealing) to recount here.

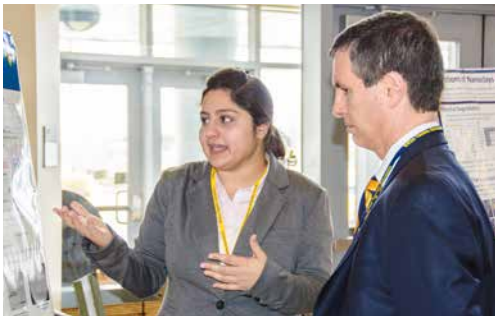
In the end, that was the essence of the 100th Anniversary Celebration for WVU's Department of Chemical Engineering. For three days in March, friendships were renewed, stories were retold and new bonds were forged. And hey, even the talks and tours were insightful, stimulating and more than worth the trip.

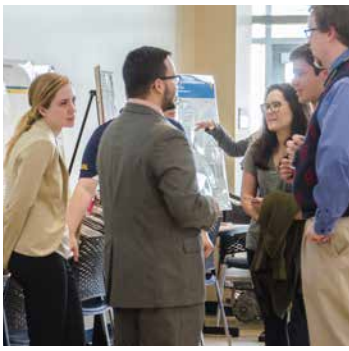
If you were unable to make it, you missed the opportunity of a lifetime. We will never again have the chance to celebrate 100 years of our great Department. And if you were there? Then I hope — no, I'm sure — you not only witnessed and experienced a lifetime opportunity but also had a great time to boot.

We have already challenged this year's undergraduates to plan for another celebration in 25 years. But maybe, just maybe, some of us can get together before then. I urge you to contact your former classmates, visit the new chemical and biomedical engineering department when you can and donate to the Department if you are able.

After all, you only get so many opportunities in a lifetime.

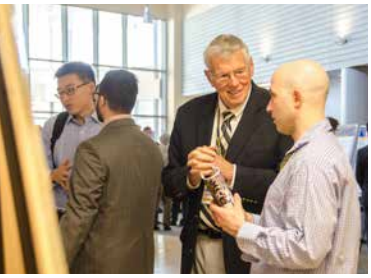






A large number of volunteers worked under the direction of Kevin DiGregorio for almost two years to organize the WVU Chemical Engineering Centennial. These volunteers included Cerasela-Zoica Dinu, Emer Gunter, Heather Cross, James Bero, Jim Hall, Linda Rogers, Louisa Nara, Mary Dillon, Mike Castle, Monica Cebulak, Richard Haden, Steve Alford and Vince Stricker. We thank them for their dedicated service to the Department.

Rakesh Gupta, Berry Professor and Chair



ACADEMY NEWS

ACADEMY MEETING AND INDUCTION CEREMONY

The Academy meeting and induction ceremony were held in conjunction with the Department's 100-Year Centennial Celebration. The Academy meeting was held on Thursday, March 23, at the Erickson Alumni Center. The meeting began with lunch and adjourned around 4:30 p.m. Registration and the 100-Year Celebration kick-off was held that evening starting at 6:30 p.m. At the banquet and induction ceremony of the Academy, held on Friday, March 24, at the Erickson Alumni Center, WVU President E. Gordon Gee was on hand to deliver the welcome. New inductees into the Academy were Lisa Baker and Darlene Schuster as regular members, and Yadin David was inducted as an honorary member. Their bios follow:

Lisa Baker (B.S. 1980)

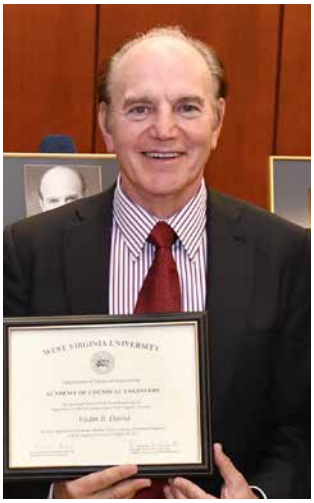
US DOE/NETL Patent Attorney
Morgantown, West Virginia

Lisa Baker graduated summa cum laude from West Virginia University with a B.S. degree in chemical engineering in 1980 with memberships in Tau Beta Pi and Omega Chi Epsilon. In 1995 she graduated from the WVU College of Law with a J.D. degree, as a member of the West Virginia University Law Review and the Order of the Coif.

Baker began her career as an engineer for the Westinghouse Electric Corporation from 1980 to 1983, working on the design of the Clinch River Breeder Reactor and later on the design of various coal gasification projects. She joined the U.S. Department of Energy in 1983, initially providing computer simulation support for the fuel cell program, and later managing the technical aspects of the award and performance of externally contracted research and development projects having the goal of developing clean coal technologies. In 1987, she became a liaison with DOE patent counsel and that work inspired her to get a law degree. She attend law school while working at DOE, and is registered to practice before the United States Patent and Trademark Office, and is a member of the West Virginia State Bar, the District of Columbia Bar and the Federal Laboratory Consortium.

As the Patent Attorney at DOE's National Energy Technology Laboratory, Baker is responsible for various aspects of intellectual property management and protection, including working with in-house research staff on patenting and licensing of inventions and negotiating R&D agreements with external partners ranging from lab scale to demonstration scale facilities. She negotiated the intellectual property provisions of many large-scale demonstration projects under the Department's Clean Coal Technology Program Initiative, as well as over $15 billion in projects awarded by NETL under the American Recovery and Reinvestment Act of 2009.

Baker has two children and resides in Morgantown.



Yadin David (Honorary Member)

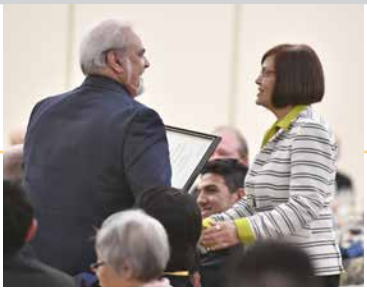
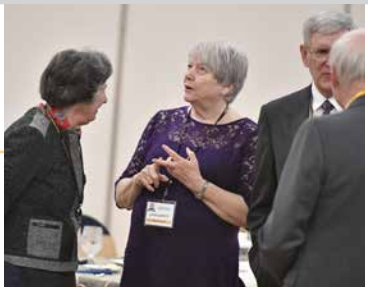
Biomedical Engineering Consultants
Houston, Texas

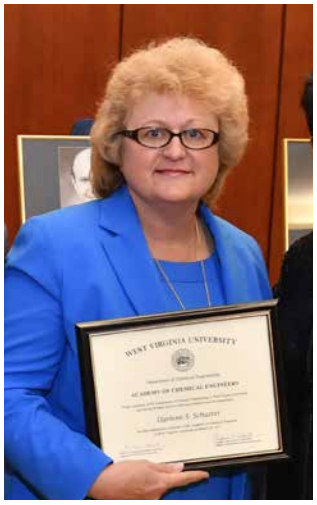
Over the past 30 years, Yadin David has developed, directed and taught healthcare technology management programs focusing on risk mitigation of medical device systems and their networks. David's expertise covers health technology program leadership, forensic engineering and product development regulatory compliance processes, including completion of more than 200 investigations of medical device-related adverse events and implementation of the first pediatric telemedicine-based medical services. He developed and implemented distinguished medical devices' strategy and compliance practice, based on clinical requirements, users' competencies and regulatory guidelines. David globally trains biomedical professionals in various technology management subjects including hospital disaster preparedness plan at resource-poor countries.

David is the principal at Biomedical Engineering Consultants, LLC, a firm providing expertise for improving the life-cycle management of healthcare technology; telemedicine program design; regulatory compliance; and forensic engineering services for hospitals, litigation and manufacturing industries worldwide. Previously, he headed the Biomedical Engineering Department and the Center for Telehealth at the largest medical center in the U.S. in Houston, Texas.

David holds adjunct academic appointment at the University of Texas–School of Public Health. In addition, he is also a visiting professor at the Tec de Monterrey School of Medicine in Mexico and the PLA Medical Center in China. David serves as chairman and member of several FDA advisory panels and is recipient of the FDA commissioner's special citation as well as the 2008 ACCE/AAMI Humanitarian Engineering Award and the 2011 Lifetime Achievement Award. He served as adviser to the World Health Organization, the Pan American Health Organization and as president of the Center for Telemedicine and e-Health Law, both in Washington, D.C.

David holds bachelor's master's and doctoral degrees from West Virginia University. He is a licensed professional engineer, Fellow of the American Board of Forensic Engineering and Technology and certified in clinical engineering. He served as the first president of the American College of Clinical Engineering and he is also president emeritus of the nonprofit Healthcare Technology Foundation.



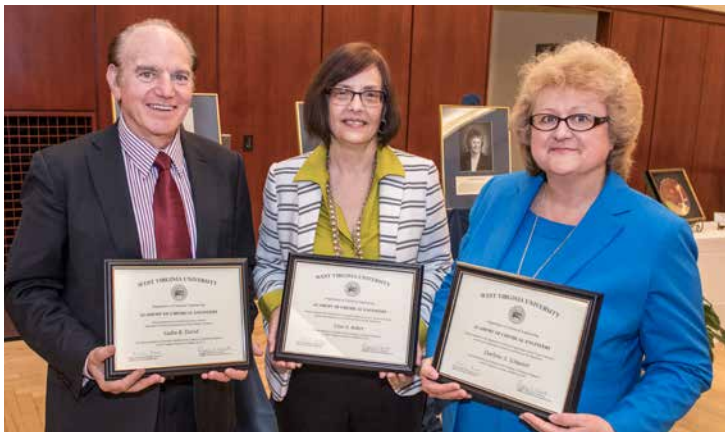
Darlene Schuster
(B.S. 1981, Ph.D. 1990)

Executive Director, Institute for Sustainability, AIChE
New York, New York

Darlene Schuster serves as the executive director of the Institute for Sustainability, an AIChE Technological Community, where she oversees the industry, membership and youth-focused entities formed to advance the science and state of sustainability and the creation of the AIChE Sustainability Index, a benchmark for industry. She also staffs the new AIChE Center for Energy Initiatives.

Schuster was the Clare Boothe Luce Chair of Chemical Engineering at Bucknell University, and held various engineering positions with Gulf Oil Production Research and Chevron Oil Field Research Company. She also was awarded a Science Policy Fellowship with the American Chemical Society, where she worked to educate congressional staff and Congress on technical policy issues and received the 2004 Technical Achievement Award from the Central Pennsylvania Engineers Council in part for contributions to novel technology product development and commercialization by her company, DP Group.

Schuster holds bachelor's and doctoral degrees in chemical engineering from WVU; she earned her master's degree in the discipline from the University of Pittsburgh.



IN MEMORIAM

William S. Britt (B.S. '54) passed away on April 22, in Salt Lake City, Utah. After graduating from WVU in chemical engineering, he served in the U.S. Navy as a nuclear weapons officer before returning to Duquesne University to earn a degree in patent law. His love of the mountains brought him to Salt Lake City, where he partnered with Dave Trask to form Trask Britt Law. He leaves behind his wife, two daughters, two sons and a step-daughter. Britt was a member of the Academy of Chemical Engineers (Class of 2001).

James H. "Jim" Laughlin, Jr. (B.S. '64), died in Arlington, Virginia, on January 26, 2016. A native of Charleston, Laughlin graduated from WVU with a bachelor of science degree in chemical engineering in 1964. While at WVU he was president of Phi Kappa Alpha Fraternity. He earned his J.D. degree from American University in Washington, D.C. His specialty was in intellectual property law particularly litigation. He was inducted as a member into the Academy of Chemical Engineers in 2006. He is survived by his wife, Eleanor, three daughters and six grandchildren.

Rodney Lewis Simms, Jr. (B.S. '60) passed away on November 26, in Fort Smith, Arkansas. He was born April 2, 1938, in Beckley, and graduated from West Virginia University with his bachelor's degree in chemical engineering in 1960. Simms is survived by his wife, Daisy, two daughters, two brothers and two grandchildren. He was inducted into the Academy of Chemical Engineers in 2002.

REMINDER

For those who have sent contributions to the Department this past year, OUR MANY THANKS!! These funds are used to support many undergraduate and graduate activities, and to help enhance the overall academic and learning environments in the Department. Your support is greatly appreciated.

Please remember to designate your tax deductible gifts for use by the Department. The best way for contributing to support of WVU Chemical and Biomedical Engineering is to write your check out to the WVU Foundation and designate it for use by chemical and biomedical engineering on the memo line. Also, please check with your company; many will provide matching gifts.

THE MAJOR WV

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Alumni Update

Winter / Spring / Summer / Fall 2017

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

Send to: Department of Chemical and Biomedical Engineering
West Virginia University | PO Box 6102 | Morgantown, WV 26506-6102

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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Suggestions/Comments: _____

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

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