From the Department Chair . . .

One of my favorite things as department chair is having the opportunity to connect or reconnect with alumni. From the East Coast to the West Coast and many points in between, I have had the pleasure of engaging in the lively art of conversation with quite a number of you. To those who have been so generous with their time, thank you. I always enjoy learning about the past, hearing your thoughts on the department's future and, of course, listening to stories about faculty and staff members.

Among the alumni with whom I reconnected this year was Dr. Patrick Lukulay (Ph.D. with Vicki McGuffin in 1995). On the back page of this newsletter, you can read about Patrick's recent book, which recounts his inspiring journey from Sierra Leone to becoming an executive in corporate America. *The Executive in You* is an easy, fascinating read, and I promise that anyone who has spent time in the department will enjoy Pat's recollections of his time at Michigan State. Dr. Lukulay's visit last fall also gave us the opportunity to discuss his journey, mutual goals and aspirations, and how to begin building mutually beneficial bridges between Michigan State and sub-Saharan institutions. I encourage all chemistry alumni to update us on your own post-MSU journey.

As I alluded to above, the current faculty and I value the opportunity to visit with alumni during our chemistry travels. This year alone, our faculty members were invited to present their science in China, Germany, Spain, Mexico, Japan, Australia, Poland, Italy, Slovakia, Finland, Hungary, Brazil, Switzerland and throughout Canada and the United States. Thus, regardless of where you live, you are not too far away for us to connect with you in person. Likewise, if you are attending an American Chemical Society (ACS) national meeting, Pittcon or other conferences, chances are that one of us will be in attendance, and we’d love to meet up with you. And certainly let us know if you are ever headed back to campus—we are always delighted when alumni visit the department.

For those who might not have the opportunity for a personal visit, I hope that these newsletters keep you connected with the department. I also encourage you to visit the department's web page (www.chemistry.msu.edu), where news, announcements and departmental honors are regularly posted.

Of course, I am sure that many of you have read about the department's numerous scientific accomplishments in *Chemical & Engineering News* or in the original literature. To name a few, an article published in the *Journal of Chemical Physics* titled “Determining the Lowest-Energy Isomer of Au8: 2D, or not 2D,” by Jared Hansen, a graduate student in the Piecuch group, and professors Piotr Piecuch and Benjamin Levine, was identified as one of its most-read articles in 2013; the journal *Biochemistry* highlighted a publication by Erica Vogel and professor David Weliky titled “Quantitation of Recombinant Protein in Whole Cells and Cell Extracts via Solid-State NMR Spectroscopy” on its website; and the ACS *Chemical Biology* editors highlighted articles from professor Jetze Tepe's group on an approach to delay multiple myeloma tumor growth. I could go on and on, but, instead, will leave it to you to read about more such accomplishments in this newsletter.

Before I conclude, I'd like to acknowledge the retirements of Tom Geissinger and Rebecca Townsend.

For three decades, Tom made sure that the chemistry stockroom was ready to meet our teaching and research needs. Moreover, he assured us that a trip to the stockroom also presented one the opportunity to read his selections from publications ranging from the *Wall Street Journal* to *Rolling Stone*.

As the administrative assistant to every department chair since 1995, Rebecca Townsend was the first to welcome many of us to the department. On behalf of myself and former chairs Kathy Hunt, John McCracken and the late Jerry Babcock, I wish Rebecca and her husband, Steve, happy trails as they tour the country in their Airstream.

In closing, thanks again to all of our alumni and friends for staying in touch and for your continued support of the department. Your generosity and philanthropy is most appreciated and is critical to our future. Go Green, Go MSU Chemistry!
Malcolm Goodwin, chemistry, ’55, retired in 1986 as senior research scientist at General Motors Research Laboratories, Warren, Mich., after working there for 32 years. He authored or coauthored numerous papers regarding lubricant effects on automobile performance and fuel economy during his career.

Lawrence Garber, Ph.D., chemistry, ’67, was recognized as a 50-year member of the American Chemical Society in 2013.

Bill Rothwell, chemistry, ’76, retired as global vice president of innovation and chemical technology for Royal Dutch Shell a few years ago after working there for 30 years. He is currently senior vice president for business development for Calysta Energy, Houston, Texas, a leader in technology for the bioconversion of methane and natural gas liquids to chemicals.

Patricia Oren, chemistry, ’79, has earned the rank of Instructor with Project Appleseed. To earn this rank, she had to learn to shoot a rifle and score the equivalent of Expert on the Army Qualifying Test, spend 100 hours in training, be able to pass on to others the marksmanship skills that she acquired, and learn to tell a set of stories about the first day of the American Revolutionary War before taking the last of five written and five practical exams.

Rick Yost, Ph.D., chemistry, ’79, professor and head of analytical chemistry at the University of Florida in Gainesville, is co-director of the Southeast Center for Integrated Metabolomics. The center is funded by a five-year, $9 million grant that was awarded to Yost and colleague Arthur Edison from the National Institutes of Health.

Jack Carmichael, Ph.D., chemistry, ’84, has been editing documents for MSU students and faculty members for the past several years, and is listed as one of the editors for the MSU Writing Center.

Joseph Hupp, Ph.D., chemistry, ’84, received the 2013 International Award of the Japan Society for Coordination Chemistry and the 2014 C. N. Reilly Award of the Society for Electroanalytical Chemistry.

Eric Erickson, Ph.D., chemistry, ’89, retired last November after 33 years of working for the Navy, and moved to Oregon. He now spends his time on the beach, in the forest and volunteering in the local schools.

Christine Hampton, M.S., chemistry, ’91; Ph.D., chemistry, ’99, recently completed a 10-month artist residency at the Ecumenical Center for Arts and Spirituality at the St. Francis Retreat Center in DeWitt, Mich., to develop cold-cast, bronze sculpting techniques. Her residency culminated with a solo exhibit at the Arts Council of Greater Lansing, Mich. Hampton has received many accolades, including having her sculptures accepted into ArtPrize—an international art exhibit in Grand Rapids, Mich.—for five consecutive years.

Margaret Landis, chemistry, ’93, senior principal scientist at Pfizer, Inc., New York, N.Y., was named one of six new NeXxt Fellows for 2013-2014 who will serve as mentors to young women in the NeXxt Scholars Program. The program—a partnership between the New York Academy of Sciences, the U.S. Department of State and a consortium of women’s colleges—aims to engage, connect and advance young women from countries with predominantly Muslim populations and young American women in pursuing undergraduate degrees in the STEM fields.

Ryan Richards, chemistry and forensic science, ’94, and his research group at the Colorado School of Mines and the National Renewable Energy Laboratory (NREL) recently reported a breakthrough in the understanding of lithium ion batteries in the journal Nature Communications (5: 3358 doi:10.1038/ncomms3358, 2014) that may have important implications for the future design of batteries.

Vernon Swope, chemistry and criminal justice, ’04; Ph.D., chemistry, ’10, is a staff scientist at Alcoa Howmet Research Center in Whitehall, Mich.

Josh Stoker, Ph.D., chemistry, ’09, is an assistant professor of radiation oncology physics and is working at the Mayo Clinic in Arizona.

Jasmine Lyons, chemistry, ’12, is in her first year of teaching chemistry at University Prep Science & Math High School, Detroit, Mich.

Robert Morelli, chemistry, ’13, was hired as an analytical chemist for MacDermid, Inc., four weeks after commencement. (It was his first interview.)
Retirements

Chris (Chi-Kwong) Chang, professor of organic chemistry, will retire in May 2014. His research focuses on the construction of heme enzyme models suitable for mechanistic studies, the elucidation of unknown heme prosthetic group structures, and the application of porphyrins as photodynamic therapy drugs for treating cancer. Chang, who came to MSU in 1976, was an Alfred P. Sloan Fellow (1980) and received the Henry-Dreyfus Teacher-Scholar Award (1981) and the MSU Distinguished Faculty Award (1991). He served on the editorial board of the Journal of Porphyrins & Metalloporphyrins (2000-2006). During leaves from MSU, Chang also was a professor at Hong Kong University of Science & Technology.

Thomas J. Pinnavaia, University Distinguished Professor Emeritus of inorganic and materials chemistry, retired in August 2013. His research focused on intercalation chemistry of complex layered oxides and he was always enthusiastic about the challenges of chemical research with inorganic materials. Pinnavaia, who joined the department in 1966, was the lead inventor on more than 80 issued and pending U.S. patents; served on the editorial boards of nine international scientific journals; and won national and international awards. He mentored more than 150 graduate students, research associates and visiting scholars during his MSU career.

Tom Geissinger, stockhandler, scientific supplies, and Rebecca Townsend, administrative assistant to the chemistry department, retired in December 2013.

Faculty Honors

Melanie Cooper, professor of chemistry and Lappan-Phillips professor of science education, received the 2013 James Flack Norris Award for Outstanding Achievement in the Teaching of Chemistry from the Northeastern Section of the American Chemical Society (ACS) as well as the ACS Award for Achievement and Research for the teaching and learning of chemistry.

Professor Marcos Dantus was named a 2014 fellow of The Optical Society for his work in the development of the multiphoton intrapulse interference phase scan for automated femtosecond pulse compression and shaping and for applications ranging from materials processing to bioimaging.

Professor Xuefei Huang was named a 2013 fellow of the American Chemical Society (ACS) in recognition of his work in developing novel glycosylation methods to synthesize complex oligosaccharides. He is chair-elect of the ACS, Division of Carbohydrate Chemistry.

Kennie Merz, Zichis Chair in chemistry and iCER director, was named the editor in chief of the American Chemical Society’s Journal of Chemical Information & Modeling.

New Faculty

The chemistry department has welcomed two new faculty members since its last newsletter:

Jian Hu joined the department as assistant professor in August 2013. His research focus is on structural biology. Hu holds a joint appointment with the Department of Biochemistry and Molecular Biology. Prior to coming to MSU, Hu was an associate research scientist at Yale University.

Kenneth (Kennie) M. Merz, Jr., joined MSU in July 2013 as the Joseph Zichis Endowed Chair in chemistry and the director of the Institute for Cyber-Enabled Research (iCER), the university's high-powered computer center that provides faculty and students with sophisticated software and hardware for research projects. His research focuses on computational approaches to biomolecular systems.

Four members of the department received 2013-2014 awards from the College of Natural Science: Professor William D. Wulff, Distinguished Faculty Award; Professor James McCusker, Junior Faculty Mentoring Award; Richard Staples, manager of the Center for Crystallographic Research, Distinguished Academic Staff Award; and director of general chemistry, Amy Pollock, Teaching Prize.

Professor Thomas Pinnavaia’s article, “Clay- Reinforced Epoxy Nanocomposites” (1994, 6, 2216-2219), is among the 25 most cited articles in the Chemistry of Materials journal. The article was cited 871 times, according to SciFinder, and 751 times, according to Web of Science. His most cited article, published in Science magazine, “A Neutral Templating Route to Mesoporous Molecular-Sieves” (1995, 267, 865-867), received more than 1,500 citations.

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Kenneth Merz named Joseph Zichis Endowed Chair in Chemistry

Kenneth (Kennie) M. Merz, Jr., was installed as the Joseph Zichis Chair in chemistry at an investiture ceremony held March 14 in the Christman Lounge at MSU's Wharton Center for the Performing Arts.

Merz comes to MSU from the University of Florida, where he was a Research Foundation Professor, the Edmund H. Prominski Professor of Chemistry and a member of the Quantum Theory Project. In addition to his distinguished standing in academia, Merz has worked in industry as the senior director of the Center for Informatics and Drug Discovery at Pharmacopeia and as the senior director of the ADMET Research and Development Group in their Accelrys software division. He is also the founder of QuantumBio, a software company in State College, Pennsylvania.

Merz said that he is both flattered and pleased to hold the Zichis chair.

“The recognition that comes with this chair means a lot to me, both as a researcher and for what it will do to advance the computational chemistry field,” Merz said. “These are incredibly important positions; they free you up to pursue your research projects without worrying about the vagaries of federal funding which, as we all know, is highly competitive.”

“It is exciting to have been able to recruit a nationally recognized scholar such as Kennie to occupy the Zichis chair,” said Rob Maleczka, chemistry department chairperson. “The ability to offer these endowed positions is among the most important benefits that a university can provide to its leadership. Although MSU offers superb opportunities for individuals to pursue their science, being able to couple an endowed position with what the university has to offer makes it even more attractive. We’re looking forward to great things.”

Support for the chair came, in part, from a significant estate gift made by Joseph Zichis, an MSU alumnus (B.S., biological science, ’32; M.S., chemistry, ’33; Ph.D., chemistry, ’36) through a bequest following his death in 1976. In 2012, a Chemistry Endowed Chair Enrichment Fund to support faculty positions was merged with the Zichis Fund to create the chair in his honor.

Kenneth M. Merz, Jr.

Inaugural endowed chair honors legacy of chemistry professor

For the past 61 years, Jim Dye has shared his chemistry expertise with thousands of students and hundreds of scientists. It’s only fitting that the first endowed chair in the MSU Department of Chemistry is named for him, honoring his scientific talents and legacy. This chair has been created to recognize one of the most influential and successful scientists and teachers that Michigan State has ever had on its faculty.

On July 1, the James L. Dye Endowed Chair in materials chemistry will be awarded to chemistry associate professor Thomas W. Hamann. Hamann’s research interests are focused on solving problems related to solar energy conversion. An official investiture ceremony to honor Dye and Hamann will be held on Sept. 5 from 3 to 5 p.m. in the Christman Lounge at MSU’s Wharton Center.

The James L. Dye Endowed Chair in materials chemistry is one of the most prominent scientific positions at the university, and will fortify the efforts of the Department of Chemistry to sustain and enhance its programs in materials chemistry.

“Endowed chairs strengthen a department by retaining and recruiting top-notch scientists,” said Robert Maleczka, Department of Chemistry chair. “These rock-star faculty members, such as Tom Hamann, attract the best and brightest graduate students.

“This endowed chair was created through the generosity of more than 100 donors meeting the challenge of one couple who contributed half of the needed funds,” Maleczka continued. “Many thanks to all of the generous donors who helped the department fulfill this significant challenge.”

James L. Dye

If you are interested in contributing to the James L. Dye Endowed Chair in materials chemistry, or starting a new endowed chair, contact Karen Wenk at 517-333-5962 or wenk@msu.edu.
Low-glycemic diet for stored red cells could advance blood transfusion medicine

Professor Dana Spence is taking his research to the bank—the blood bank, that is.

The MSU associate professor of chemistry has been studying red blood cells for several years. More recently, he has spent time focusing on red blood cell storage strategies, an interest he developed after discussing transfusion medicine at a National Institutes of Health meeting.

Spence was surprised to discover the high glucose levels in the red cell storage additive solutions in use today—about 40 millimolar (mM). A healthy person’s glucose level is around 4 to 6 mM, while a diabetic’s is around 8 mM.

He and his research group decided to investigate what would happen to the red cells if they were stored in a solution with a glucose level identical to that of a healthy person.

“We aren’t overhauling the current blood banking process. We are collecting and storing blood the same way they do in the blood banking world. However, we are using normal, healthy levels of glucose in the storage solutions,” Spence said.

In the United States, the current standard length of time that red blood cells can be stored is 42 days. Spence’s research group has preliminary evidence that the high glucose level, which provides energy for the cells during the storage period, may have an adverse effect on the stored red cells.

“These cells won’t be like normal, healthy red cells anymore. The high glucose level is going to interfere with the cells machinery and they won’t function properly,” Spence said.

At the start of the project, Spence’s research team added a normal amount of glucose to the storage bag—around 5 mM. What the research group found, however, was that the red cells stored in the lower-glucose solutions ran out of food after about 9 or 10 days.

“So every 5 days or so, we would open up the bag and add a small drop of a glucose solution to help maintain the glucose at healthy levels,” Spence said. “By doing this, we found we could keep certain characteristics of the cells as good on day 28 as they were on day 1.

“A recent, related concern in the blood banking community is a noticeable decrease in a transfusion patient’s ability to generate nitric oxide in the body.

“Normal red cells release adenosine triphosphate (ATP); when ATP binds to cells on the inside of blood vessels, nitric oxide is produced. This causes blood vessels to dilate,” Spence explained.

Red cells stored in the high-glucose solutions release less ATP and thus less nitric oxide is produced. This could cause problems with blood flow and lead to vessel blockage.

“Using a dynamic, flow-based in vitro method, we found that after nearly four weeks of storage, the cells stored in our solutions were producing 25-30 percent more nitric oxide than the cells that are stored in high-glucose solutions,” Spence noted.

The research group has begun further studies through the MSU In Vivo Facility.

The goal is not to extend the time that blood remains viable and safe, according to Spence.

“We have good data,” he said. “It’s very promising, and it’s very simple. But we need to ensure that the results are confirmed with in vivo studies before we get too excited.”

“However, in the blood banking world, we would never be able to open a bag and feed the cells—for safety reasons,” he added. “So the process we’ve been using in our lab to feed those cells could not be used in practice.”

Life Blood, a Spartan Innovations start-up, is currently developing the technologies—a method or a device—to slow-feed stored red blood cells such as the ones in Spence’s lab.

“Our goal is to make day-23 blood as safe as day-2 blood,” he said.

Although he realizes that his research has a long way to go, Spence is excited about the findings in his lab thus far.

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Dana Spence (right), associate professor of chemistry, and Chengpeng Chen, Ph.D. student, inspect 3D-printed microfluidic devices before placing them into a standard microplate reader to record the level of nitric oxide produced by the red cells stored in the lower-glucose solutions.
Chemistry department participates in DEQ “greenUp” conference

SU chemistry department faculty and alumni were well represented last October at greenUp: The 2013 Michigan Green Chemistry and Engineering Conference, sponsored by the Michigan Department of Environmental Quality (DEQ). The theme of the conference—which was held Oct. 23-24 at Grand Valley State University (GVSU) in Grand Rapids, Mich.—was “Designing a Sustainable Michigan.”

Chemistry professor and department chair Rob Maleczka was one of five panelists to discuss “Green Chemistry’s Place in the Sustainability Movement.” His role on the panel was to represent the perspective of start-up companies as he, along with Mitch Smith, professor of chemistry, are co-founders of Boropharm, an MSU technology spin-out. He also spoke about the discovery and development of catalytic deborylations in one of the breakout sessions.

Jason Lam, a chemistry Ph.D. student with professor Ned Jackson, won first prize for his poster, “Energy Upgrading of Bio-Oil Components via Electrocatalytic Hydrogenation.” Chemistry senior Kelsey Longe, working with Lam and currently applying to graduate schools, received second place for her poster, “Electrocatalytic Hydrogenation of Bio-Oil Components: A Foray into Alternative Energy,” coauthored with Michaelyn Lux, also a chemistry senior.

The conference was largely organized by Dalila Kovacs (Ph.D., chemistry, ’98), GVSU assistant professor of chemistry. Kovacs is a tireless advocate for green chemistry education and practices at state and national levels.

“MSU is at the forefront of green chemistry research and teaching—from the invention of industrially useful biocatalysts, to research on carbon-free fuels, to the development of membranes for pollutant oxidation, to Ned Jackson’s freshman seminar class,” Maleczka said. “Add to that the work going on at the MSU Bioeconomy Institute, and a Michigan Green Chemistry and Engineering Conference would be incomplete without the active participation of our faculty members, students and alumni. Besides, if you want to ‘greenUp’ you really need to ‘Go Green!’”

The annual statewide conference drew more than 150 participants, including manufacturers, researchers, chemists, engineers, industry executives, students, educators, entrepreneurs, decision makers and policymakers. Attendees learned how green chemistry and engineering can protect human health and the environment while helping businesses create new markets, reduce costs and gain a competitive edge.

Pictured L to R: MSU students Jason Lam, Kelsey Longe and Mahlet Garedew, and chemistry professor and department chairperson Rob Maleczka strike a pose with Angela Huesman and Bill Freckman of MSU’s Bioeconomy Institute in front of the MSU Green Chemistry exhibit.

Student Honors

Tom Casey, a graduate student in the McCracken Research Lab, won the international Electron Paramagnetic Resonance (EPR) Society Poster Award for his presentation entitled “Locating NO in a [FeNO]7 Complex using HYCORE: a Structural Context for Locating Substrates in Non-Heme FE(II) Dependent Dioxygenases,” at the 36th International EPR Symposium, held in Denver, Colo., July 28-Aug. 1, 2013. The award is given for the best poster presentation by a graduate student or postdoctoral researcher at the meeting.

Hovig Kouyoumdjian, a graduate student in the Huang Research Group, was honored with the 2014 MSU Excellence-in-Teaching Award. Applying the same enthusiasm for teaching that he applies to his research work, Kouyoumdjian creatively unites a keen awareness of chemistry education research literature, a desire to experiment with innovative teaching methods and a first-rate knowledge of organic chemistry with compassion for students. The result is an environment in which more than 300 engaged and responsive students are asking and answering questions and, most importantly, truly learning organic chemistry. Kouyoumdjian has served as a teaching assistant for organic chemistry, general chemistry and Lyman Briggs general chemistry.

Jacob Ludwig, a senior from Lake Orion, Mich., was recognized as the American Chemical Society Division of Organic Chemistry Outstanding Student for 2013. This award recognizes senior chemistry students who have displayed a significant aptitude for organic chemistry as evidenced by their formal course work as well as their research accomplishments and the student’s desire to pursue a career in chemistry.
Bomb-detecting lasers could be major security breakthrough

Professor Marcos Dantus has put the possibility of bomb-detecting lasers at security checkpoints within reach. His research, featured in the September 2013 issue of Applied Physics Letters, shows how a laser he developed can detect micro traces of explosive chemicals on clothing and luggage.

"Since this method uses a single beam and requires no bulky spectrometers, it is quite practical and could scan many people and their belongings quickly," Dantus said. "Not only does it detect the explosive material, but it also provides an image of the chemical's exact location, even if it's merely a minute trace on a zipper."

This doesn't mean that security forces will be armed with handheld lasers in airports, however. The technology more likely would be used in a conveyor belt, such as the X-ray scanners already used for airport security.

"The low-energy laser is safe to use on both luggage and passengers," Dantus added.

For decades, scientists have been working to develop lasers that are powerful enough for detection, but safe enough to use on people. Dantus' initial spark for this breakthrough came from his collaboration with Harvard University that developed a laser that could be used to detect cancer.

"While working on biomedical imaging, I began exploring additional applications," said Dantus, who is the founder of BioPhotonic Solutions, a high tech company he launched in 2003 to commercialize technology invented by his MSU research group. "We soon learned how effective it was for detecting traces of hazardous substances from distances up to 10 meters away."

Dantus' bomb-detecting laser works as a single beam, but uses two pulses. The first resonates with certain chemical frequencies found in explosives. The second, a shadow pulse, serves as a reference. A discrepancy between the two pulses indicates the presence of explosive materials.

"The laser is not affected by the color or surface of clothes or luggage," Dantus said. "The resonant pulse and the shadow pulse are always in balance unless something is detected. Our method has Raman chemical specificity, excellent sensitivity and robust performance on virtually all surfaces."

An aerospace company has already expressed interest in furthering this technology. With additional funding, a stand-alone prototype could be created in about one year, according to Dantus.

Novel approach could advance tumor vaccine research

An MSU research team is investigating a novel approach to develop an effective tumor vaccine—harnessing the power of the body's immune system to prevent cancer. It could also work in conjunction with the treatment methods now commonly used—such as surgery, radiation and chemotherapy.

But this is a challenging undertaking.

"Our body's immune system is very powerful when it comes to fighting against bacteria and viruses," said Xuefei Huang, professor of chemistry. "However, cancer cells develop many ways to escape detection by our immune system. As a result, cancer grows uncontrollably. The development of an effective vaccine is challenging as we must find ways to overcome this obstacle and train the immune system to recognize and selectively kill the cancer cells."

The MSU scientists are collaborating with researchers from the Georgia Institute of Technology and the University of California, Irvine, as well as the National Cancer Institute.

The team is developing novel carrier systems—cowpea mosaic virus capsid (CPMV), tobacco mosaic virus (TMV) and bacteriophage Qß—to deliver tumor-associated carbohydrate antigens to the immune system. These carrier systems are collectively referred to as virus-like particles (VLPs).

"These particles have been shown to potently enhance the antibody responses, but no one has investigated them as carriers for tumor-associated carbohydrate antigens," Huang explained. "Together with our collaborators, we are the first group to do this."

The group has found that the VLPs do indeed elicit significant amounts of antibodies against these types of antigens. The immune responses generated can significantly reduce tumor development in mice.

"We are currently optimizing our constructs using mouse tumor models," Huang said. "The next step is to develop them for clinical trials in human patients."

"Cancer vaccine development is traditionally performed by immunologists," he continued. "However, with the understanding of the immune system on the molecular levels, chemists have begun to play important roles in this field. Our work demonstrates the power of chemistry as the central science and the increasingly interdisciplinary nature of modern science."
Chemistry alum turns author to detail his path to success

For Patrick Lukulay, the path to becoming an executive was a hard-won fight. He was born in Sierra Leone to a polygamous father and grew up with 25 siblings under challenging circumstances. He witnessed firsthand the poverty, uncertainty and challenges that many children in developing nations face. However, through good fortune and the generosity of others, Lukulay left his village and pursued an education, eventually earning a Ph.D. in analytical chemistry from Michigan State University.

Lukulay is now the vice president of Global Health Impact Programs for the U.S. Pharmacopeial Convention (USP) and director of Promoting the Quality of Medicines, a USAID-funded program. He has become a global champion for access to good-quality medicines in developing countries and advocates strengthening quality assurance systems in sub-Saharan Africa by building human resource capacity in pharmaceutical quality assurance and quality control.

Lukulay details his career path in the book *The Executive in You: My Journey from the African Village to Corporate America* (Tate Publishing, 2013). He offers wisdom and insight for people who wish to change their lives, while reminding readers that what really matters is serving as a stepping stone to others’ success.

“Your beginning does not necessarily dictate the end of your journey,” Lukulay said. “Sometimes, opportunities are disguised as roadblocks. Success is about overcoming these roadblocks and sticking to the mission.”

Lukulay returned to MSU in October 2013 for a special presentation on how others can make their careers more relevant in today’s global environment.