

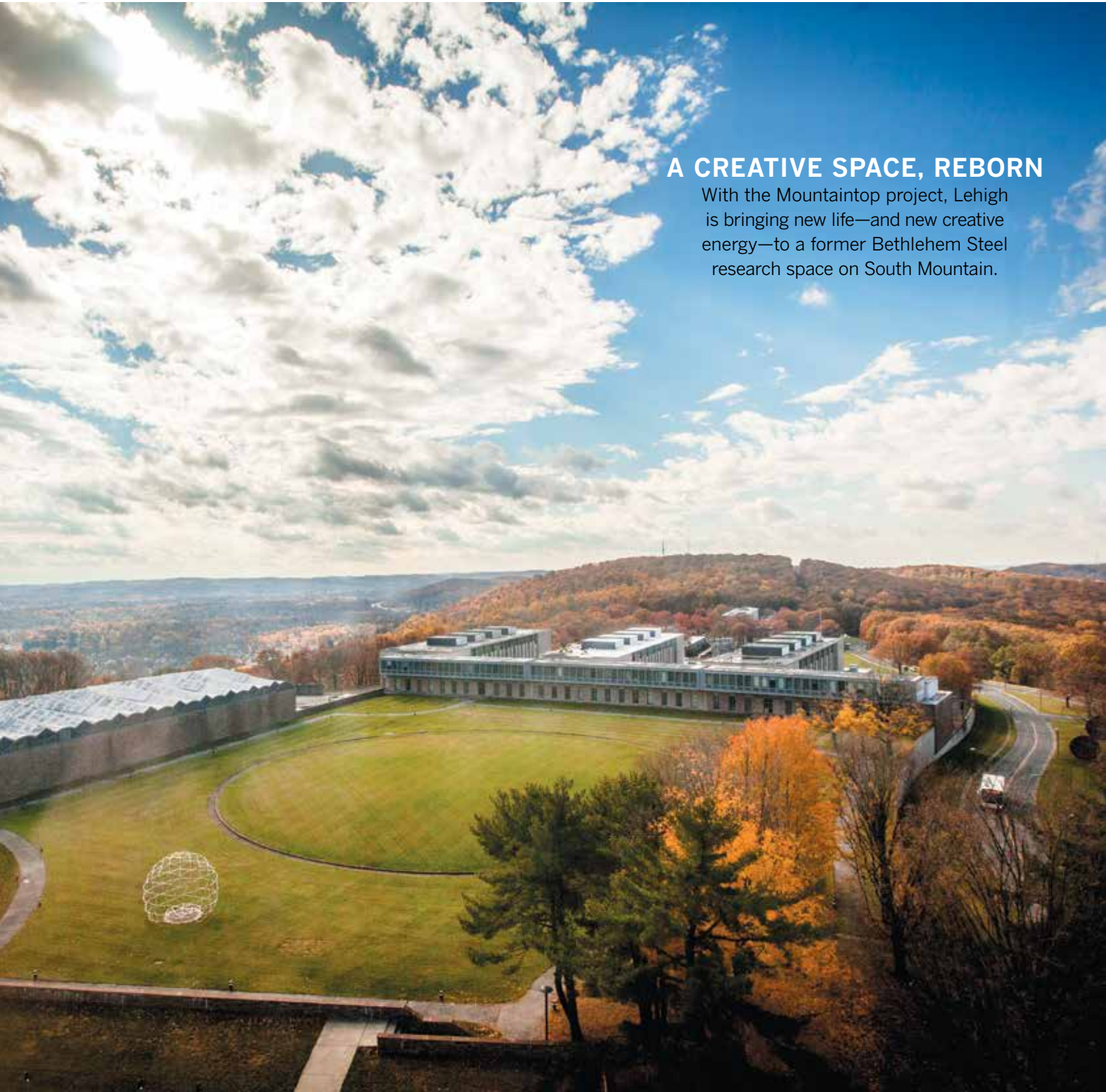
W I N T E R 2 0 1 4

LEHIGH

B U L L E T I N

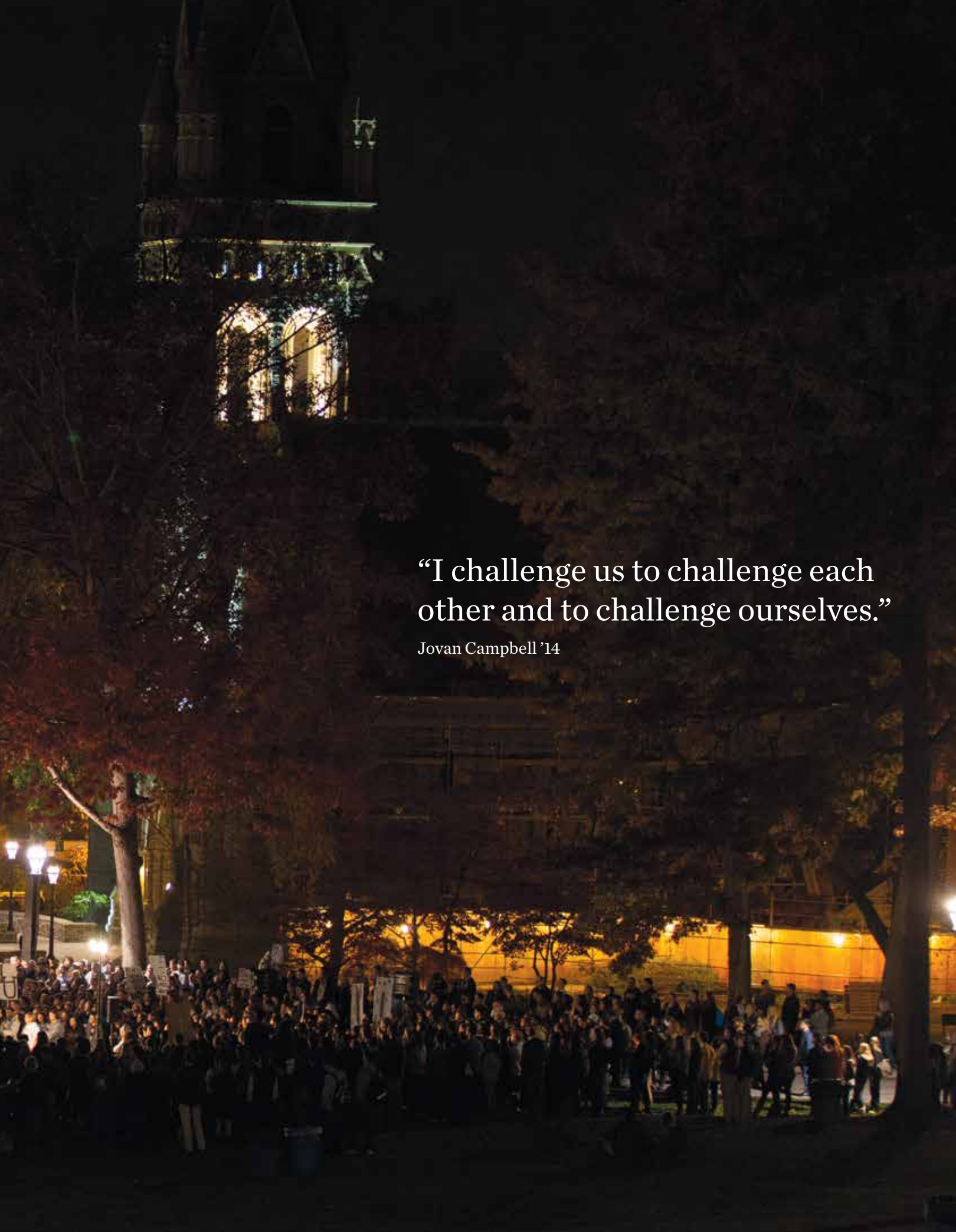
A CREATIVE SPACE, REBORN

With the Mountaintop project, Lehigh is bringing new life—and new creative energy—to a former Bethlehem Steel research space on South Mountain.



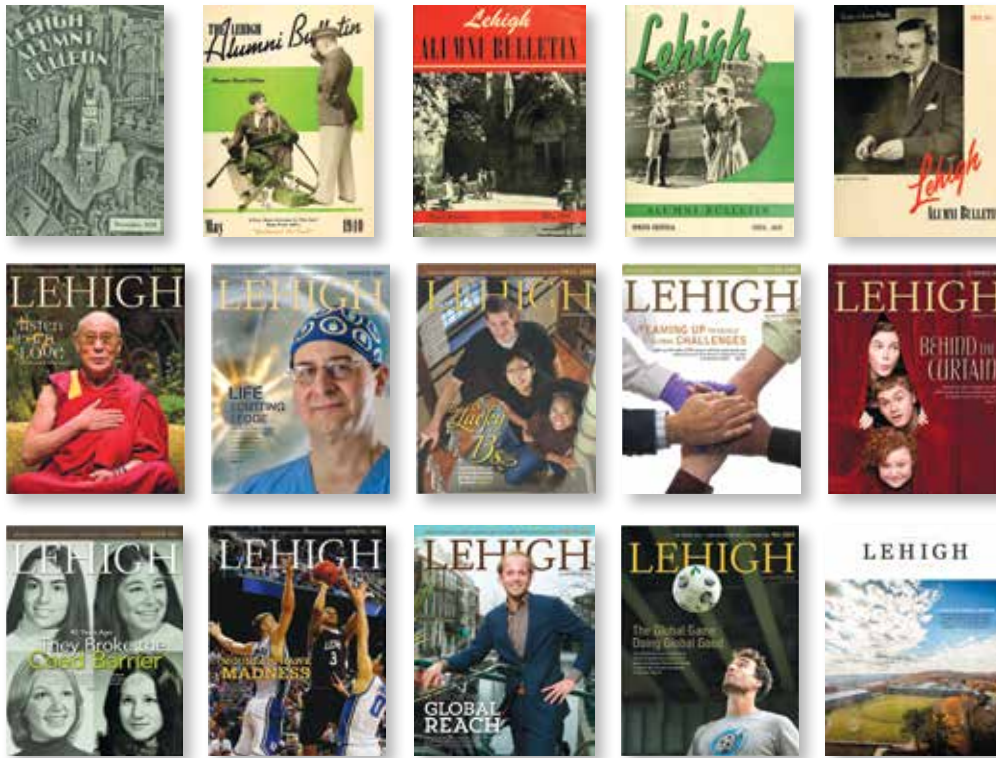


UNIVERSITY FRONT LAWN. NOV. 6, 2013 A crowd of approximately 1,600 students, faculty and staff gathered to condemn intolerance and foster unity in the wake of a racially motivated vandalism at the UMOJA House. At the rally, the University community showed their unity and willingness to tackle important issues related to diversity and inclusion. (See story, Page 8)

A night photograph of a large crowd gathered in front of a building with a prominent tower. The scene is illuminated by streetlights and building lights, creating a warm, golden glow. The crowd is dense and appears to be participating in a public event or protest. The tower in the background is a focal point, with its lights reflecting on the surrounding trees and the crowd below.

“I challenge us to challenge each other and to challenge ourselves.”

Jovan Campbell '14



Time for a Change

Editor Tim Hyland on the ever-evolving face of the *Lehigh Bulletin*, and how the magazine's new look serves the confident, dynamic Lehigh of today.

SINCE MY ARRIVAL here at Lehigh late last spring, I have been continually amazed by this university.

From the ambitious and inquisitive students to the brilliant faculty, the dedicated staff to the deeply committed alumni, I have found Lehigh to be a wholly unique place—a university that knows what it is and what it stands for, and knows, too, just how great it can be when it's at its very best. This is a truly special place, and you are rightfully proud to call yourself alumni.

I hope you will be proud, too, of the magazine that you now hold in your hands.

When we decided to pursue a redesign of the *Bulletin* months ago, our goal was simple: We wanted to create a magazine that would directly mirror all of the characteristics that make Lehigh one of the best (according to our peers) and most beloved (according to our alumni) universities in the world. We wanted a magazine that would look and feel classic yet contemporary, historic yet modern, literary yet cutting-edge. We wanted a magazine that would reflect the impressive and amazing history of this place, yet also conveyed the energy and excitement that pervade our campus every single day. And we wanted a magazine

that fit perfectly with the new brand image we have cultivated around the theme of “Redefining What It Means to Lead”—an image of confidence and dynamism that has helped shape everything from our new University website to our marketing efforts to the magazine you hold in your hands.

After months of work, and after gathering input from key stakeholders including our alumni, we ultimately came up with the design and content that you see in this issue today. We believe we have created precisely what we wanted to create, way back when we began this process: A magazine worthy of representing Lehigh.

I invite you to share your thoughts and comments on our new design. You can reach me at the address at the right, or email me at any time at tih313@lehigh.edu.

Thank you for your support. And thank you, as always, for reading the *Bulletin*.

Gratefully,
Tim Hyland, *Editor*

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LEHIGH

26 Up on the Mountain

The buildings once were home to the industrial engineers of mighty Bethlehem Steel. Today, the vast empty spaces that have been left behind represent an unprecedented opportunity for Lehigh—and may even offer a glimpse into the future of higher education. *by the Bulletin Staff*

30 The Struggle and the Glory

Nothing about writing has ever come easy for Stephanie Powell Watts. But after years of struggle and more than a few doubts, Powell appears on her way to becoming a literary star. *by Tim Hyland*

34 Attacking from All Angles

From computer science to data imaging to molecular research, Lehigh researchers are using their unique perspectives and varied expertise to crack the code of cancer. *by Brian Schleiter*



38 The Spirit of Spirit Week

Sure, the game is important. *Really* important. But in the end, Spirit Week isn't just about football. It's about a tradition that has tied generations of Lehigh students and alumni together. *photos by Christa Neu*

DEPARTMENTS

4 FROM THE PRESIDENT

5 Correspondence

80 TRIVIA

A Rivalry Beyond Any Other

6 ON CAMPUS

6 The Consummate Newsman

7 FOUR QUESTIONS

Seymour Hersh

8 A Call to Action

10 Decrying 'Generational Theft'

11 LENS

The Comforts of Home

12 Is There a Way Forward for Syria?

14 RESEARCH

14 Malaria's Big Surge

15 SCHEMATIC

The Power of Solar Power

16 Small But Mighty

17 A Journey into the 'Proof of Islam'

18 CULTURE

18 For Sametz, a New and Difficult Commission

19 EXHIBIT

Is It Art?

19 'First Four' Wins Top Honors

20 Freestyle Furniture Design

22 SPORTS

22 The Countdown to 150

23 STATS

Adelou 'Lou' Adesida '15

24 Another Measure of Success

44 CLASS NOTES

59 Choral Arts Reunion

ON THE COVER An aerial view of Buildings B and C at Mountaintop, where Lehigh is moving forward with a plan to open up exciting new opportunities for students. (See story, Page 26) Photo by Christa Neu



Exploring and Growing, Intellectually and Personally

AS I THINK about my time at Lehigh, I am guided by what brought me here almost eight years ago. It is Lehigh's commitment to its students, a commitment beyond just providing the best faculty and best facilities. It is a commitment to creating an environment that provides students opportunities to explore and to grow, both intellectually and personally.

I think the value of a college education is determined by what our graduates become in their years after Lehigh. It is the contributions they make to society and the fulfillment they feel in their careers and in their lives that are the best measures of the value of their years here. These contributions and fulfillment are evident in the great stories our alumni bring back, stories of lives well lived.

Lehigh has a strong history of helping students to learn to think critically, to bring their knowledge to bear on open-ended problems, and to work together in diverse teams. The Mountaintop program is our most recent and boldest effort to give students the chance to do this. It will put Lehigh in the vanguard of innovation in higher education.

Last summer 35 students participated in five pilot projects at Mountaintop. If you have not already done so, please look at the video highlighting these Mountaintop projects, which can be seen at our new Mountaintop site, Lehigh.edu/mountaintop. Their words capture, better than mine ever could, the excitement of pursuing intellectual passions in a unique learning environment.

Scott Belair's generous gift allows us to begin turning Buildings B and C into extraordinary spaces of learning and discovery. This coming summer students will conduct a second set of Mountaintop pilot projects. From there Mountaintop will evolve and grow in phases. To fully realize our vision and ambitions for this project, we hope to raise as much as \$200 million—\$100 million for capital investments, and another \$100 million in endowment to support the programming that will make those buildings so revolutionary.

In addition to great spaces, an environment that provides students opportunities to explore and to grow, both intellectually and personally, requires mutual respect and cultural understanding. A diverse student body enriches our campus, and enhances the learning experience for all

students. Learning to work and live with people, who come from different backgrounds, and have different views, is essential to a fulfilling and successful life. Learning can take place at times when there is disagreement, and when we come together when there are conflicts.

An ugly incident at the UMOJA House this past November, when there was racist spray painting and eggs thrown at the house in the middle of the night, demonstrated that we still have work to do to create the welcoming climate of mutual respect and understanding that we want. Soon after the incident, some 1,600 members of the Lehigh community gathered at the flagpole in the center of campus to condemn all acts of intolerance and aggression. Hurtful actions take many forms, some more visible than others. All are corrosive to a healthy environment. All are unacceptable.

As the rally demonstrated, the Lehigh community stands united in its condemnation of the unacceptable and its commitment to a more inclusive Lehigh. I believe that we are on the right path. I will continue to do all I can to make Lehigh a place where every student feels comfortable, where every student feels at home.

Lehigh University is an institution made strong by its great people. Lehigh's alumni, parents, faculty, staff and friends are ambassadors and supporters, and important role models for our students. You are the defining part of Lehigh's commitment to its students that makes South Mountain the special place that it is.

I want to thank the many of you who have wished me well in my new position as President of Imperial College London. Now is not the time for goodbyes. There is more to do, and I look forward to the days and months ahead at Lehigh as we create an environment that provides students opportunities to explore and to grow, both intellectually and personally.

A handwritten signature in black ink that reads "Alice P. Gast". The signature is fluid and cursive, written in a professional style.

Gratefully,
Alice P. Gast, *President*

'A Remarkable Leader' Prepares to Say Good-Bye

Lehigh President Alice Gast will step down in July 2014, after eight years at Lehigh, to become President of Imperial College London.

LEHIGH PRESIDENT Alice P. Gast, the first woman to serve as the university's president, announced in early January that she would step down on July 31, 2014, after accepting an appointment as the President of Imperial College London.

"As excited as I am about joining Imperial College London, there is much I will miss about Lehigh," said Gast in an e-mail to the campus community. "One of the things that drew me to South Mountain is Lehigh's commitment to its students. Each year I am struck by the personal and intellectual growth of our students over the course of their years here. I feel a special pride in their accomplishments. I will remember and carry with me always their hugs and handshakes at commencement and our many conversations at lunches, dinners and around campus."

Imperial College London is a science-based institution with a reputation for excellence in teaching and research that attracts 14,000 students and 6,000 staff of the highest international quality. It was ranked 10th in the World University Rankings published by *Times Higher Education*. Innovative research at the college explores the interface between science, medicine, engineering and business, delivering practical solutions that improve quality of life and the environment. Gast will be Imperial's first woman president.

Brad Eric Scheler, chairman of Lehigh's Board of Trustees, said after the announcement that a search committee would be appointed in the near term and that he would keep the university community informed about developments in the search process. He praised Gast for her seven-and-a-half years of service as the 13th president in Lehigh's 148-year history.

"Alice has been a remarkable leader. With boundless energy, enthusiasm, wisdom, judgment and insight, Alice has advanced and best positioned Lehigh to be at the forefront of higher education in the 21st century," said Scheler. "Her commitment to students and her advocacy with respect to the import of residential research universities in educating leaders and improving society made her the right and ideal leader for Lehigh. We thank Alice for her tireless service and dedication to Lehigh."

During Gast's tenure, Lehigh completed a campus-wide strategic planning and implementation process; concluded a \$500-million capital campaign and has since raised an additional \$225 million in new resources for the university; expanded work in and with the City of Bethlehem; increased the size of the university's footprint with the addition of the 750-acre Stabler Campus; increased the university's international presence and has perpetuated and expanded innovative new approaches to student-directed learning with the launch of Lehigh's Mountaintop Campus initiative.

During her remaining months on South Mountain, Gast will continue to focus on issues of diversity and inclusion at the university, to build upon the momentum of the Mountaintop initiative, to raise additional resources for the university and to be a resource to the Board of Trustees in ensuring a smooth transition to a new presidency.

In her e-mail, Gast expressed gratitude to Lehigh's alumni community for continuing to engage students and support initiatives to improve all aspects of the university.

"I have learned a tremendous amount from our alumni and friends and I greatly value my relationships with so many dedicated and passionate supporters. Their commitment to the University and our students is what distinguishes Lehigh University from other institutions," said Gast.

Before becoming Lehigh's 13th president, Gast served as vice

president for research and associate provost at the Massachusetts Institute of Technology for almost five years. She served as associate chair of the department of chemical engineering at Stanford University, where she established herself as a world-class researcher and professor. During her years at Stanford, Gast received the National Science Foundation Presidential Young Investigator Award, the National Academy of Science Award for Initiative in Research, a Guggenheim Fellowship, and the Alexander von Humboldt Award.

Gast continued her work as an international scholar while serving as Lehigh president. In September 2010, she was one of three new science envoys named by the U.S. State Department—a role that includes encouraging U.S. global engagement in science and technology, and advising the White House, the State Department and the U.S. scientific community about the knowledge and insights she gains from her travels and interactions as a private citizen. Her work as a science envoy has included travels to Kazakhstan, Uzbekistan and Azerbaijan.

The daughter of a biochemist, Gast began her academic career as a student at the University of Southern California, where she distinguished herself as valedictorian of her graduating class in 1980. She went on to earn her M.A. and Ph.D. degrees from Princeton University. Before receiving her Ph.D., she accepted a National Science Foundation post-doctoral fellowship at L'Ecole Supérieure de Physique et de Chimie Industrielles in Paris, after which she formally began her research and teaching career as a member of the chemical engineering faculty at Stanford.

As she transitions to the next phase of her career, Gast says she will always fondly recall the memories she's made over the past several years, which included everything from watching Lehigh's basketball team upset Duke to events like Spring Fling and Spooktacular. On behalf of her husband, Bradley J. Askins, and her children, Rebecca and David, she thanked the university community for welcoming her family to South Mountain.

"Brad and I have called Lehigh home for the past seven and a half years," said Gast. "It is our good fortune to have been part of this wonderful, smart, caring and welcoming community."



ON CAMPUS

NEWS FROM LEHIGH

A 'Consummate Newsman'

Marty Baron, executive editor for the *Washington Post*,
is a true believer in good journalism.

MARTIN "MARTY" BARON '76, '76G has won more than his share of honors over the course of his nearly 40-year career in journalism.

In 2001, Baron was named the nation's top newspaper editor by *Editor & Publisher* magazine. Three years later, he won the same honor from the National Press Foundation. During his much-lauded tenure as editor of the *Boston Globe*, he and his staff won a remarkable six Pulitzer Prizes in categories ranging from public service to national reporting to criticism.

Now, Baron has another honor to brag about: Lehigh commencement speaker.

Baron, who has served as executive editor for the *Washington Post* since Jan. 2, 2013, and was recently described by the *National Journal* as "the consummate newsman," will deliver the address—and receive an honorary degree, as well—during Lehigh's 148th commencement ceremony on May 19, 2014.

"His great experience and leadership throughout his impressive journalistic career will be an inspiration to our students," said Lehigh President Alice P. Gast. "His work illustrates the critical role that good journalism can play in informing and engaging people on important issues."

Baron earned his B.A. and MBA from Lehigh and landed his first newspaper job at the *Miami Herald*. He moved to the *Los Angeles Times*, where he became business editor. In 1996, he was appointed associate managing editor of *The New York Times* and in 2000 he was named executive editor of the *Miami Herald*.

In Boston, Baron became one of the leading figures in the news industry. His journalists won widespread praise for their coverage of the Catholic Church clergy abuse scandal, and were awarded the Pulitzer Prize for Public Service in 2003.

While some observers predict that the 21st century will see newspapers fade into history, Baron remains steadfast in his belief that good journalism can form the basis for good business. Speaking to the New England Associated Press Executives Association in 2012, he said that newspapers were "badly bruised"—but "not beaten."

"While there is absolutely no reason to be comfortable or complacent, there is also no reason to lose confidence in our capacity to survive—and even eventually to prosper."



DINA RUDICK/THE BOSTON GLOBE VIA GETTY IMAGES



STUDENT LIFE GROWING STRONGER

Lehigh's sororities and fraternities continue to show improvement on a number of fronts, according to a report released last summer by the university's Greek Accreditation Committee.

Of the 30 fraternities and sororities reviewed this past academic year, nine chapters earned gold status, 13 earned silver and four earned a bronze ranking. Four chapters ranked "poor," as opposed to five last year. The office of fraternity and sorority affairs (OFSA) reviewed the rankings report with chapter representatives and is working with those that ranked poorly to help them improve, said Tim Wilkinson, OFSA director.

The accreditation process was developed in 2004 as part of the Strengthening Greek Life Task Force. "Our goal is fostering a living and learning experience that enriches student life on campus," Wilkinson said. "The past year has not been without its challenges, but everyone involved in this process shares a commitment to a campus culture that is respectful, inclusive and accepting."

CONSTRUCTION A WELCOME SPACE

For generations, Packard Lab lobby has served as a prominent reminder of Lehigh's proud heritage in engineering. By spring 2014, the lobby will be expanded and reshaped into a vibrant perspective on the legacy of the engineering college. Exhibit and architectural designer Ralph Applebaum Associates is optimizing the lobby's space for students and visitors while showcasing the exploits of Lehigh engineers over time. Planned improvements include new meeting spaces, a media wall and a complete renovation of the beloved "Old No. 1" Packard automobile.

FIGURE 1



Lehigh's history in journalism dates back to the 19th century. The university has offered a degree in journalism since 1927, and the *Brown & White* has been published since 1894. Today, the department of journalism and communication remains at the forefront of the fast-changing field, thanks in large part to the cutting-edge work from faculty such as Jeremy Littau, whose work examines social involvement in online virtual communities.

NEWSROOM

Martin "Marty" Baron '76 '76G earned plaudits for his work as editor of the *Boston Globe*.

FOUR QUESTIONS FOR Seymour Hersh, Investigative Journalist



SEYMOUR HERSH *The renowned investigative journalist came to Lehigh in early October to deliver the annual Tresolini lecture.*

CHRISTA NEU

1 You've been openly critical of the Obama administration. Why?

Look, he's smart. He's really bright. His foreign policy is ... I'm just sort of shocked how close it is to the Bush/Cheney (administration). This isn't a great insight. He continued the war in Afghanistan. What are we doing in Afghanistan? I'm troubled by that. It looks like now, (U.S. Secretary of State) Kerry is going to take a stab at doing something about the Middle East, with the peace talks. But I think it was June of 2009, (Obama) went to Cairo and gave a really great speech about the Middle East and the need to do something, but he didn't do much. So yeah, saying I'm disappointed would be putting it in a mild way.

2 You've been reporting for years on the excesses of the government's surveillance efforts. Do you think we need this level of surveillance?

I'm a skeptic. I ended up thinking, after years of reporting on the CIA and the KGB, that if we didn't have either of these agencies, we'd probably be just as well off. They didn't do any good and they certainly did a lot of bad stuff.

3 Do you see any value to our surveillance capabilities?

I always think with the NSA—all this meta-data stuff—look, meta-data is great for police work because after a crime, you can go and really do things. You could find out, for example, if a cell phone was used once, two hours before the event and never again. You can go back five years and determine that this phone was only used once. And then you have some leads. But you had to have the event. So for police work, it's probably essential. It will probably be a good thing in the long run. But for stopping someone who wants to throw a bomb ... they couldn't find the brothers in Boston.

4 Are there any big shoes left to drop with regard to NSA revelations?

All I can tell you is that there are people in the government who are really concerned about what (NSA leaker Edward Snowden) has. And there also could be some stuff that should be published. But some of it ... I don't know why, if I'm the president of Brazil, that I'm surprised we copy him. We copy everybody. We copy the European Union. Of course we do. And they would do it too, I suppose, if they could. That doesn't mean it should be (the case). It's crazy to do it. It's a waste of an asset.

A Call to Action

Students lead efforts to improve the campus climate by bringing conversations about diversity and inclusion to the forefront.

EARLY IN the fall 2013 semester, a group of undergraduate students came together to lead the campus community in taking a proactive stand against inequality and discrimination.

They called themselves FBR—short for “From Beneath the Rug”—and expressed their view that Lehigh needed to open up the dialogue about diversity issues on campus.

In October, the students posted fliers in buildings across campus that touched on a wide range of topics related to discrimination. They staged a silent protest on October 4, held open forums in dialogue, and worked with university leadership on several objectives. At Founder’s Day on October 10, student speaker Brenda Martinez ’15 challenged the university community to take a more proactive stand against discrimination. She called attention to the protests and the fliers, and she read anonymous statements from current undergraduates, which described instances where students felt targeted or marginalized as a result of their identity.

Sadly, an incident of hate and racial intolerance followed only weeks after Martinez’s speech. In the early morning hours of November 6, the UMOJA House—a residence hall established in 1989 as a safe space for underrepresented students of color—was egged, and racial slurs were spray-painted on the exterior of the building and on sidewalks and staircases near UMOJA and McClintic-Marshall House (M&M). The vandalism came at a time when UMOJA was celebrating its tenth year on ‘The Hill’; it moved there from Warren Square in 2003.

After the incident—one which President Alice P. Gast swiftly condemned as “cowardly and hateful”—Lehigh came together to demonstrate unity and condemn intolerance. “The provost and I are strongly supportive of, and will continue to be involved with, the student groups that have come together to make Lehigh a welcoming place of mutual respect,” Gast said in a message to the entire campus community. “We all need to stand together as a community against all acts that are motivated by intolerance and aggression.”

Horrified by the photos of the vandalism that circulated on social media, several professors and their students gathered for an impromptu discussion in the Maginnes Hall lobby the day of the incident. The discussion continued in Grace Lounge in the University Center. Later that evening, more than 1,600 students, faculty and staff assembled on the University Front Lawn for a rally organized by FBR and others, where community members spoke out and shared their experiences



CHRISTA NEU

at Lehigh with respect to issues of equity and inclusion. The rally was followed by a march to the UMOJA House.

“The impetus for the rally was generated by students, with support from the faculty and help from the administration,” said Provost Pat Farrell. “It was a student idea to have such a rally, and I really consider that very impressive—not only how the rally originated, but also that so many on campus were willing to come out and support the overall notion that we can and should take responsibility for improving the climate on campus.”

“My initial thought at the rally was ‘Wow, the students are not here alone. There are people who are paying attention,’” says Tyrone Russell, director of multicultural affairs. “But more so, it made me feel that you shouldn’t let the act of two or three people make you feel as if the whole world is against you.”

While the rally was an important moment for the campus community, James Peterson, director of Africana studies and associate professor of English, says that it should not be considered an end point in Lehigh’s effort to create a more inclusive environment for all students, no matter their race, ethnicity, sexual orientation or socioeconomic background. Peterson believes that it is easier for the community to embrace FBR’s mission in the aftermath of what happened at the UMOJA House incident, because the students were proactive in jumpstarting conversations on some challenging topics.

“FBR is the model on leadership on equity for us. It’s collaborative, it’s proactive and I think it’ll be sustainable,” says Peterson. “These are the same kinds of students that were involved in The Movement. It was a different time, but it’s the same kind of student.”

Conversations about social hierarchies and privilege, Peterson says, are part of the reason why FBR's efforts early in the fall semester were met with some resistance. Others agree, but they say that such conversations, while not always comfortable, can be invaluable. "[Conversations about privilege] are uncomfortable, they can be messy, and people's feelings are going to be hurt for a while," said Rita Jones, director of the Women's Center and a faculty member in women, gender and sexuality studies. "Let's be okay with being uncomfortable."

To that end, university leadership, including President Gast and Provost Farrell, have regularly met with students to develop a list of action items to work toward making Lehigh more inclusive. They plan to establish a permanent student group that will work on projects that will positively affect the campus climate. Diversity and inclusion will be the major topic for the February 2014 Board of Trustees meeting.

"What's happening now, and what will continue happening in the coming weeks and months, is figuring out how we coordinate our efforts to avoid duplication," says Henry Odi, vice provost for academic diversity. "If we're not coordinated, there will be duplication of efforts, there will be people working in silos, and there will be an increase in frustrations. Working alone is not going to help us grow."

"We need to move ahead on the ideas that will make the biggest difference now, and develop a thoughtful, comprehensive plan going forward that incorporates the best of our ideas," says John Smeaton, vice provost for student affairs. "Short-term and long-term initiatives that change the culture are essential."

Lehigh will assess the need for a curricular requirement related to diversity and inclusion. Odi says that while there is a strong offering of such courses currently offered, the university must also expand those courses and recruit more diverse faculty. He is currently leading an effort alongside department chairs and faculty to facilitate the development of inclusion action plans for each academic department.

Russell said it was important to avoid underestimating Lehigh's ability to address its issues and transform the culture. "Why are we in the business of education if we can't take on this challenge?" asks Russell. "We bring an 17- or 18-year old to campus, with professors who are masters of information; why do we do that? It's because we know the capacity for learning is unlimited."

The university is working to create a curriculum for incoming first-year students prior to their matriculation. This summer opportunity will be geared toward first-generation college students and other identified student populations in order to support their successful transition to Lehigh. The UMOJA House is an important component of Lehigh's effort as well—leadership is working closely with students to develop more programming in the space and is considering potential facility improvements as well. "The UMOJA House should be a shining beacon in terms of residential life that reflects our commitment to the celebration of diversity and culture," says Peterson.

While university leadership acknowledges the fact that changes must continue, they also recognize the fact that Lehigh's progress on these issues over the years has empowered students to speak out and challenge the community to improve. The advocacy and equity unit of student affairs—the Office of Multicultural Affairs, the Women's Center, and LGBTQIA services—and several academic departments have helped students find their voice.

"What we've done in this office and in other offices is this: we put students in positions to be confident and comfortable at this institution and still feel supported, which is why they aren't transferring out," says Russell.

"The emergence of the FBR group has been a gift to Lehigh," says Smeaton. "Their passion, courage to speak out, and their focus on unity and constructive conversation centered on improving Lehigh has been amazing."

Adds Farrell: "I think the most important thing is that we're now viewing this issue be a constant topic of conversation. I think, in the past, it's been almost episodic—maybe giving the illusion that the issue was raised, the issue was addressed and the problem was solved. We now recognize that it's not episodic, and it will take sustained, consistent effort to make the kind of progress we'd like to make."—*Bulletin staff*



FIGURE 2



Lehigh's International Week, which was celebrated in early November, is one of the largest events of its kind in the country. It is planned each year by Lehigh's Global Union, which is comprised of more than 50 student groups.

In the wake of a bias incident this fall, Lehigh is taking important steps to address issues of diversity and inclusion on campus.



CHRISTA NEU

APPOINTMENT TRISH BOYLES NAMED NEW LGBTQIA DIRECTOR

Trish Boyles, a former professor of business and entrepreneurial studies at Muhlenberg College and strategic director with HouseLogix Inc., has been appointed director of Lehigh's Lesbian, Gay, Bisexual, Transgender, Queer, Intersex and Ally (LGBTQIA) program.

"I am delighted that Dr. Boyles will be joining the Lehigh family," said Vice Provost of Student Affairs John Smeaton. "I know she will be a valuable contributor to our university-wide commitment to embrace and put into action the values embedded in the Principles of our Equitable Community."

Boyles has been involved in several campus organizations for LGBT support and education, and has conducted doctoral-level research on LGB individuals. Her educational background in strategic planning and management and her practical experience in managing people, planning and projects will be critical to fostering university-wide support for sexual and gender-variant students, Smeaton said. At Lehigh, Boyles will head up the office that seeks to change the university climate by inspiring a vision of diversity that is aware of, engaged in and appreciative of issues related to sexual orientation and gender identity/expression.

"I think LGBTQIA Services at Lehigh is well-positioned to make strong and widespread partnerships across campus," she said. "Based on my conversations ... I believe there is a campus-wide vision and growing momentum towards the creation of a climate that not only accepts, but truly empowers LGBTQIA students to be themselves."—*Linda Harbrecht*

CHRISTA NEU

APPOINTMENT A NEW DEAN FOR CBE

Calling her a “renowned scholar and an experienced academic leader,” Lehigh President Alice P. Gast in December introduced Georgette Chapman Phillips as the next dean of Lehigh’s College of Business and Economics (CBE).

Currently the vice dean for technology-enhanced learning at the University of Pennsylvania’s Wharton School and previously vice dean of Wharton’s Undergraduate Division, Phillips on July 1 will assume the newly endowed CBE deanship created by the generosity of Kevin ’84 ’13P and Lisa Clayton ’13P.

“Georgette is truly a leader in the business school community,” said Gast. “This is a pivotal time for the college, and I am excited that she will bring her talents to Lehigh.”

Phillips was chosen from a top-caliber pool of international scholars and educators because of her intimate understanding of the issues and opportunities facing business education.

In six years as vice dean of Wharton’s Undergraduate Division,



Phillips guided the world’s premier undergraduate business program, serving over 2,400 students, and established herself a leader in the world of business education.

Phillips has received numerous teaching awards and is an internationally recognized scholar with research focused on the intersection of law, economics and public policy within the context of the built environment. She holds a Juris Doctor degree from Harvard Law School and a bachelor’s degree from Bryn Mawr College.

“There’s a strong business foundation at Lehigh on which to build,” she said. “And the College of Business and Economics is in a great position to be a national leader and advocate for important undergraduate and graduate programs that emphasize such timely areas as globalization, entrepreneurship and technology.”



AP PHOTO/MARK LENIHAN

Decrying ‘Generational Theft’

According to a panel of business experts, it’s time for the Millennial Generation to wake up to financial reality.

THE UNITED STATES’ economic outlook and rising national debt were at the forefront of a panel discussion held at Lehigh in October, as leading business minds encouraged students to get involved in a debate about their financial future—a future that, according to many experts, could push the nation to the brink.

In a packed Perella Auditorium at Rauch Business Center, Lehigh students, faculty and staff witnessed a spirited discussion of key economic and political issues facing the millennial generation. The event, “Generational Theft: How the Millennial Generation will Pay the Price for Washington’s Paralysis,” featured Ken Langone, co-founder of The Home Depot; Geoffrey Canada, president of the Harlem Children’s Zone; and Stanley Druckenmiller, investor and philanthropist.

Stephanie Ruhle ’97, a Bloomberg Television anchor, moderated the panel discussion and subsequent question-answer period. Brad Scheler ’74, chairman of Lehigh’s board of trustees, delivered opening remarks.

Druckenmiller opened the panel discussion by sharing a series of slides that compared trends in poverty among the elderly and children under 16 over the last half-century. Data indicates overwhelmingly, he said, that while entitlement programs like Social Security have resulted in a significant decrease in poverty among the elderly, poverty among children is at a dangerous level. Over the next 20 years, he said, America’s economic situation will become more and more unstable if no substantive reforms are adopted. “We should applaud the achievements of entitlements and what they have done for seniors,” said Druckenmiller. “I love entitlements, but I want them for you guys”—he said to the students in the audience—“when you’re 65, and not just me.”

Druckenmiller said that the current estimated national debt of \$16.7 trillion does not reflect the liabilities in Social Security, Medicare and other benefits owed by the federal and state governments to future Americans, which gives the public a skewed perspective on the economic climate. The obligations from entitlements, he said, amount to nearly \$200 trillion. “We need to get you people off your butts and into the streets,” said Langone. “I’m talking about the whole [millennial] generation. A 3,000-mile journey starts with the first step.”

The issue of entitlements will have a particularly adverse effect on lower-income Americans, Canada said. “I’m not worried about you all at Lehigh,” he said. “You all are in a pretty exclusive class in America. It’s not going to be easy for you, but you’ve all got a real shot at the American dream. But I am terrified for the kids at the Harlem Children’s Zone and places like that. ... There is no way that we can leave a debt on these kids that’s going to destroy their opportunity to actually make it.”

The Generational Theft talk was part of Lehigh’s 5x10 bLUeprint program, an events series with a specific focus on freshmen. It was co-sponsored by the Class of 2017, the College Republicans and the College Democrats. — Karl Brisseaux ’11

FIGURE 3

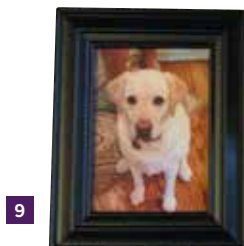


In early November, Bloomberg Businessweek ranked the part-time MBA program at Lehigh’s College of Business and Economics as the 12th best in the nation. That ranking marks an improvement over the previous magazine rankings in 2011, when the program ranked 15th nationally.

BELONGINGS The Comforts of Home

THINGS FROM HOME
 For first-year students at Lehigh, as for freshmen everywhere, moving away from home and into a dorm can be both exhilarating and nerve-wracking. And for those who feel more of the latter than the former, having a few reminders of home can go a long way to making the transition to college life easier. As Lehigh's freshmen moved into their new homes in late August, photographer Christa Neu asked some of them to talk about their most prized possessions from home—the items that they needed to bring along, for reasons either sentimental or silly. Here's what they said.

- 1 Jillian Dziegielewski**
 "Friends" DVDs. My sister and I have watched them since we were kids."
- 2 Bruke Mammor**
 "My camera. Photography is a pretty big hobby of mine."
- 3 Jessica Sanyour**
 "My lucky hat, from my hometown of Summit."
- 4 Brett Irwin**
 "My pocket Buddha."
- 5 Andy Freedman**
 "My Bose headphones."
- 6 Drew Davis**
 "A terrible towel. I'm from Pittsburgh. I'm a big Steelers fan."
- 7 Jessica Sanyour**
 "Two pairs of sneakers; I love them. I lounge around in them, I run in them. They're so helpful, so useful."
- 8 Jillian Dziegielewski**
 "My mug."
- 9 Megan Kienze.**
 "A picture of my dog. His name's Fenway ... My dog is my favorite thing on this earth."



Is There a Way Forward for Syria?

During a conference at Lehigh, experts examined the Syrian conflict—and how it might finally be solved.



AP PHOTO/KHALIL HAMRA



HENRI BARKEY, who organized the Syria conference at Lehigh this fall, has authored, co-authored and edited five books, and has had editorials published by the Washington Post, the Wall Street Journal, and the Los Angeles Times, among other outlets.

THOUGHT LEADERS and policy makers from around the country gathered at Lehigh for three days in early November to discuss the ongoing Syrian conflict—as well as the way forward for a nation fractured by civil war.

The Workshop on Global and Regional Implications of the Syrian Crisis began with a keynote address by Anne C. Richard, Assistant Secretary of State for Population, Refugees and Migration at the United States State Department. The speech was followed by vocal debate, and the at-times heated conversations continued at the Zoellner Arts Center the following day, as scholars, political analysts, ambassadors and others engaged in spirited conversations about a conflict that has left more than 120,000 dead since 2011.

The conference was organized by Henri Barkey, the Bernard L. and Bertha F. Cohen Professor of International Relations at Lehigh and a former member of the U.S. State Department Policy Planning Staff.

In two panel discussions on the second day, experts explored the possibility that the conflict

might be solved by negotiation. But there was much disagreement as to whether a peaceful solution could come to fruition.

In the first of these panels, “Views of the Region from Inside Syria,” moderator and CNN senior international correspondent Ivan Watson asked Marwan Kabalan, director of the Sham Center for Research and Studies in Syria, if he saw any hope to getting out of the “bloodbath” that is the Syrian civil war.

“I’m not very optimistic about the situation in Syria and about [the proposed Geneva convention on the conflict],” Kabalan said, “because it is not only up to the Syrians to decide to end this conflict.”

Mohammed Alaa Ghanem, senior political adviser for the Syrian American Council in Washington, D.C., was slightly more optimistic, saying that neither the ruling Assad regime nor the various opposition groups fighting it were capable of throwing the kind of knock-out punch that could ultimately win the war. “Therefore, both parties must come to a negotiation,” he said.

In the following panel, which explored whether

CIVIL UNREST

The Syrian conflict continues to wreak havoc on the Syrian people, leaving more than 100,000 dead and 6 million displaced.

the U.S. or other Western nations might be able to intercede and stop the conflict, Barkey suggested that regional countries take the lead in beginning the process of negotiating an end to the civil war.

Until that happened, he said, no progress would be possible.

"This is first and foremost a regional crisis and the regional powers need to own the process," said Barkey, who has written extensively on the Middle East. "We will help, but you need to own the process. At this moment, they [the regional powers] don't own the process."

DOUBTS ABOUT GENEVA

During that same panel, all five experts agreed that a solution coming out of a Geneva seemed unlikely. Some expressed concern at the lack of timely peace negotiations, and wondered what other solutions were possible.

"If not Geneva, then how do we construct a second, alternative international and legitimate framework for the conduct of diplomacy in the Syrian conflict?" asked Frederic Hof, a senior fellow with the Atlantic Council's Rafik Hariri Center in Washington, D.C.

Mona Yacoubian, a senior adviser for the Stimson Center in Washington, D.C., echoed Hof's concern, saying, "The situation on the ground is such that if we do nothing, I fear we end up in a place where there is no space for diplomacy."

Diplomacy and a peaceful end to the Syrian civil war have been main talking points among Western nations since Assad's forces, with the help of the Islamic militant group Hezbollah, launched offensive initiatives last spring to capture Syrian rebel areas.

"Opposition military elements long since vetted by the United States received little, in fact, in terms of arms, equipment, and training," he said. "The regime's supporters, however, are motivated. Iran needs the Assad regime to ensure it will be of service to Lebanon's Hezbollah, Tehran's first line of defense against Israel, and Russia's Putin wants Assad to survive as a symbol of a resurgent Russia. What is left, then, to discuss about Syrian political transition at Geneva?"

"The U.S. is not seen as a strong backer of the opposition when you compare the U.S. backing the opposition to Russia's support for Assad," said Ghanem. "The opposition does not trust that it will be able to achieve much in Geneva because it knows it will not have a strong ally at the table, and Assad will."

Even still, some audience members draped the Syrian Arab Republic flag—the flag of Assad's regime—over auditorium seats in Zoellner's Baker Hall and expressed their outrage over the U.S.'s support of the opposition. Three people were eventually escorted out of the hall after being asked by Barkey to quiet down.

The dismal prospect for negotiations does not make the issue any less pressing, however, and panelists emphasized that Syria is suffering a humanitarian crisis.

Radwan Ziadeh, who was a visiting scholar at Lehigh and a fellow at the Institute for Social Policy and Understanding in Washington, D.C., said his mother, brother and sister have all been displaced and have taken refuge in three different countries.

"I never thought that I would have mass graves in my hometown," said Ziadeh. "I never thought

that the people in the mass graves would be my own people."

Ghanem said some of his family is "not okay" and that other family members have been displaced. "Everyone in Syria has been impacted by the unspeakable violence that is engulfing them," he said.

Added Heydemann: "The price for all of this is not being paid by those who, at the end of the day, have warm, dry and safe places to sleep after a decent meal. The price—in life, limb, shelter, and sanity—is being paid by Syrian civilians."—*Carla Prieto '14*

To learn more about the conference, visit <http://syria.cas2.lehigh.edu/>

THE TOLL OF THE SYRIAN CRISIS

120,000+

have been killed.

2M

have left Syria.

4M

are displaced inside Syria.

850,000

Syrian refugees are now in Lebanon, more than 500,000 are in Turkey and in Jordan, more than 200,000 are in Iraq, and nearly 130,000 are in Egypt.

1.1M

of the refugees are children.

70,000

refugee families are living without fathers, and more than 3,700 refugee children are separated from both parents.

1/2

of refugee households in Jordan now rely on children to generate income.

77%

of refugee babies born in Lebanon have no birth certificates.

IF WE DO NOT ACT QUICKLY, A GENERATION
OF INNOCENTS WILL BECOME LASTING
CASUALTIES OF AN APPALLING WAR

—ANTÓNIO GUTERRES, UNITED NATIONS

When Assad noticed that the opposition was gaining strength and becoming a formidable threat to his regime, he enlisted the overt help of Hezbollah, said Ghanem.

The opposition, once backed strongly by the U.S., recently linked forces with extremist groups as well. That has put the U.S. in a difficult position and made the prospect of peace negotiations even more elusive.

Steven Heydemann, Vice President of the Center for Applied Research on Conflict at the U.S. Institute of Peace, said he believed that "the credible threat of an American military strike is now gone.

STUDY RETHINKING SURFACE TENSION

Anand Jagota, professor of chemical engineering and director of Lehigh's bioengineering program, has pondered for more than a decade the possibility that some solids, especially soft biomaterials and geometrically altered materials, might exhibit the mechanical force of surface tension. Recently, he proved that they do. Working with collaborators at the Leibniz Institute for New Materials (INM) in Saarbruecken, Germany and Cornell University, Jagota showed that surface tension does indeed manifest itself in certain compliant solids. The group reported their results in the journals *Physical Review E* and the *Proceedings of the National Academy of Sciences*. The discovery, says Jagota, should motivate scientists and engineers to rethink many of their assumptions. "It has generally been agreed that surface tension in solids was

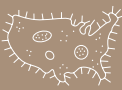


felt only at the atomic scale," he says. "We have shown that surface tension in these compliant solids is a real thing and that it manifests itself at relatively large scales." He adds: "As a basic mechanical force, surface tension in compliant solids will play a role in all mechanical phenomena involving compliant materials, especially biomaterials. How do things fracture, stick, slide, have friction, deform? What are the elastic forces that resist a cell when it spreads on a gel? How strongly do dust particles stick to the inside of a lung? We're going to have to rethink many of the questions involving compliant materials." The research was supported by the Division of Materials Science and Engineering in the Office of Basic Energy Sciences of the U.S. Department of Energy.

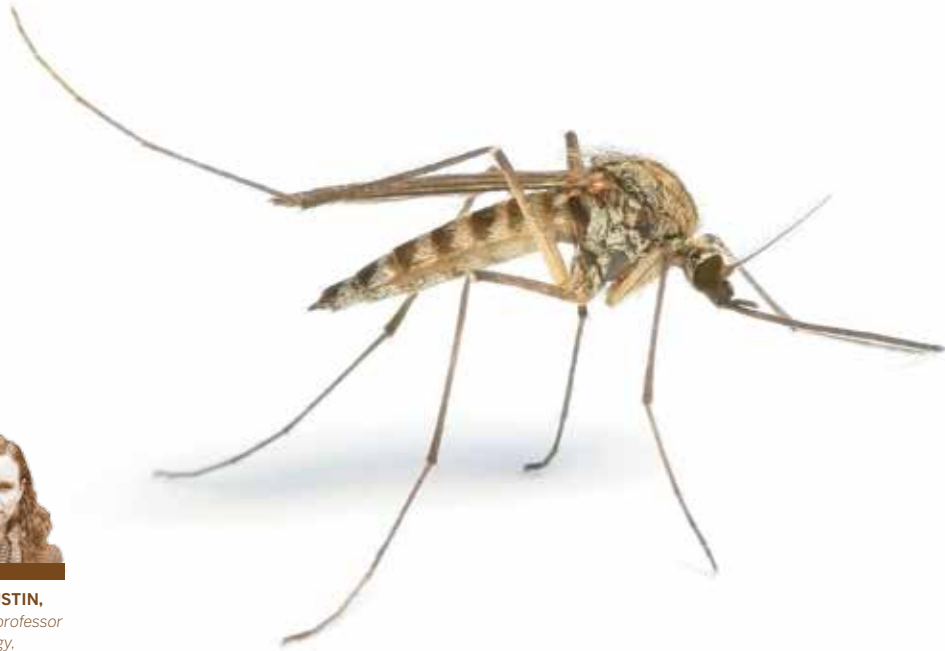


KELLY AUSTIN, assistant professor of sociology, studies how the global agriculture market often negatively impacts the developing world. Recently, she found that one crop in particular is problematic because of its global health impacts: coffee. More than 20 million farmers grow coffee worldwide, even though the crop has no nutritional value, and its production has been linked to everything from deforestation and malnutrition to hunger and poor schooling.

FIGURE 4



According to the NIH, approximately 1,500 cases of malaria are reported every year in the United States, even though malaria has been eliminated from this country since the early 1950s.



Malaria's Big Surge

Kelly Austin says the West's unyielding demand for food is allowing a global health crisis to unfold.

THE DEVELOPED WORLD has an insatiable appetite for food, and the developing world is doing everything in its power to meet the ever-growing demand.

But while the short-term economic benefits of doing so are apparent, the long-term negatives of this agricultural explosion aren't.

Kelly Austin is working to change that.

Austin, an assistant professor of sociology and anthropology, has developed a unique niche in academia: She studies how global economic forces—in particular, the economic inequities between the developed and developing worlds—affect health and environmental conditions in some of the world's most economically disadvantaged regions. After previously conducting research that linked coffee exports to a host of ecological, economic and social imbalances, Austin late last year published a new paper that shows that increasing rates of agricultural exports in Southeast Asia and sub-Saharan Africa are leading to spikes in the rate of malaria. It's a growing health problem that continues to fly under the global radar.

"I was really interested to learn about the continued high global burden of malaria," Austin says. "It's a forgotten disease that people don't really think about."

According to Austin, over 3 billion people are at risk of acquiring malaria, and there are over 220 million cases annually. Almost 1 million die of malaria each year, and most of these deaths are among children below the age of 5. By some measures, it is a bigger global health issue even than HIV/AIDS.

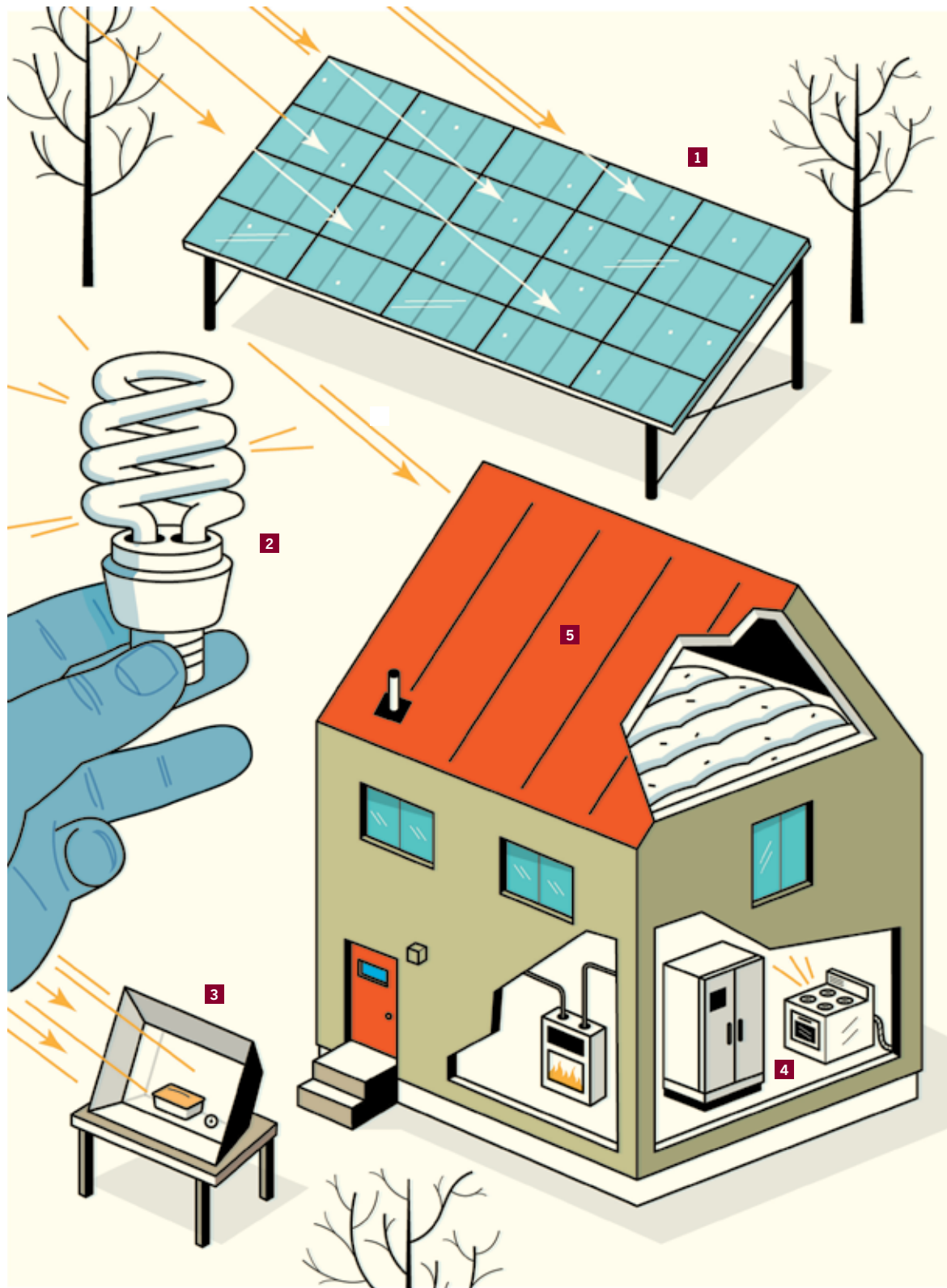
As Austin began investigating the topic, she found that while global malaria rates had declined for much of the 20th century, they began climbing again in some regions in recent decades. Rates were particularly high, she found, in the poorest parts of Southeast Asia, Sub-Saharan Africa, and in the Amazon forests of Brazil. What these regions had in common, Austin says, were fast-growing agricultural operations—and the deforestation that allowed those operations to take off.

Deforestation, she says, appears to be a prime driver of the rising malaria rates.

"It was really interesting to learn how there were so many mechanisms by which deforestation could impact malaria rates," she says. "When you fell trees to clear land, you're exposing to sunlight pools of water that had been previously shaded. And the stumps that you leave behind are prime mosquito habitat as well."

But there are even more problems, Austin notes. Deforestation inevitably leads to loss of biodiversity and can also cause widespread changes to the nutrient base. Bird populations are reduced, leading to more mosquitoes. It's a devastating chain of events, and the problem may only get worse. "These nations are naturally positioned in areas that are primed for agricultural production, and they should [seek economic gains]," she says. "But clearly, research like this indicates ... that food that is produced for export on this grand scale is more likely to entail environmental and health costs that could stifle development in the long term." —Tim Hyland

SCHEMATIC The Power of Solar Power



1 Matthias Falk installed a 24-panel photovoltaic solar array on his property in January 2011.

His records show that the panels, which cost \$20,000 after incentives, generated more than 7,000 kWh/year.

2 The investment paid off.

After the panels were installed, Falk's family had to purchase just 2,750 kWh of electricity from the grid.

3 A solar oven does its part, too.

Falk bought it from Central American Solar Energy Project. It heats up to 300 degrees, even in winter, using just the sun.

4 Other improvements to the house paid dividends.

A tankless water heater, an energy efficient heating system and efficient appliances cut energy use further. Falk notes that his gas bill has not increased, either.

5 The bottom line? It works.

Falk's detailed records show the improvements save about \$2,000 a year in energy costs. The family at times gives power back to the grid. And the investments will pay off in 10-20 years.

IN 2007, MATTHIAS FALK, an associate professor of biological sciences, and his wife, Jutta Marzillier, an adjunct professor of biological sciences, saw that even when their house stood vacant for a month while they were visiting family in Germany, it devoured a surprising amount of electricity.

So, over the course of five years, they convert-

ed their house into a model of energy efficiency, shrinking their energy consumption by combining a solar array with a host of other energy-saving solutions. The improvements have cut their energy use by a third, Falk says. "Everything humans do has an impact," he says. "One has to try one's best to minimize that impact."



Small but Mighty

With words and art, physicists illuminate the versatility of nanocarbons.

TWO LEHIGH PHYSICISTS have made significant contributions to an international magazine's special issue on nanocarbon materials.

Slava V. Rotkin and Tetyana Ignatova produced the cover illustration for the fall 2013 issue of the Electrochemical Society's journal *Interface* and wrote an article about the versatility and potential of nanocarbons. Rotkin, an associate professor of physics, and Ignatova, a Ph.D. candidate, generated 3-D graphics for the image. Monica Shell '14, a design major, designed and colored the image under the supervision of Johanna Brams, a senior instructional technologist.

The *Interface* issue is titled "New Frontiers in Nanocarbons." The article by Rotkin and Ignatova is titled "Discovering Properties of Nanocarbon Materials as a Pivotal for Device Applications."

Nanotechnology has been defined as the engineering of systems with dimensions smaller than 100 nanometers. Nanocarbons come in a variety of shapes and geometries, ranging from nanoparticles, nanowires and nanotubes to graphene—a lattice of interlocking hexagons—and hollow spherical molecules called fullerenes. Nanocarbons have a high degree of mechanical stability and stiffness, unusual interfacial thermal conductance and optical performance. Particularly striking is the unprecedented strength of nanomaterials no more than a layer of atoms thick.

Those properties have opened up applications in photovoltaic cells, liquid crystal devices, batteries and supercapacitors, electron field emitters and other electronic devices. Nanocarbons are also used as fillers in automobile tires, tennis rackets and other products.

Ignatova studies the interaction of photoluminescent RE ions with DNA-wrapped NT hybrids. By examining how the brightness of RE light emission diminishes, she has deduced the attraction or repulsion between DNA and RE at distances that cannot be resolved by microscopy.

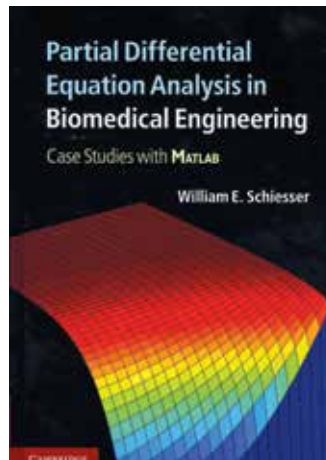
Rotkin and his students conduct research on a variety of nanocarbon projects. With Anand Jagota, professor of chemical engineering, Rotkin has investigated the wrapping of nanotubes (NT) with DNA strands in an effort to make it easier to manipulate the tubes in solution. Recently, Rotkin's group collaborated with the Los Alamos National Laboratory in a study of gel-like materials that mimic the environment inside the body or living cell.—*Kurt Pfitzer*

CELL SERVICE

Researchers see applications for nanocarbons in photovoltaic cells, liquid crystal devices, batteries and supercapacitors, electron field emitters and other electronic devices.

STUDY GETTING A LIFT FROM CARS

More than half of high school students diagnosed with severe behavioral disorders never graduate. The Center for Adolescent Research in Schools (CARS) at Lehigh, a national research center, is concluding a five-year, \$10 million study of these students that was funded by the U.S. Department of Education. CARS program coordinator Lee Kern and her peers have enrolled nearly 700 students with emotional, developmental and learning disabilities from five states in the largest intervention program of its kind in the nation. The program designs individual intervention packages for each student. Kern, the Iacocca Professor of Special Education in the College of Education, said many of the students "have very complex psychiatric, family, academic and other needs requiring specialized services that may not be readily available. We're very pleased with the outcomes and positive effects that our efforts have had. We're optimistic for the long term."



BOOK TELLING THE WHOLE STORY

If a picture is worth a thousand words, a mathematical equation can be worth a thousand pictures. This Information Age twist on a popular saying resonates with William Schiesser and others who use mathematical models to gain a clearer picture of the physical world, including the interior of the human body. Models based on differential equations, he says, are much more adept than humans at interpreting the huge streams of data generated by modern medical imaging tools. Schiesser, the R.L. McCann Professor Emeritus of Engineering and Mathematics in the department of chemical engineering, published his 11th book, *Partial Differential Equation Analysis in Biomedical Engineering: Case Studies with Matlab* (Cambridge University Press), one year ago. The book solves differential equations that model the diffusion of proteins into the retina (critically important to the onset of macular degeneration), the dynamics of kidney dialysis, the healing of wounds and other phenomena. In "retirement," Schiesser has joined research teams at the Perelman School of Medicine at the University of Pennsylvania and at the University of Michigan's Medical School. His next two books will be published in March by John Wiley & Sons Inc.



SLAVA V. ROTKIN,

associate professor of physics at Lehigh, previously served as an assistant professor at the Beckman Institute. He received his Ph.D. from the Ioffe Institute in St. Petersburg, Russia, and serves as a referee for more than 20 scientific journals.

A Journey into the ‘Proof of Islam’

An ancient text receives its first English translation.



ALADDIN YAQUB,
an associate
professor of
philosophy, studies
logic, truth theory,
the philosophy of
mathematics,
metaphysics, and
Islamic philosophy.

ALADDIN YAQUB has spent four decades studying Muhammad al-Ghazali (c. 1058-1111), the pivotal Muslim theologian, jurist and mystic. The associate professor of philosophy is fascinated by al-Ghazali’s logical concept of God as omnipotent and not required to be benevolent, not even to his most obedient servants.

Yaqub recently completed the first complete English translation of al-Ghazali’s *Moderation in Belief*, an almost scientific defense of everything from God’s attributes to the Prophet Muhammad’s miracles. Published by the University of Chicago Press, the edition contains a small book of footnotes, including reconstructions and dissections of al-Ghazali’s labyrinthine arguments, which are designed to explain why *Moderation* is a bible of Sunni orthodox theology, and why al-Ghazali has been called “Proof of Islam” and “the common

pool of refreshing waters for all.”

Yaqub discovered this pool in his late teens in his native Baghdad, where al-Ghazali wrote *Moderation in Belief*. The son of a bank manager who taught English, Yaqub first read *The Deliverer from Error*, in which al-Ghazali describes a six-month spiritual crisis when he couldn’t speak because Allah had dried up his tongue. Yaqub identified with al-Ghazali when he suffered his first major depression, which lasted five months. In al-Ghazali’s *The Revival of the Religious Sciences*, a poetic explanation of Islamic rituals and doctrines, Yaqub found stability. He was captivated by al-Ghazali’s view of God creating a universe so excellent that it would not have changed even if he had endowed humans with all his attributes.

When he was a mathematics major at the University of Baghdad, Yaqub was told about *Moderation in Belief* by a student who was skeptical of Sufi mystics like al-Ghazali. The skeptic hoped Yaqub would think less of the author when he read al-Ghazali’s claims that God does not care about people or animals. Yaqub was disappointed by al-Ghazali’s relatively harsh view, but he changed his position

when he reread *Moderation* in graduate school at the University of Wisconsin. This time he realized that it was perfectly logical for al-Ghazali’s God to be sometimes less than benevolent.

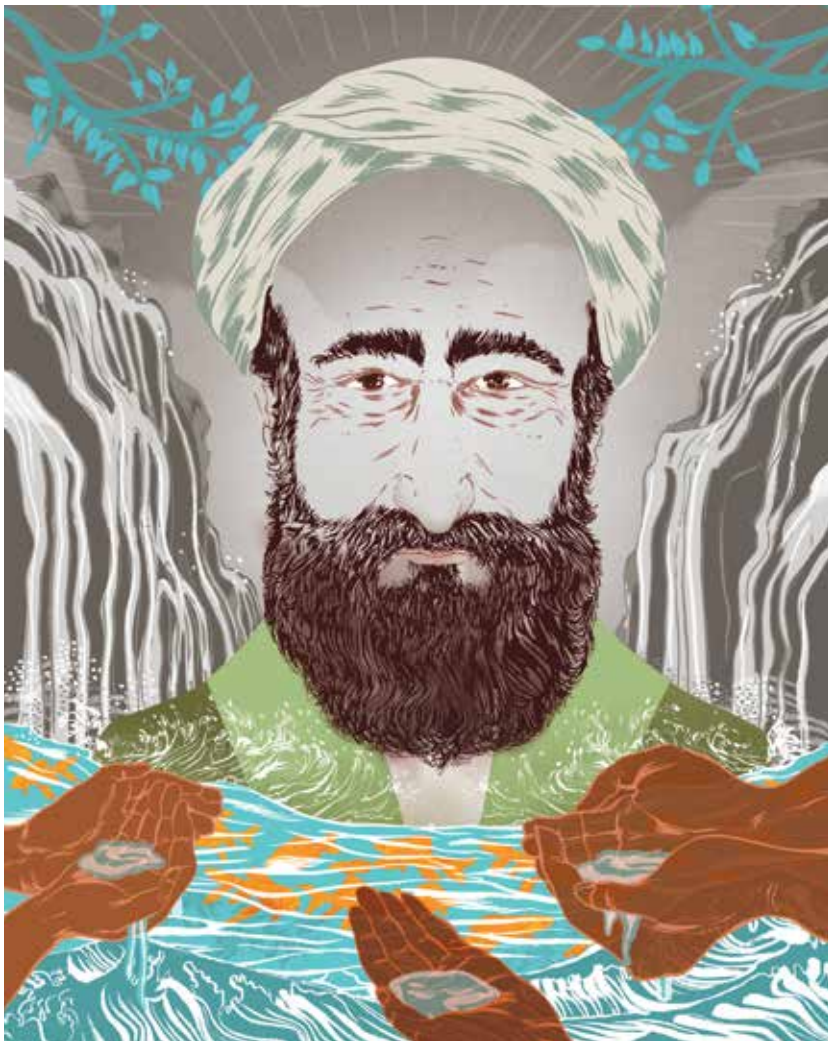
This brutal honesty, says Yaqub, kept *Moderation* from a complete English translation for over 900 years. It was considered “too unpleasant.”

Moderation contains all of Yaqub’s academic specialties: logic, truth theory, metaphysics, and the philosophy of religion, mind and body. Yaqub became a forensic footnote: His annotations include debates about schools of theology and styles of argument, long exercises in logic, explanations why a translation is literal or liberal.

Yaqub received philosophical help on the project from Roslyn Weiss, professor of philosophy and an authority on Jewish philosophy. He received linguistic help from his wife, Connie, a teacher of English as a second language, who helped him balance readability with accuracy, content with intent. Connie also helped Aladdin balance mood disorders that cause him to write in a white heat and made him take a 2013 sick leave from teaching. “Without her I wouldn’t have survived,” says Yaqub. He acknowledges his mood disorders, in the hope that mental illness can be treated as normally as physical illness.

Yaqub is now translating *The Book of Monotheism* by Abu Mansur al-Maturidi, another pivotal Islamic treatise by a medieval Persian theologian. He insists the edition, scheduled for a 2015 release by Brigham Young University Press, is tougher than his edition of *Moderation*. Aimed at scholars, it will have side-by-side texts in Arabic and English. Why is Yaqub climbing another mountain during a major depression? “I’m a fool,” he says with a smile.

Connie Yaqub is more generous. “Aladdin really has a gift for making things understandable. He has an extremely inquisitive mind. He likes to share his knowledge, which makes him a fantastic teacher and a fantastic spouse.” —Geoff Gehman ’89G



For Sametz, A New and Difficult Commission

The choral conductor's next composition will honor the victims of the Sandy Hook school shooting of 2012.

STEVEN SAMETZ, who has earned international acclaim as a composer and a conductor, has received the 10th Raymond and Beverly Sackler Music Composition Prize, which is presented by the University of Connecticut.

He will use the \$25,000 award to compose a new work to be premiered in Connecticut in 2015 and reprised at Lehigh.

The proposed project, tentatively titled "A Child's Requiem," is a response to the Sandy Hook Elementary School killings of December 2012, says Sametz, who is a native of Westport, Conn. The work will be scored for children's choir, mixed choir and orchestra.

"I am currently working with schools to develop a libretto drawn from children's responses to tragedy and loss," Sametz says. "There has been a growing movement of responses from area schools and beyond, and it may be that we start to get national responses from teachers, parents and their children. The more responses we get, the richer the potential of the project becomes."

Sametz, who has earned increasing renown in recent years as both composer and conductor, is the Ronald J. Ulrich Professor of Music and director of Lehigh University Choral Arts. Choral Arts consists of Choral Union, Dolce, the Glee Club and the select University Choir, which has toured on several continents. Sametz also serves as artistic director for the elite a cappella ensemble, The Princeton Singers, and is the founding director of The Lehigh University Choral Composer Forum, a summer course of study designed to mentor emerging choral composers.

In addition to the Connecticut premiere of "A Child's Requiem," Sametz says he also plans to reprise the new work at Lehigh, and to develop an exhibition of artwork from young children expressive of their thoughts on loss, which will be displayed at the time of the performances.

The competition, organized by the University of Connecticut's School of Fine Arts, is an international award that supports and promotes composers and the performance of their new musical works. Every second year, entrants are asked to compose a piece for a specific area of the musical arts, chosen by the faculty of the UConn music department, such as jazz ensemble, choir, opera, wind ensemble or chamber ensemble.

This year's prize is for chorus and orchestra, and entries were received from seven nations and 17 states.



AP PHOTO/CRAIG RUTTLE



STEVEN SAMETZ

is the Ronald J. Ulrich Professor of Music, director of Lehigh Choral Arts and artistic director of the professional a cappella ensemble, The Princeton Singers.

MUSIC BUILDING YOUR OWN



The harpsichord is essential to Baroque music, but not every concert hall houses the keyboard instrument. Eugene Albuлесcu, concert pianist and music director of the Lehigh University Philharmonic, has teamed with Willard Martin, a renowned harpsichord maker in South Bethlehem, to build a harpsichord he can take on tour. The blueprint of the instrument, which Albuлесcu unveiled in a performance of Bach's *Brandenburg Concerto No. 6*, is based on a 17th-century illustration discovered by Martin. Albuлесcu's wife, flautist Linda Ganus, painted a depiction of Orpheus taming the animals on the harpsichord's lid. "The amazing thing about this instrument," says Albuлесcu, "is that it weighs just 50 pounds. With a proper cover, you can check it in as luggage when you fly."

LITERATURE WHY THE MELODRAMA?

Cultural observers have long held that melodrama champions the status quo, but Matthew Bush says the genre famous for its emotional appeal is also employed to celebrate radical narratives and revolutionary politics. In his forthcoming book, *Pragmatic Passions: Melodrama and Latin American Social Narrative*, Bush, assistant professor of Spanish and director of Latin American Studies, examines works by 20th-century Latin American writers who use melodrama to express the political and social issues of their time. These works often address societal problems, such as regional differences in Venezuela or social marginality in urban Argentina. "Melodrama," says Bush, "attempts to represent a specific reality and a path to do something about it."

NEVER FORGET

The nation marked the one-year anniversary of the Newtown tragedy on Dec. 14.

EXHIBITION Is it Art?

IT'S A SIMPLE QUESTION that really isn't simple at all: What counts as art? That's the question that a group of students from Lehigh's Advanced Museum Studies program are asking with an exhibit, currently on display in Zoellner's Lower Gallery, titled "Is it Art?"

The exhibit, which continues through May, was inspired by a controversial *New York Times* feature that first ran in 1997. The story began, quite plainly, "The debate continues about where art is today and what so many people still want it to be." The debate has yet to be settled. Nor will it likely ever be.

And that is precisely the point of the Lehigh exhibit, says Ricardo Viera, professor of art and curator of the Lehigh University Art Galleries. The student curators of the exhibit wanted visitors to be challenged to ask and answer that very question, as they are confronted by images ranging from advertisements to cutting-edge sculpture.

"Is it art? And who gets to say so?" Viera asks. "We continue to have that conversation, and we're having it here."



FILM TOP HONORS FOR 'FIRST FOUR'

The First Four, a student-produced documentary highlighting four of the first five women appointed to Lehigh's English faculty, won top honors at the Greater Lehigh Valley Film Festival at the ArtsQuest Center in November.

The film was recognized in the category of short film (15-50 minutes), and was produced by Liana Prodorutti '16, an English major; Laura Casale '15, a journalism and English dual major; Meghan Barwick '15, a journalism major; and Nadia Sasso, an American studies graduate student. They were advised by Michael Kramp, associate professor of English, and Julia Maserjian, a digital historian in Lehigh's Library and Technology Services group.

The professors highlighted in the film—Rosemarie Arbur, Elizabeth Fifer, Rosemary Mundhenk and Barbara Traister—joined the university faculty during a time of significant change at Lehigh. *The First Four* consists of individual and group interviews with these professors, as well as archival footage and images from yearbooks, newspapers and other periodicals.

"Learning about these women and telling their story inspired me to become more involved in feminism and the Women's Center in particular," said Barwick. "As a group of four women ourselves, it was a really valuable experience to work on this project."

—Karl Brisseaux '11



Freestyle Furniture Design

The joy of furniture making, says Amy Forsyth, can be found only when creating something entirely new.



FURNITURE MAKER AMY FORSYTH'S WORK combines furniture, sculpture, architecture and performance. She uses whatever means and materials will realize the initial idea. Her creations bridge the unconventional with the familiar, taking everyday objects and turning them into something unexpected.

Her latest project is a collaborative effort with an Indiana-based artist to design and build furniture for a 2014 exhibition at Philadelphia's The Center for Art in Wood.

As part of the center's Bartram's Boxes Remix (BBR), Forsyth, associate professor of architecture, is working with Katie Hudnall, an assistant professor and furniture maker at the Herron School of Art and Design in Indianapolis, to build two pieces of furniture that will engage each other. The project's title is a reference to the boxes containing seeds, plants and curiosities that Bartram began sending to his colleagues in England in 1735.

Reflecting Bartram's mail-order business, Forsyth and Hudnall began planning their furniture in 2012. Each designer sent the other drawings and small sculptural objects to inspire larger pieces. Over the course of this past spring, they met and drew what they thought these ideas might become.

For the exhibit, Forsyth built a cabinet that she describes as a "self-portrait." The cabinet doors incorporate truss-like wooden hinges inspired by Hudnall, with doors that draw on Native American transformation masks. Inside is a table built from one of Hudnall's drawings. Since this project is for an exhibition rather than everyday use, expressing an idea is more important than function, Forsyth says.

"I'm not interested in furniture that's been done already, like arts and crafts. I think it's wonderful stuff, but I approach my work as an artistic practice, so I'm always looking for something new.

"As an architect, you plan everything out and you hope someone will build it just the way you draw it. As a furniture maker, I like the fact that I am doing it myself, and I learn something about what I'm making as I go." —Rob Nichols

A DESIGNER AT HEART Before taking up furniture design, Amy Forsyth trained as an architect at Penn State and Princeton. She is also an accomplished musician.

A Message from the Office of Gift Planning

LEHIGH IN OUR LIVES

JUDIE AND EMERY
ROSENBLUTH '63

BACHELOR OF SCIENCE, BUSINESS ADMINISTRATION

For more information on how you can make an impact through a planned gift to Lehigh, please contact Lorraine Wiedorn at (610) 758-4874.

Growing up in the Lehigh Valley, Emery Rosenbluth received a scholarship to attend Lehigh and always knew he and his wife, Judie, would provide the same opportunity for others. They felt that it was important for other students to receive an excellent education at his alma mater.

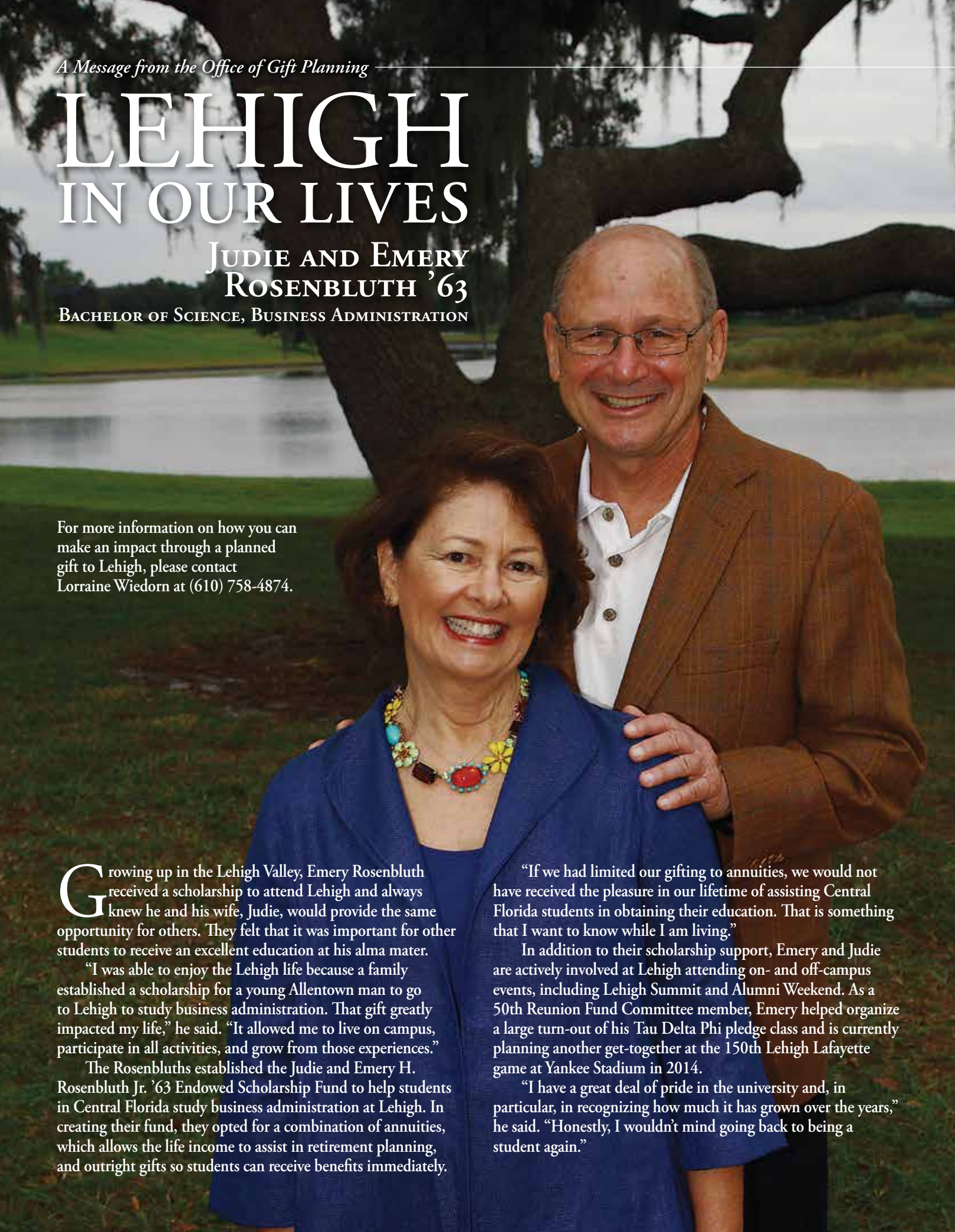
"I was able to enjoy the Lehigh life because a family established a scholarship for a young Allentown man to go to Lehigh to study business administration. That gift greatly impacted my life," he said. "It allowed me to live on campus, participate in all activities, and grow from those experiences."

The Rosenbluths established the Judie and Emery H. Rosenbluth Jr. '63 Endowed Scholarship Fund to help students in Central Florida study business administration at Lehigh. In creating their fund, they opted for a combination of annuities, which allows the life income to assist in retirement planning, and outright gifts so students can receive benefits immediately.

"If we had limited our gifting to annuities, we would not have received the pleasure in our lifetime of assisting Central Florida students in obtaining their education. That is something that I want to know while I am living."

In addition to their scholarship support, Emery and Judie are actively involved at Lehigh attending on- and off-campus events, including Lehigh Summit and Alumni Weekend. As a 50th Reunion Fund Committee member, Emery helped organize a large turn-out of his Tau Delta Phi pledge class and is currently planning another get-together at the 150th Lehigh Lafayette game at Yankee Stadium in 2014.

"I have a great deal of pride in the university and, in particular, in recognizing how much it has grown over the years," he said. "Honestly, I wouldn't mind going back to being a student again."



SCORE WAIT 'TIL NEXT YEAR

It was a defeat that nobody in South Bethlehem saw coming. With the Patriot League championship on the line on Nov. 23, Lafayette upset Lehigh in the 149th playing of the Rivalry, 50-28, to finish the season 5-6 overall—but more importantly, 4-1 in the league.

The victory gave Lafayette its first win in the series since 2007 and their first outright league crown since 1994.

“It wasn’t our best day of football,” Lehigh head coach Andy Coen said afterward.

Lafayette outgained Lehigh 498 to 307, and was particularly sharp through the air, as freshman quarterback Drew Reed threw for 378 yards and three touchdowns. For Lehigh, senior tailback Keith Sherman had 18 carries for 140 yards on the day, while fellow senior Lee Kurfis caught seven passes.

Afterward, Coen and his Mountain Hawks were left to rue sluggish play both at kickoff and at the start of the second half. But the coach gave credit to Lafayette for a well-deserved win.

“It wasn’t for lack of effort or emotion or pride in the institution,” Coen said. “It just wasn’t our day and they played well. That’s why they won the game.”

The Countdown to 150

The oldest rivalry series in college football is heading to New York City in 2014.

NEXT FALL, the most-played rivalry in college football is hitting the road—for just the second time in history.

Tickets are selling fast for the historic 150th playing of “The Rivalry,” as Lehigh will battle ancient rivals Lafayette at Yankee Stadium in New York on Nov. 22, 2014. Lehigh sold out its initial allotment of tickets within just weeks of their release, and the New York Yankees organization provided additional tickets to both schools in November, which also sold quickly.

The week leading up to the game will feature a host of events, as Lehigh celebrates its participation in one of the greatest traditions in college athletics. Events already scheduled include a performance by the University Choir at Carnegie Hall and a joint Lehigh-Lafayette Wall Street bell-ringing at the New York Stock Exchange. More events will be added in the months leading up to the game.

The game is expected to be a complete sellout by kickoff next November. As of press time, more than 40,000 tickets had already been sold or held for students of both institutions, and demand remained strong.

“There are always expectations with that game, really right from the beginning of the season,” said Lehigh coach Andy Coen. “It’s really an event, not necessarily just a game. It’ll be certainly very special playing the game in Yankee Stadium and everything that will go on around that game. It will be exciting for the students, the fans and the players on both teams. It’s going to be an exciting year, without a doubt.”

The Lehigh-Lafayette game is being played at a neutral site for just the second time, and the first in more than 120 years. In 1891, on the only other occasion that the game was not played in either Easton or Bethlehem, Lehigh emerged victorious as the teams clashed (for the third time that season) in Wilkes-Barre.

For the 150th, Lafayette will be the designated home team. Tickets purchased through Lehigh will be on the third base/left field side of the stadium. Fans should visit www.lehighsports.com/rivalry150 for additional information about tickets, transportation, tailgating and more.

FIGURE 5



In a rivalry series as long and storied as Lehigh-Lafayette, there are countless plays that stand out as highlights. For Lehigh, one of those plays came in 1995, when wideout Brian Klingerman made a stunning one-handed catch on a deep route in double overtime to beat Lafayette 36-30. The win came in the first year that the Patriot League used overtime, and secured Lehigh the Patriot League title.

2014 TICKETS

\$89

Sections 127B-130, 220B-222, 132-134

\$63

Sections: 125-127A, 225-234

\$45

Sections: 118-124, 320C-332B, 135-136, 235-239

ON-SALE DATES

April 2

Lehigh student section tickets on sale

LUXURY SUITES

To inquire about securing a Luxury Suite, email rivalry150@lehigh.edu



MARK BONIFACIO/NY DAILY NEWS ARCHIVE VIA GETTY IMAGES

STATS Adeolu "Lou" Adesida '15



SPORT Track and Field

EVENT High Jump

PERSONAL BEST High Jump: 2.18m (7' 1.75" - school record); Triple Jump: 13.00m (42' 8")

HOMETOWN Philadelphia

CLASS Junior

MAJOR Accounting

GPA 3.52

CLUBS AND ORGANIZATIONS National Association of Black Accountants (NABA) and Student-Athlete Mentors (SAMs)

HOW I GOT STARTED I was actually playing basketball in high school, and playing in the summer on the AAU circuit. I wanted to stay in shape because I was only practicing once or twice a week. I figured the best way to do it was with track. I did running

events in high school, but I eventually started high jumping.

DAILY ROUTINE DURING THE SEASON

I wake up, do work until I have class and then go to class. After that I go straight to practice, eat dinner right after, shower, do some more work, hopefully be done by 1 or 1:30 [in the morning], watch some T.V. and then sleep.

BIGGEST ACHIEVEMENT

I was academic all-American [last spring]. To become an academic all-American, you have to be top 48 on the East Coast in your event and have a cumulative GPA of 3.25. That combines what you've done on the field or on the track and what you've done in school. Everyone on that list is obviously one of the top performers on their team and in the classroom.

FAVORITE ATHLETE IN ANOTHER SPORT Allen Iverson

FAVORITE PRE-MEET MEAL Pasta

GOALS THIS SEASON My goal would

be to [set a personal record] again, and in doing so I would hope to qualify for indoor nationals, and definitely for the outdoor season I'd want to go to outdoor nationals, the final round. I also want to get into higher divisions in things like Penn Relays, being able to jump in the championship sections, the elite sections. [The championship and elite sections] jump on Saturday at Penn Relays is when you have guys like Usain Bolt running, and so it's a hyped environment, and that's the kind of environment I want to be at.

BEFORE MY EVENTS, I LISTEN TO

Chill, relaxed Hip-Hop. I like to listen to Big L, Dr. Dre, J. Cole, A\$AP Rocky, Kendrick Lamar, and Michael Jackson sometimes too.

I AM MOTIVATED BY The people around me motivate me because I'm really competitive. I'm also pretty self-motivated, but if I see people doing well that kind of just motivates me to do better, especially in school. If you're getting grades back on a test and say you

didn't do as well, but everyone else did, you want to study more so that you fall on the higher end of the class average.

MENTORS

[My mentors] obviously include my parents, and my three older siblings. My siblings all went to college; they've all graduated, so I saw what they did preparing for everything. And now that I have a visual example of what they do, I see things I should and shouldn't do. Being the youngest definitely helps.

LEADERSHIP STYLE

My style is leading by example. As far as athletics go, people will always look up to you if you're excelling in what you're doing. If they see that you can combine doing well in school and doing well in your sport, people recognize that and say 'Wow, he or she is well-rounded.' So that inspires people to investigate and see how that athlete prepares outside of their sport, outside of school and see what makes them excel.

-Karl Brisseaux '11

STEVE BOYLE

Another Measure of Success

Lehigh prepares student-athletes to excel on the field, in the classroom—and in the real world, too.



COURTESY OF LEHIGH ATHLETICS

AN ONGOING EFFORT Julie Sterrett '07, assistant director for athletics leadership development, says Lehigh student-athletes are expected to practice leadership "in everything they do."

THE 2012-2013 academic and athletic year was, in part, highlighted by the championship-level success of several varsity teams. The Mountain Hawks secured league crowns in men's tennis, men's lacrosse, women's and men's golf, and men's cross country. Meanwhile, 47 percent of student-athletes were recognized on the Patriot League's Academic Honor Roll (for GPAs of at least 3.2).

Lehigh's athletes prepare for academics and competition with vigor, but a third component—leadership development—plays an important role in molding students for achievement in everything they set out to accomplish, says Julie Sterrett '07, assistant director for athletics leadership development.

"I coordinate and facilitate our leadership education efforts for student-athletes, teams, and coaches" says Sterrett. "Our programming strengthens the connection between student affairs and athletics by offering the practical application of student development and leadership theories within the context of sport."

A two-time All-Patriot League selection in softball and a member of the dean's list throughout her career at Lehigh, Sterrett has been working with undergraduate athletes since 2008. The Lehigh Athletics Leadership Academy, housed in the office of student leadership development, offers comprehensive, developmentally incremental and interactive educational programs to catalyze leadership awareness and efficacy in order to maximize

personal effectiveness and overall team success.

At Lehigh, that training begins in the first year. Through the P.R.I.D.E. program, first year student-athletes are made aware of the many on-campus resources available to them, so that they are better able to balance their social, academic and athletic commitments. Student-Athlete Mentors (S.A.M.), train upperclassmen leaders and peer educators, and help ease the transition to college for their new teammates.

Lehigh's Emerging Leaders program prepares student-athletes to lead first by example in order to develop credibility among teammates. It involves empowering athletes to hold themselves and others accountable academically, athletically and socially.

"In the fall, the Emerging Leaders program is open to any sophomore or junior student-athlete," said Sterrett. "In the spring semester, the program helps coach-identified individuals and future team captains de-

velop the vocal leadership skills needed to effectively support, refocus and confront their teammates."

The most selective of Lehigh's offerings, the Leadership Legacies program, supports veteran leaders and current team captains as they apply their knowledge and skills to actively lead their teams in season.

Finally, a senior capstone experience, called Launch, connects graduating student-athletes to athletics alumni and encourages meaningful reflection and identification of transferable leadership skills.

Beyond educational programs, experiential learning and leadership involvement opportunities are varied. The Student-Athlete Council is a group of approximately 25 students who work collectively to enhance the college experience for all student-athletes through community service (via the C.O.A.C.H. program), campus collaborations, and alumni partnerships. The Student-Athletes Leading Social Change team engages in meaningful dialogue and service projects locally, nationally and internationally.

All in all, Lehigh's slate of opportunities is robust but flexible enough to accommodate the often jam-packed schedules of student-athletes. The Patriot League has recognized Lehigh student-athletes for their commitment to leadership through the Outstanding Leadership and Character award, established in 2012. In fact, all of the winners of the award are Mountain Hawks: Chris Lum '12 (football) and Jana Basubas '12 (soccer) won the inaugural men's and women's award, while Michael Colvin '13 (football) and Rebecca Guman '13 (basketball) won in 2013.

"It's a win-win situation," says Sterrett. "By challenging our athletes to clarify expectations and act on core values, we're strengthening the culture of leadership at Lehigh. In turn, our student-athletes are prepared to continue to lead effectively in their personal and professional lives beyond college sports." —Karl Brisseaux

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For more information about becoming a member of the Asa Packer Society and on making your impact at Lehigh, please call (610) 758-5071 or visit www.lehigh.edu/asapackersociety.





UP ON THE MOUNTAIN

With the official launch of the Mountaintop initiative, Lehigh aims to rethink teaching and learning in the 21st century.

BY TIM HYLAND

PHOTOS BY THEO ANDERSON

WHAT DOES A 21ST CENTURY environment for learning, discovery and engagement look like?

How should the development of young people, the process of discovery, and the engagement with partners and constituents be interrelated in the context of higher education?

How should people in different fields of study, and at different levels of formal attainment, relate to one another?

And how can universities foster these kinds of interdisciplinary relationships in a way that not only conveys new knowledge to participants, but ultimately delivers important solutions for an ever more complicated world?

On a chilly, rainy Friday afternoon this fall, Lehigh students, faculty and staff gathered on campus to ask—and, through an open, hour-long conversation, attempt to answer—those very questions. The impetus for gathering, the second of two held in the course of a week in late November, was the official launch of the Mountaintop project, a potentially groundbreaking initiative that could allow Lehigh to take the lead in rethinking the boundaries of higher education.

With a \$20 million gift from Scott Belair '69, Lehigh is working to transform two soaring former Bethlehem Steel research bays on South Mountain into vibrant and unique learning environments—places where students will be given the freedom

to pursue answers to open-ended questions and, in the process, will be challenged to increase their capacities for independent discovery, for taking intellectual risks and learning from failures, for collaboration, for recognizing important problems and opportunities, and for effecting constructive and sustainable change.

The core idea of Mountaintop, in short, is to offer students the freedom to engage in the most open kind of learning environment possible—one that will allow them to define the boundaries of their educational experiences. And to hear students who have already experienced Mountaintop tell it, the freedom they enjoyed up on South Mountain stands out as perhaps the most powerful experience they've had at Lehigh.

These students came to Mountaintop in different ways, and the pilot projects they took part in ran the academic gamut—from automotive engineering and film production to public health and interior design. Some students ended up precisely where they thought they would; others took detours into wildly unexpected new paths. But almost all said they were grateful for the opportunity—and excited for what their peers might come up with on the Mountain in the years to come.

Here, we share a few of these students' stories—stories that hint at the vast possibilities of these spaces, and this project and this university.

LOOKING TO THE FUTURE Penn Scott '13 (left) and James Suh '14 used their Mountaintop experience to conceptualize the automobile of tomorrow.



JACOB PUZYCKI '14

Technology for Developing Communities Project

My group members and I had quite an interesting experience this summer. We were given a very undefined goal: utilize new technologies and new innovations to help eliminate poverty in small Kenyan communities.

To begin we wanted to see how feasible it was for inexperienced individuals to use new technologies, so we built our own 3D printer, a technology that was new to me and had blown my mind just months before. Through that process, we discovered that we were capable of more than we had thought we were. None of us had real experience in engineering, yet we were able to build this complicated device, as long as we had proper guidance, support and motivation.

That mental framework became the foundation of our project: that people are capable of much more than they may think they are. We decided that the best thing we could do for a group of people struggling with poverty was to empower them to help themselves.

So, after undergoing four weeks of brainstorming and idea analysis, we decided that we would develop a curriculum that Kenyan community leaders could use to help struggling entrepreneurs in their communities. The curriculum focuses on developing business skills and discovering creative new ways of thinking, so that people might solve problems in their communities—benefiting their own lives and giving sustainable growth to their local economies.

I can say for sure that this project has changed the way I think about 'work.' It was the first time I've set the criteria for what 'success' looks like and it built an important bridge between my college experience and 'the real world.' I'm really excited for where this project will go, and hope to continue this work through the rest of the school year or even beyond. Who knows where it will take me?

LAURA CASALE '15

'First Four' Film Project

To me, the Mountaintop projects are a real testament to—and example of—the opportunities available here for Lehigh students. I became involved in the projects solely due to a professor I had first semester sophomore year, Michael Kramp. I had Professor Kramp for Introduction to Film, and I expressed to him interest in film as a possible career. As a result of that he asked a fellow classmate, Meghan Barwick, and me to be part of a film called *The First Four*.

It really was the best experience I've had at Lehigh thus far, because not only did it teach me valuable film skills, but it also allowed me to meet or talk to four amazing women (four of the first five women on Lehigh's English faculty) who have basically paved the way for me and other women at Lehigh. The stories they told me and the lessons I learned will stay with me for the rest of my life. This project made me more aware of gender inequalities, how far we have come, how far we still have to go, and why I have to be a part in making sure change continues to happen.

There were times during the project that I doubted myself and my decisions, but our advisers—Michael Kramp and Julia Maserjian—were amazing at making us trust our own instincts. It was stressed to us over and over that this was OUR project and we could do what we wanted with it. I think that these types of projects are essential to being a well-rounded student because they give us the freedom and responsibility to create something. We weren't given much guidance on what to do, tough decisions had to be made, and we all felt confident in making them.

I'm extremely proud of the work Nadia, Liana, Meghan and I did, and of being able to have been a part of a great initiative at Lehigh.

MEGHAN BARWICK '15

'First Four' Film Project

Being able to take part in the Mountaintop projects this summer has been amazing.

I was so excited to be asked by my professor and advisor for the project, Michael Kramp, because he knew how excited I was about film. Since we don't have a film major (or minor for that matter), I knew I'd have to bushwhack in a sense to get to where I wanted to be. This project was exactly what I needed.

I got to plan and execute a film with three other girls. We were independent and relied on each other to keep the project going. For the project, I got to travel to California to meet one of the four amazing Lehigh professors featured in our film. Without the Mountaintop initiative backing the project, I would have never had the opportunity to practice what I want to be a part of my career after graduating.

And since finishing, it's been so exciting. We've premiered it at Lehigh to a room full of students and faculty; and we've show it at a film festival, and won an award for best short (15 to 50 minutes). I learned a great deal through making the film about the subject matter and the skills it takes to create a work like this.

LISA GLOVER, GRADUATE STUDENT

Creativity Space Project

For the Creativity Space project, we were charged with designing a place for Integrated Product Development and Technical Entrepreneurship students to work on their endeavors. We expanded on this idea, developing a space where all members of the university could be creative and innovative.

As a former architecture major and current Technical Entrepreneurship master's student, I am passionate about creating and designing. While I have access to the resources that make my dreams possible, most Lehigh students do not (or may not be aware of them). These students are just as excited and inventive as I am but access to basic resources such as a woodshop, laser cutter and 3-D printer is, in most cases, difficult to attain.



During the project, we learned that we weren't the only ones who wanted a more open-ended space where any number of creative activities can take place. We found inspiration in the renovated Navy yards of Brooklyn and Philadelphia, as well as the newly designed headquarters of Google and Autodesk. Our ultimate vision for the C2 bay includes several open-plan floors, movable 'creativity cells,' multiple prototyping and shop spaces and numerous amenities that would allow for longer stays on the Mountaintop campus.

While working on our own project was fun, it was perhaps even more fascinating to see what other groups were working on. From 3D printers, to refugee housing, to the car of the future, we watched these complex projects develop in what was not much more than a shell of a building with relatively few resources on hand. Imagine what the students could do if the building was specifically designed to help them explore, create and develop their brilliant ideas into something more!

From what I've noticed, as we grow up we thoughtlessly and unnecessarily limit ourselves in what we believe to be possible. Mountaintop could be a place of creativity and innovation where we free ourselves from our existing notions of how the world has to be, where we can restore our imagination so that we can better solve the problems of the future. We need science, technology, engineering and math in order to make progress, but we can't forget about what inspires and directs that progress: creativity.

PENN SCOTT '13 *Xiphias Car Project*

By the time Building C-2 opened for the summer pilot program, James [Suh] and I had already spent several months pulling together the foundations of our car design. We'd been grinding out models and sketches late into each night, using nightstands for desks, cramped between our computers and his closet.

The prospect of staking out a better habitat for bringing the Xiphias Concept to life thrilled us, so we arrived right when the doors opened in May to claim our spot. During our hundred days over the summer, with the assistance of Miguel Roman '13, Robert Vargo '14 and the Lehigh community at large, our team explored the development of innovative solutions in automotive engineering and design.

There's a fine line that an open workspace like C-2 must tread, between offering teams a chance to build off each other's enthusiasm while leaving room for their privacy, and the building's unique setup walked it quite gracefully. We had a blast exchanging ideas with groups building refugee shelters or augmented reality spaces as we raced forward designing a supercar concept.

Perhaps what our team is most grateful for is the university's trust in our ideas and in our self-motivation. This [Mountaintop] program took a risk by exploring a new educational model, but I know we aren't the only group who walked away with some great results at the end of the summer.

Even as the fall semester got underway, we pressed on with our project and are only now officially wrapping up work. Beneath the

skin of the Xiphias Concept vehicle, there is now the world's first purely topology-optimized automotive chassis—showcasing the promise that computational simulation offers in the development of super-efficient structures. Without our experience with Mountaintop over the summer, we simply would not have had the chance to pursue such a radical, immersive end goal.

And for that reason, we'd like to say thanks once again to the Lehigh community and also to express our enthusiasm for seeing the Mountaintop experience take shape at the university.

JAMES SUH '14 *Xiphias Car Project*

As a designer, I always dreamed about working on a long-term automotive project—where I can take a leading role to provide a unique and desirable design package and work in conjunction with engineers to allow the project to develop much further. Fortunately, I was able to find talented students who share my passion in cars yet have distinctive academic and professional backgrounds at Lehigh: Penn Scott '13 (IDEAS), Marcus Risland '14 (finance) and myself '14 (design). Our interdisciplinary team immediately went to work. My Campus Square dorm room became our office where we met to make progress on the car every day.

A larger workspace, financial support and exposure to the Lehigh community and beyond were much needed components of the project. The Mountaintop program offered us all of that. During our time this summer, we were able to focus on the car (while being) surrounded by other motivated student teams in Mountaintop. The atmosphere where we can feed off each other's enthusiasm worked incredibly well with the openness of the building C2.

As a team, we are most grateful for the university's trust in our ambitious idea. I can still clearly remember our first meeting with the administration; although we did not have materials to prove our thoughts, the conversation was about how to make this a reality and what are the specific steps to get there, rather than disapproval. I am extremely thrilled to be involved in a program where students were in the driver's seat to work on something that they are truly passionate about.

We are officially wrapping up our work this semester. However, this project allowed our student supporters like Miguel Roman '13 and Robert Vargo '14 to start their individual projects. For the rest of my time at Lehigh, I will be extending my work with the concept by working on a full-scale ergonomic study of the vehicle. I realize that not many undergraduate designers (even the professionals) get to design the entire car with their purest vision and I am extremely grateful for the opportunity I have. I would like to say thanks again to the Lehigh community and I hope to be involved with the Mountaintop program even after my time at Lehigh. ■

To learn more about Mountaintop, and President Gast's vision for the project, visit lehigh.edu/mountaintop.



THE STRUGGLE AND THE GLORY

STEPHANIE POWELL WATTS SAYS
WRITING IS ALL ABOUT THE STRUGGLE, AND
ALL ABOUT THE WILLINGNESS TO OVERCOME
IT. SHE'S DONE PRECISELY THAT, AND THIS
YEAR EARNED ONE OF THE BIGGEST HONORS
IN THE LITERARY WORLD.

BY TIM HYLAND

Listening to Stephanie Powell Watts talk about the craft and process of writing, one has to wonder how she ended up as a writer at all. ¶ Because mostly, she makes writing sound like one big struggle—and an unending struggle at that. ¶ “There were so many times where I wanted to divorce writing, and so many times where I thought, ‘Why can’t I do something else?’” says Watts, an associate professor of English. “But if your story doesn’t work, you have to figure it out. And either you do figure it out, or you stop. For a lot of writers, that’s very difficult. ¶ The rejection in this business is just awful. It’s very hurtful. Well, the first time isn’t that hurtful. But the 12th time certainly is.” ¶ Fortunately for Watts, a native of rural Western Carolina, the rejections aren’t nearly as common as the honors these days—and though she may not always enjoy writing, there’s no denying the fact that she is really, really good at it. ¶ In October, Watts was named one of the 2013 winners of the Whiting Writers Award, one of the most distinguished honors in the literary world. Given each year to up-and-coming writers in fiction, nonfiction, poetry and theater, the award has in past years been handed out to such stars as Mark Doty, Jonathan Franzen and Tony Kushner, among many others. Around the same time, Watts was putting the finishing touches on her first novel, which will be published in the wake of the hugely successful short-story collection, *We Are Taking Only What We Need*. That collection, which drew on the stories—both happy and not so happy—of the people Watts knew and loved growing up, earned widespread praise, including the 2012 Ernest J. Gaines Award for Literary Excellence and the Pushcart Prize. ¶ Shortly after accepting her Whiting Award, Watts sat down with the *Bulletin* to discuss her still difficult transition from South to North, the ways her hometown informs her writing and, of course, the day-to-day struggle that is the writing life.

HOW DID YOU END UP HERE AT LEHIGH?

I was in graduate school at the University of Missouri, where I got a Ph.D. in creative writing, fiction writing and 20th century African-American literature, with an emphasis on folklore—African-American folklore in particular. I then went to Memphis for a year, where I was visiting writer at Rhoads College, and then I ended up here. I was actually the first pure writer hired by the English department. My emphasis is on creative writing, while the rest of the department is really about faculty who are much more research-based. A year later they hired my husband, who is a poet, as a professor of practice, and they also started a writing program, because we wanted to offer a writing minor for our students. I’ve been here since 2004 now.

SO IT’S BEEN A DECADE NOW. BUT I HAVE TO ASK: HAVE YOU FULLY ADJUSTED TO LIFE UP HERE IN THE NORTH?

It’s still an adjustment. I won’t lie. It’s one of those things you have to get used to with time. For the first two or three years I was here, I found myself being constantly surprised. Now I’m not as surprised anymore. But it’s still an adjustment. People are just different here. There’s a different way to this world. In the South, there is a sense of courtesy that lubricates the social interactions between people. People are polite. That doesn’t necessarily mean that people like you, though. That’s important for people to understand. I’ll hear people visiting the South say, ‘Oh, they are just so nice,’ and I’ll have to say, ‘They’re not your friend.’ That’s very different than here. There’s a different way of interacting. And then there’s the weather. It’s not

terribly different here than in the South, because I grew up in western North Carolina, but we do obviously have a little more cold and snow up here.

IS THE REST OF YOUR FAMILY STILL IN NORTH CAROLINA?

For the most part, yes. I have a brother who lives outside of Washington, D.C. He's a math guy, and does computer programming for a living. I have four younger brothers in all, and the rest of the others are all in North Carolina—though, thankfully, not in the same house.

TELL ME ABOUT THE TOWN WHERE YOU GREW UP.

It's called Lenoir, and it's pronounced Len-OR. It's not Len-WA. It's in the foothills of the state—just a really beautiful place. Rolling hills and mountains all around. It's mostly known for its furniture manufacturing industry. If you had watched *The Price Is Right* 20 years ago, all of the furniture that they were giving away would have been from Lenoir. Of course, most of that industry is gone now. So it's a struggling down in some sense, and that kind of reminds me of this place, as does the fact that all during my childhood, there was a big huge star up on one of the hills overlooking our town. But anyway, it's a beautiful place, and people are struggling. It's very much a small town. The Main Street has seen better days. My uncle still has a business on that street called Marvin's One-Stop Record Shop, and as I joke, the name of the store itself tells you how viable a business it is. He still does sell records, though, so if you ever need records and are in the area, please stop by.

HOW WOULD YOU DESCRIBE YOUR CHILDHOOD?

I think it was a good childhood. It's one of those kind of very Southern childhoods, I would say.



THAT SEEMS LIKE LOADED TERMINOLOGY: "SOUTHERN CHILDHOOD."

Yep. It was about a big family, and dirt roads, and not enough money. We had lots of interesting characters and everyone had a lot of very close-knit interaction. Sometimes that could be really wonderful, and sometimes that could make you crazy. My son, I realize, won't have that same experience—he won't have people running in and out of the house all of the time. But he can have a new beginning entirely. He just won't have that family around him. Both of my parents come from very large families. My father was the oldest of eight, and my mother was the sixth of ten. That's a lot of people, and most of them are still relatively close to or still in North Carolina.

DO YOU MISS YOUR FAMILY—AND EVEN THE CRAZINESS THAT FAMILY BRINGS ALONG WITH IT?

Yes, I do. There's a certain kind of anchor that family gives you in the

world—a kind of historical continuity—that's really hard to manufacture. I am always reading child-rearing books, and one of the ones I was reading recently was talking about the importance of talking to your kids and telling them about their family stories. It was all about the importance of getting them to understand that there was something before them, and that there will be something after them. And while I think that's very important, I think it can also get really suffocating, especially if some of those stories are less than happy and especially if some are downright tragic.

YOUR FICTION DEALS WITH A LOT OF THOSE STORIES YOU WERE JUST TALKING ABOUT. I'M WONDERING IF YOU FEEL AS THOUGH YOU NEEDED TO GET AWAY FROM THAT PLACE IN ORDER TO TELL THESE STORIES ABOUT THAT PLACE.

I think this is one of those things about being a writer, where you do need to have a certain kind of mindset. People talk about the importance of displacing yourself, about getting lost somewhere else, and how that might help you think about what was valuable and terrible about the place you left, but I also think you can accomplish that even if you're still there. That distance that you need, I think, is not necessarily geographical. You just have to be able to see everything in all of its facets, and still be connected with it. Now, some people can do that and still be right there in the midst of it. I do think it took distancing myself from that place in order for me to really figure out what I wanted to do with it.

WHEN DID YOU START WRITING?

I have always written. I was always writing as a kid and I always wanted to write, but I never considered myself ultimately being a writer. Going to college was a really big decision for me. I come from a very religious family, and at least my understanding of that religion at the time was that college was not something that I should do—that it wasn't my mission in life. As a first-generation college student, there was a lot of push and pull on me at the time. I thought, well, I could at least go somewhere and try [college], but then if it didn't work out, I could change directions and do something practical. Part of me did want to do something practical and make some money.

BUT YOU DID CHOOSE COLLEGE AND YOU DID CHOOSE WRITING. WHY?

I guess I would say that I just eased into it, and then I just kept going. I am pretty stubborn and difficult at times, and I'm not sure that people really tried very hard to stop me. I can be like talking to a brick wall. There were times when I was an undergrad where I felt really uncertain as to whether I would ever actually graduate. But by contrast, when I got my master's, I felt absolutely certain that I was going to get my Ph.D. I knew that was something I wanted to do. But up until then, at pretty much any time, I felt as though I could have just quit and gone home and done 'the right thing.'

SO HOW DID YOU GET TO THAT PLACE OF CERTAINTY?

There is a time and a place in life when things have to become real, or you have to let them go. That was what happened to me. I finished my degree, and I felt like, 'I'm either going to do this and work hard at it and do the best I can possibly do, or I'll let it go.' And right around then, I decided I was going to graduate school, and I made that commitment to myself. When I was in graduate school, I remember feeling as though I had my 'come to Jesus' moment, and I remember thinking, 'This is going to be my life. This is going to keep me from feeling like a loser or a bad person. I'm going to do it and I'm going to do the best I can.' But even then, who knew how it was going to ultimately turn out?

HOW WAS YOUR GRADUATE SCHOOL EXPERIENCE?

I loved it. I felt part of a community, and I loved thinking about writerly things. I know this is going to sound high-falutin, but I recall thinking about how, when you were writing a story, even fiction, somebody's life was being represented, and that person has entrusted

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you in some way to get it right. Which meant that I knew I had to get it right. You can't represent them in a way that makes them look stupid or laughable. You have to be able to show all of their flaws and beauties and complexities. I didn't want to mess that up.

YOUR STORIES ARE OBVIOUSLY BASED IN THE PLACE WHERE YOU GREW UP. ARE THE CHARACTERS BASED ON REAL PEOPLE? OR MAYBE COMPOSITES OF PEOPLE?

Some of my stories have the germ of people that I know—somebody I once met or somebody even that I love—but so long as they are presented with honesty, they usually don't care that I've written about them. Sometimes people might say, 'Oh, didn't your brother say such-and-such that's in the book,' or 'That's just like something your grandmother would say.' But again if it's done with honesty, people just go with it. But I rarely have a single character that is about just one person. One of my characters might do something or be in a situation like somebody I knew, but the rest is all fiction.

DID YOU HAVE ONE OR TWO KEY MENTORS WHO HELPED YOU ALONG THE WAY?

I've had a lot of great feedback in my career, and I've had a lot of wonderful professors and friends who helped me out. And I have to say, my early stories were terrible!

IS THAT JUST YOU SAYING THAT?

No, they are really bad. They are underdeveloped, just bad, bad stuff. And that's one of the hardest things about writing. That's where the real commitment comes in. Malcolm Gladwell has that whole idea about the notion of 10,000 hours of practice to mastery, and I think there's a lot to it. You have to be willing to stick it out and see what can happen.

HOW DID YOUR SHORT STORY COLLECTION, *WE ARE ONLY TAKING WHAT WE NEED*, GET PUBLISHED.

Well, I sent it along to this little boutique publisher, and my thought was, 'I'm going to send this out and just hope that it gets published, and if it does, then I'll send my novel.' The short story collection was going to be my entrée into the writing world. I don't know, maybe everybody has these dreams, but I had these daydreams about winning Pulitzers and move to the Barbados. But honestly, I have been shocked that it did so well. I had just brought my son home from the hospital, and two days after that, I got the call that it was going to be published. It's been a whirlwind since, but a really wonderful whirlwind.

THAT COLLECTION DID REALLY WELL WITH THE CRITICS, AND THIS YEAR YOU FOUND OUT YOU HAD WON THE WHITING AWARD. WHAT CAN YOU TELL US ABOUT THAT AWARD?

It's just one of those names that people in this field recognize. And

after I won it, it seems that I have a lot of interesting people out there trying to find my email address. It's really been great.

SO WHAT ARE YOU WORKING ON NOW? ANOTHER NOVEL?

Yes, it's a novel. I feel like I'm being a little bit nervous about it. Obviously no matter what you write, you want it to be good, but I have to say, I really, really want this to be good.

HOW DO YOU DEFINE 'GOOD'?

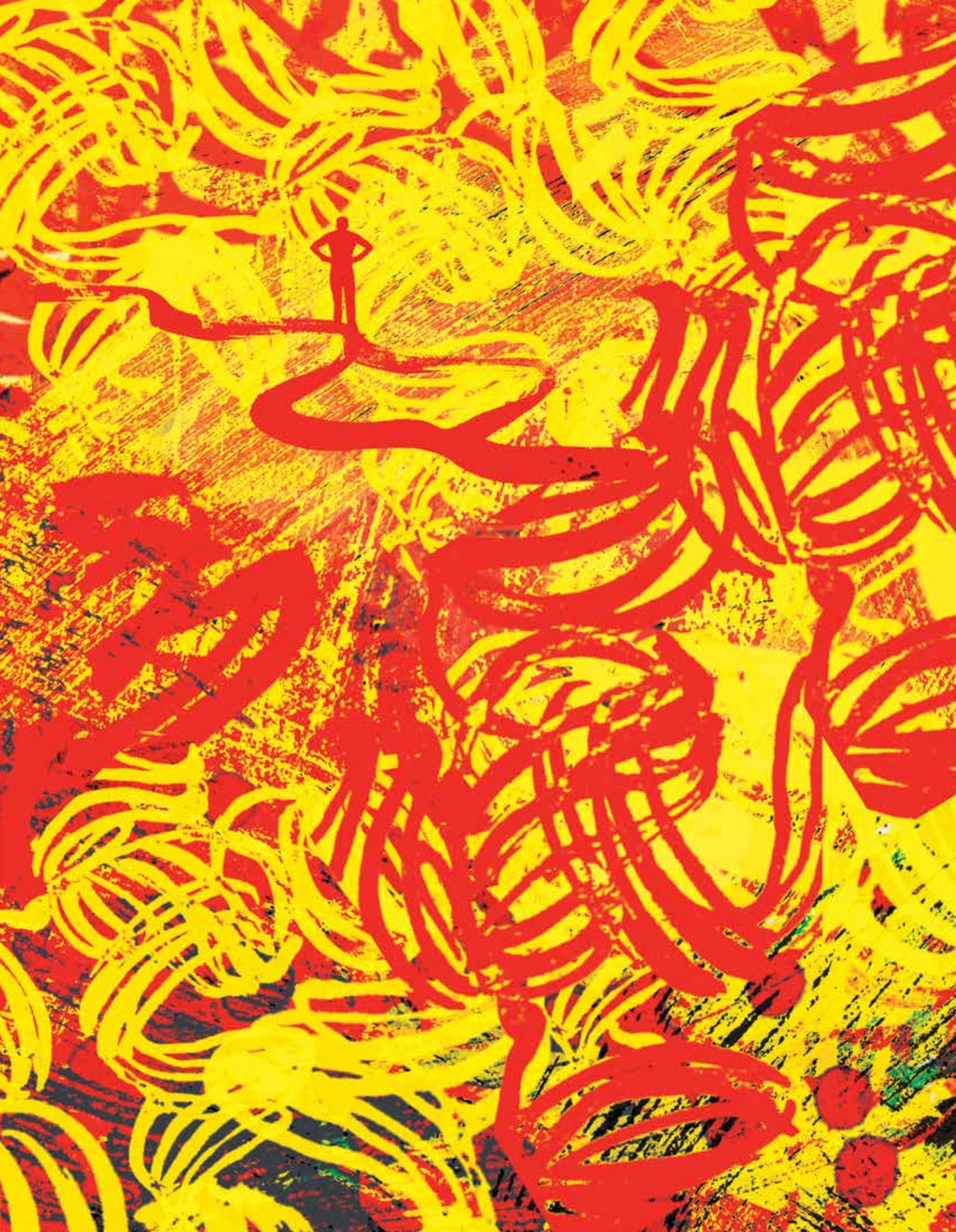
I just don't want it to be a situation where people buy it and their reaction is, 'Oh, wow, I thought she was good. This sucks!' People love to tear others down, they really do. People love to anoint and they love to tear down, and that's just part of the human condition. Both are wonderful things to do, I guess, because they make you feel god-like.

YOU'VE BEEN THROUGH WRITER'S STRUGGLES, HOW HAVE YOU ENJOYED TEACHING AND HELPING STUDENTS DEAL WITH THOSE ISSUES?

It's a great experience. I love teaching and I love my students. The thing is, you just have to be so careful with people who are just trying this out for the first time, who are just trying this life. It's a difficult life, and a long struggle. You have to be careful not to injure somebody in the midst of that struggle. It's a real balance where you have to say to them, 'Well, this part is good, but here's what you need to work on.' It's very hard to not make this a personal criticism and it's hard not to hear it as a personal criticism. But the thing is, I was in graduate school with adults who were much older than my students are, and it was difficult for them, too. It's not just hard because they are young. It's hard because the experience itself is hard. I want to be able to help them with that—to be a facilitator, a helper, somebody that can help them down that road, rather than being somebody creating a big huge moat with crocodiles inside. Because I really do have some very talented students here.

WHERE DO YOU SEE YOURSELF IN 10 YEARS OR IN 20 YEARS?

I guess I don't know enough about the writing life to answer that, necessarily. I am guessing the anxiety and insecurity is just part of it. I feel that will always be there, and I guess in some way, I hope it always will be there. I think it's a good motivator. It spurs me to think, 'OK, this can be better. How can I make it better?' As for your question, I would say that in 10 years I hope I'm still working, and still writing, and fighting the good fight, because I think there is something missing in a society that doesn't know how to tell a story or doesn't read its stories. There are so many amazing stories from unlikely places, just like those people I knew from those poor dusty roads in North Carolina. So I guess I would say, I hope I'm still writing, and sitting on a stack of my own books at the dinner table. ■





ATTACK FROM ALL ANGLES

Story by Brian M. Schleter

Illustration by Simon Pemberton

Despite impressive medical advances, cancer continues to frustrate clinicians—and overcome its victims. At Lehigh, a diverse group of researchers is employing varied techniques to try and defeat cancer once and for all.

A century is but a small speck on the timeline of the history of science. But the last century has yielded more scientific breakthroughs in the area of cancer research than anyone could have possibly foreseen 100 years ago: A greater collective understanding of what causes cancer, how to prevent it and how to treat it has saved countless lives.

For all the astonishing advances made by physicians and scientists, though, there is much we still don't know about how cancer cells develop, the mechanisms they use to spread, and how to stop them. At Lehigh, a cadre of cancer researchers is working to answer some of these very questions. Supported by federal research grants, they are leading investigations that are enhancing our knowledge of the biological and chemical properties of disease.

Their findings may lead not only to safer drugs to fight cancer, but just as importantly, more accurate and cost-effective screening tools to catch the disease before it has a chance to ever develop.

The latter goal is the focus of a study currently being led by Xiaolei Huang, an associate professor of computer science and engineering, who is working to defeat cancer through two different research projects. Huang is a computer scientist who uses imaging analysis to study the functioning of human cells, the brain, the eye and the body as a whole. More recently, she's turned her attention to cervical cancer—which, despite great advances in cancer treatment, remains one of the most common causes of cancer death among women worldwide.

Early detection through widespread use of the

Pap screening test and other diagnostic procedures has significantly improved survival rates, yet each year, 12,000 American women are diagnosed with cervical cancer and 4,000 women die of the disease, according to the Centers for Disease Control and Prevention.

In poorer countries, cervical cancer remains one of the leading causes of cancer death among middle-aged women, Huang says. More than 275,000 women died from cervical cancer worldwide in 2008, and nearly 90 percent of the deaths occurred in developing parts of the world, according to the American Cancer Society. Cervical cancer can be a silent killer; it grows slowly and its symptoms often do not start until the cancer has spread to nearby areas.

In many nations, early detection through Pap testing isn't available due to a lack of laboratories and trained personnel for conducting screening, diagnostic and follow-up tests. An alternative test is the cervigram, which involves taking a digital photo of the cervix. While the technology is low-cost and more widely accessible in resource-poor regions, experts differ on its effectiveness as a conclusive diagnostic tool.

Through a grant from the National Science Foundation, Huang was granted access by the National Library of Medicine and the National Cancer Institute to databases containing some 100,000 anonymous images of cervical lesions and the accompanying notes made by physicians and imaging professionals.

Huang, an expert in image object segmentation, and her group developed a computer system that categorized each image according to color, texture, size and shape. With access to comparison images, clinicians can more accurately grade the severity of new lesions. "The advantage of computers is their ability to do quantitative things," she says. "To make a precise diagnosis, we need quantitative information. How many objects are there? What's the size of each one? What are the subtle differences between them? [With] those kinds of things, computers can do better than humans."

After the databases were indexed, Huang created a program capable of correctly classifying the severity of the disease in a new, undiagnosed patient by comparing that patient's image against known patient outcome data from other records in the database. "My interest was, 'Can I look at these (unlabeled) images and ... develop some computer-assisted interpretation of these images so we can make this diagnosis more accurately?'" she says.

The system could prove to be a powerful tool to help doctors differentiate low-grade cervical lesions from high-grade lesions and invasive cancer, possibly negating the need for expensive and invasive follow-up tests. Other similar methods only perform processing or segmentation of cervigrams without patient classification. Huang's cervigram image interpretation algorithm, by contrast, can produce a cervical dysplasia diagnosis with high accuracy. In fact, in a recent trial using 280 new images from women in Costa Rica, Huang found that adding image study to traditional Pap and HPV tests significantly improved the accuracy of diagnosis related to high-grade lesions.

In a recent trial using 280 new images from women in Costa Rica, Huang found that adding image study to traditional Pap and HPV tests significantly improved the accuracy of diagnosis related to high-grade lesions.

STOP THE GROWTH, STOP THE DISEASE

In a separate five-year, \$1.3 million project supported by the National Institutes of Health, Huang is collaborating with Dimitrios Vavylonis, an associate professor of physics in the College of Arts and Sciences. They've teamed up to study how actin proteins come together to form microfilaments, a key component of the cytoskeleton—or structural framework—of yeast cells. Through their work, the duo hopes to gain a fuller understanding of how cancer grows—and, by extension, how that growth can be halted.

"Actin is a very important protein in cells," Huang says. "It plays an important role in cell division and cell movement. As it relates to cancer research, given this fundamental understanding of how cells divide and what triggers abnormal cell division, we can aid in the search for drugs that block cancer from spreading."

When a cell is about to divide, Huang says, the actin filaments in the cytoskeleton start to condense in the center of the cell, forming a dense ring-like structure that constricts until it snaps. The cell then divides into two identical daughter cells. Biologists have many theories on where actin filaments come from, how they mesh into this cohesive network and how they coordinate to achieve these tasks. What they don't have is any firm answers.

Actin filaments can be seen on three-dimensional images of cytoskeletons taken over time with fluorescence microscopy. These images offer clues on how the network changes. Huang and Vavylonis proposed developing computer software capable of tracking individual filaments and segmenting them by pinpointing their centerline, but the task was complicated by the fact that the intensity (or brightness) varied along each individual filament. Additionally, the contrast between the filaments and the background created photographic noise that needed to be cancelled out. "For a computer this was not trivial at all," Huang says. "The challenge was to develop a quantitative image analysis algorithm to be able to deal with all these issues. If we could extract out all the filaments and identify the junctions, we would have their topology."

Recently, Huang and Vavylonis took a big step toward achieving that goal: A student in Huang's lab developed new software that, for the first time, can automatically find the centerline for filaments comprising an actin meshwork in yeast cells, which are commonly used to study biological pathways and in drug research. The results of their study were published in the journal *Cytoskeleton*.

FLIPPING THE SWITCH

In the chemistry department, another researcher is looking to devise new methods of inhibiting the growth of a particularly virulent type of cancer cells. Marcos Pires, an assistant professor, is studying a protein called PAD4—short for peptidyl arginine deiminase type 4—that plays a key role in regulating immune suppression and gene expression. The enzyme is believed to help certain cancer cells become more aggressive and more resistant to drug therapies.

Pires first became interested in PAD4 after a

conversation with his sister. The lab where she worked was exploring why PAD4 showed up more in cancer cells than in healthy cells in breast cancer patients. Researchers have found no good way to measure PAD4 activity, which is the only way to verify whether potential drug agents would be effective at neutralizing it.

Pires' interest lies in manufacturing synthetic molecules that can be used to probe biological systems and responses. He set out to develop a test, or assay, capable of screening as many drugs as possible to find what works and what doesn't. "Our focus isn't just making molecules for the heck of it, but to try to answer something about a living organism," he says. "It occurred to me we could design a small molecule that would look like the protein that PAD4 acts on."

The work, carried out with the assistance of an undergraduate student on a Lehigh science scholarship last summer, involved creating a "light bulb test" of sorts. First, the researchers synthesized PAD4 and attached a chemical signal to it that would illuminate if the protein is working. This switching on/off effect can only be observed under fluorescence. The trial worked, and the results of the study were published in the research journal *ChemBioChem*. "We now have the easiest, most reliable assay for this class of proteins out there," Pires says.

One of many next steps is to use the test to screen thousands of available molecules for the purpose of finding the ones that could potentially work as a drug. A Penn State research team published a study last year identifying a drug that inhibits the PAD4 protein, and results showed it capable of reducing tumors in mice by 70 percent. But the drug was highly toxic, making it a poor candidate for use in humans. Pires is collaborating with that team and others to try and develop more effective agents using the assay he developed.

He is also interested in replicating the test on PAD4 samples from actual human cancer cells. This could yield greater knowledge of the protein's structure and potentially lead to new drugs that more safely target cancer cells without producing side effects in normal tissues. "We've never had a way to measure this before," says Pires. "There could be surprises in how PAD4 gets turned on/off in live human cells. What are the things they can turn on, especially in context of cancer cells? What are the balancing effects of that?"

NEW APPROACHES, NEW HOPE

Treatment of cancer patients has stalled in recent history despite advances in the biomedical field. The death rate for breast cancer has remained unchanged for the past three decades, driving the need for more highly targeted therapies.

In another project that aims to tackle that challenge, Pires is collaborating with Damien Thévenin, another assistant professor of chemistry, to develop a novel methodology for delivering anti-cancer agents to tumors without damaging healthy cells. The peptide "homing device" technique they've pioneered releases the unmodified drug only when it reaches the inside of targeted cancer cells. This represents a major advance over previous methods.

Our focus isn't
just making
molecules for
the heck
of it, but to
try to answer
something
about a living
organism.

-Marcos Pires

Most current targeting strategies take aim at specific cancer surface proteins. However, they have had limited success against solid tumors in part because cancer cells are almost identical and share similar protein markers to noncancerous cells. Drugs inadvertently accumulate in healthy tissues, limiting their efficacy and causing toxic side effects. For this reason, fewer than 10 percent of new drugs move past Phase III clinical trials, where therapeutic effects are evaluated.

Cancer cells do have important differences from other cells, however, and Thévenin has focused specifically on one element: The fact that malignant tumors create an acidic micro-environment around themselves. With that in mind, Thévenin has created a homing device—a pH(Low) Insertion Peptide (pHLIP)—that selectively targets tumors in mice solely based on their acidity rather than on any specific marker.

Thévenin's peptide is paired with a unique and stable chemical link that Pires created to latch a cancer-fighting drug with an antibody capable of bonding with specific proteins inside the cancerous cells. Once the bond is made, the "traceless linker" they designed switches "off" and the unmodified, FDA-approved cancer chemotherapy drug is delivered. The project was supported in part by a Lehigh University Faculty Innovation Grant. FIG grants help faculty members establish new research project or expand existing projects, with the goal of creating a new line of research that can grow for years to come.

In the realm of cancer, at least, Lehigh seems to be moving in precisely that direction. In its own unique way—interdisciplinary, practical, highly focused—Lehigh is taking on the challenge of beating cancer head-on—and producing results. ■



The Spirit of Spirit Week

PHOTOGRAPHS BY
CHRISTA NEU

So, in the end, the game didn't turn out the way we'd all have liked.

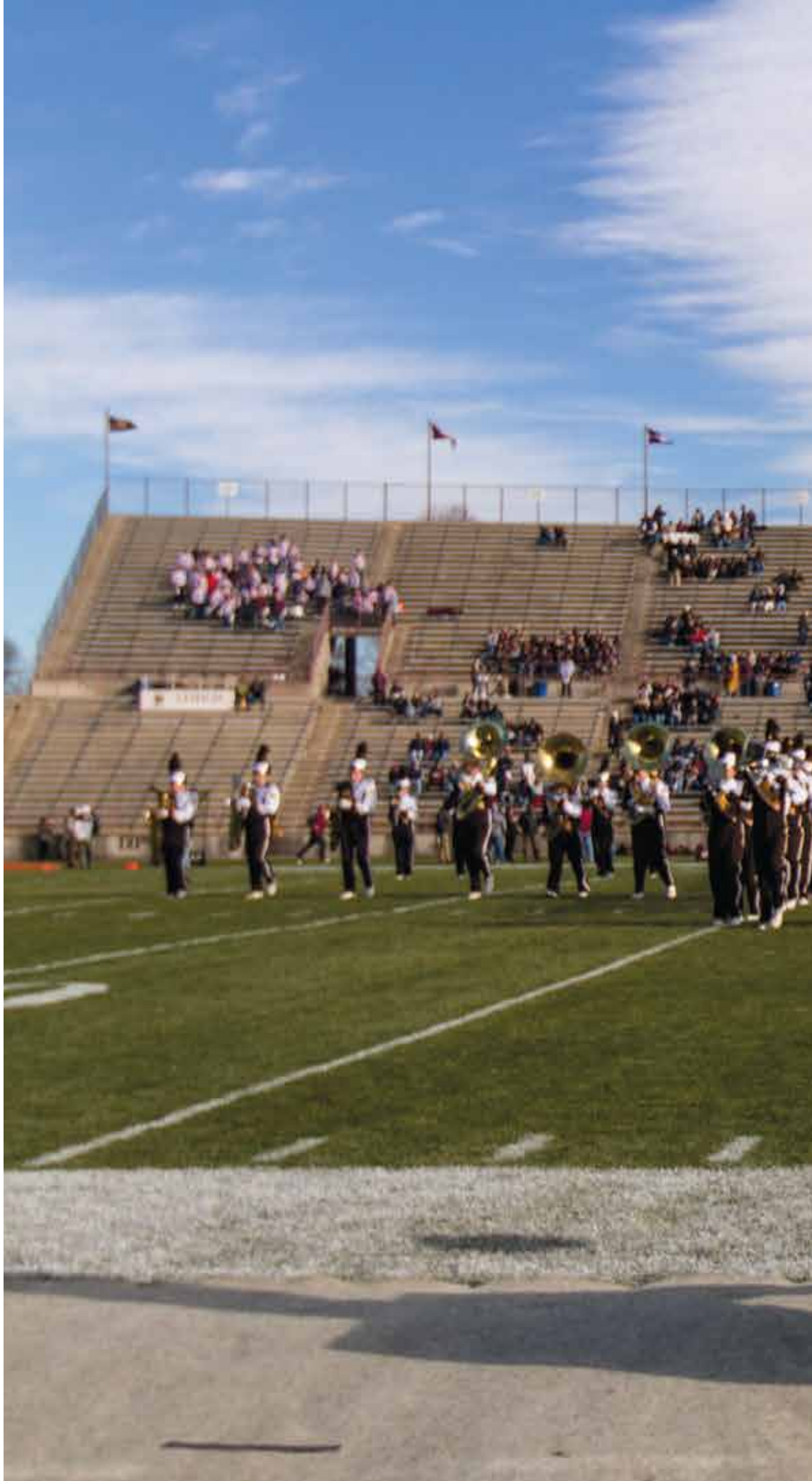
After five straight years of owning The Rivalry, Lehigh in November finally saw its winning streak against Lafayette end, as the underdog Leopards rolled into Goodman Stadium and won the 149th game in this great series, 50-28.

It was a difficult pill for the Lehigh faithful to swallow (as is every loss to those folks over in Easton), and players, coaches, families, students and fans alike certainly took it hard.

But as important as the game is—and yes, it is very, very important—Lehigh-Lafayette isn't just about football. Rather, the game itself serves as the capstone event of a weeklong celebration of the history and traditions—some old, some new—that make Lehigh such an incredible and unique place, and a reminder that, even in the years when the Mountain Hawks don't win, it is truly wonderful to be involved in a rivalry as storied as this one.

This year, the *Bulletin* sent staff photographer Christa Neu out to campus to capture just some of the events that make Lehigh-Lafayette Spirit Week so memorable, every single year, for generation after generation of Lehigh students. In the pages that follow, you will see some of the images that she returned with.

Who knows? They might cheer you up a bit, and make you forget that less-than-ideal result in November. —Tim Hyland



BALANCING ACT After doffing her cap, drum major Elizabeth Drummond '14 leads members of the Marching 97 through their paces in a pre-game performance







A MEASURE OF COMFORT Offensive linemen Matt Douglas '15 (opposite) and A.J. Hood '14 (opposite, bottom) console each other after the loss to Lafayette, Hood's final game as a Mountain Hawk.

IN SYNC The Nupes (opposite, top) of Kappa Alpha Psi fraternity (l-r, Kelly Petty '14, Jovan Campbell, Paul Komikview Tosin and Scott Grant) step it up at the Dance Marathon in Grace Hall.

DON'T BED ON IT Spectators cheer on their favorite teams at the annual bed races (top two photos), while a trombonist from the Marching 97 serenades the assembly (above left).

UNDER THE STARS As evening falls, students gather on the front lawn of the University Center (above right).

IN THE GAME Members of the cheer-leading squad (left) keep the crowd energized at Goodman Stadium.



A TOUGH TALK Head coach Andy Coen (above) consoles his team after the defeat to Lafayette. Next year, the Mountain Hawks will have the chance to avenge the loss when they take on the Leopards at Yankee Stadium (see story, page 22)

IMPORTANT GUESTS Niki Noto and Ali Nejad, hosts of the popular ESPN show "ESPNU Road Trip," spent much of Spirit Week at Lehigh, learning more about the rivalry, its history and its importance to both schools.

TOP BILLING The annual Lehigh-Lafapalooza featured (bottom left) a concert by Disco Lemonade of Boston and a laser show by P.A.W.N. Lasers of Philadelphia. Lehigh fans (bottom right) cheer a Mountain Hawk touchdown.

CHOOSE YOUR HUE The popular bed races (opposite, top) inspired at least one contestant to don patriotic colors. Meanwhile, for Fall Fest (opposite, bottom), students adorned the UC's front lawn with brown-and-white balloons.







Lehigh Looks Forward

Robert Wolfenden dishes on the big 150th.

IS EVERYONE EXCITED for the 150th meeting of The Rivalry? Here on campus we are starting to feel the energy behind this once-in-a-lifetime event. Lehigh has been planning special activities to commemorate next year's milestone game. The lineup of events will include intellectual dialogues, gatherings and walking tours in New York, and even an appearance of Lehigh Choral Arts on the main stage of Carnegie Hall. Make sure you stay in the loop on the latest developments by visiting lehighsports.com/rivalry150. We are working to make sure there are a variety of ways you can participate and experience this moment in Lehigh's history. This year will bring new opportunities for you to connect with us, and we want to make it easier than ever to join the celebration.

Now that you are holding the first *Bulletin* of 2014 you are probably noticing our fresh new design! We hope that you are enjoying the new look, which still highlights the great stories of Lehigh but in an updated and visually exciting way. This new look reflects similar changes to

the designs of Lehigh.edu and MyLehigh.lehigh.edu. The changes to these websites are important as we offer more ways for you to connect with us virtually. Lehigh offers a lot of interesting and dynamic content online from career services to educational webinars, and we will continue to grow in this area throughout 2014. Make sure you go online and visit our new websites to see what we have to offer you.

It is my hope that the changes in 2014 will welcome you to participate in a bold new year at the university. You have a place here in our Lehigh family: get connected, be involved, and live Lehigh proud!

Sincerely,
Robert W. Wolfenden
Assistant Vice President for Alumni Relations



FOR THE SECOND time in the 69-year history of the annual Columbus Day Parade, one of Lehigh's most prominent alumni was honored as grand marshal of the world's largest celebration of Italian-American culture and achievement.

With his wife, Amy, and family, **Joseph R. Perella '64** led 35,000 marchers up Fifth Avenue in New York on the national holiday in October with an estimated one million spectators from around the world crowding the streets or cheering from home.

Perella, known as the "Gentleman of Wall Street" for his integrity, trustworthiness and character, has influenced the world of finance and investment banking in a 40-year career on Wall Street, while changing countless lives through his philanthropic work.

A business administration alumnus and Lehigh University Board of Trustees member, Perella followed in the footsteps of influential business leader and fellow alumnus, Lee Iacocca '45 (above). Both men were given the honor of leading the parade at the pinnacle of their careers—Perella as a Wall Street icon and founding partner and CEO of Perella Weinberg Partners, and Iacocca, who served as grand marshal in 1982, as chairman of Chrysler Corporation.

THE ORIGINAL Business icon Lee Iacocca '45 (top) led the Columbus Day Parade as grand marshal in 1982.

THE SEQUEL As honored grand marshal, Joseph R. Perella '64, with his wife, Amy, (left) led the 2013 Columbus Day Parade through Manhattan on October 14.



UNIVERSITY ARCHIVES

OLD SCHOOL Some things never change at Lehigh. Some things inevitably do. In this undated photograph—probably from sometime in the late 1890s, according to Lehigh historians—you can see evidence of both. In the background, as always, looms South Mountain, which continues to serve as the backdrop of Lehigh athletics today. Then there’s the high jump technique being illustrated here by some unknown athlete—a technique that is just a tad different than that used today by such modern Lehigh track stars as Adelow Adesida (see *STATS*, page 23).

REUNION Robert Cutler's 100th Birthday



CUTLER'S LEGACY *Jeb Baxter '80, Barry Hamlette '79, Peter Finkel '81 and Bob Nesbitt '79 (top left) and Robert Sellman '66 and Daniel Franceski '64 (bottom right, with grad student Michelle Spicer) were among 75 alumni who sang a concert to honor the late Lehigh choirmaster Bob Cutler.*

MORE THAN 30 years after his retirement from Lehigh and nearly a decade after his passing at the age of 90, Robert Cutler's remarkable legacy at Lehigh only continues to grow stronger. The fact that 75 choral arts alumni returned to campus this past fall from all corners of the country to honor the late "Boss" is certainly a testament to that.

In November, generations of choral arts alumni gathered at Lehigh to celebrate what would have been the 100th birthday of the man credited with building the Lehigh chorus into one of the finest in the nation. The weekend celebration included a celebratory dinner, a Saturday evening concert at Lambertson Hall, a Packer Chapel sing-along and more, as choral alumni old and young came together to share not only stories about Cutler, but also the joy they found in singing at Lehigh.

"I'm really, really happy with the turnout," says Sara Newman '13 '14G, who helped organize the event. "People had a great time, and I think it was a really nice way to join together the old alumni with the younger alumni."

Cutler served as director of choral activities and chairman of Lehigh's music department from 1954 until 1979. His passion and love for the choral arts inspired generations of students, some of whom had no singing experience before they arrived at South Mountain.

It was Cutler who got them to believe in themselves. "It was one of the highlights of my time at Lehigh,"

said David Kent '73. "You had a collection of engineers and business majors and people from the various arts, most of whom didn't have a lot in common, and maybe wouldn't have chosen to live together, or do anything together, yet we were all brought together by this shared love of music and making music together. What Prof. Cutler did was take all of those guys and turn them into a wonderful chorus capable of producing truly beautiful music."

The choral tradition of Lehigh University dates back to 1875. Steven Sametz, the Ronald J. Ulrich '66 Chair in Vocal Music, is the fifth director of choral activities in Lehigh's 130 years of choral arts. He joined the faculty in 1979 and has won numerous honors in his years at Lehigh, but has said Cutler must be credited for making his success, and that of his choirs, possible.

Cutler's many students agree, which is why so many of them, Kent included, said they never even considered missing the reunion event.

Singing—and Cutler—meant that much to them.

"He was just so ebullient," Kent says of Cutler. "He was a true educator in that he gave us an enthusiasm for something that may have otherwise been a hobby for us. But it became a passion. I don't think people who haven't performed music can ever fully appreciate what pure joy that is—to create something beautiful. It was not only a pleasure for us, it was a great educational and cultural experience."

NOMINATIONS Board of Directors



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2014 NOMINEES

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 Scott W. Wojciechowski '09 (renewed)

IN ACCORDANCE WITH the by-laws of the Lehigh University Alumni Association, the individuals to the left are recommended for nomination as officers, directors, and alumni trustees, to be voted

on at the annual meeting on Thursday, May 15, 2014. All are three-year terms except as noted.

Once elected, the nominees will join those currently serving listed below

Alumni Trustee

Andrew C. Fiala '92
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Young Alumni Trustee

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Director-at-Large

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 2012-2015

Director-at-Large

L. Craig Lemle '74
 2012-2015

Director-at-Large

John M. Meehan '10
 2012-2015

Director-at-Large

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 2012-2015

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Sabrina I. Slater '05
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 2013-2016

Director-at-Large

Jennifer S. Gonzalez '08 '09G
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Director-at-Large

Jonathan I. Green '92
 2013-2016

Director-at-Large

Andrew T. Hartmann '99
 2013-2016

Director-at-Large

Kevin P. O'Sullivan '91, '93G
 2013-2016

JOHN C. CHEN, 79, former dean of the engineering college, whose pioneering research in heat transfer influenced the design of nuclear reactors, refrigeration systems, steam generators, solar power storage facilities and many other applications, died Dec. 30.

Chen, the Carl R. Anderson Professor Emeritus of Chemical Engineering, received 18 major awards, published more than 200 published papers and supervised more than 35 Ph.D. dissertations.

“John Chen was an internationally renowned scholar in transport phenomena in multiphase systems and a recognized pioneer in boiling and heat transfer,” said S. David Wu, dean of the P.C. Rossin College of Engineering and Applied Science.

“His work has broadly impacted engineering practices in power generation, energy systems, environmental technologies and chemical processing.”

“John had an inexhaustible energy and enthusiasm for teaching, research and service to the profession,” said Mayuresh V. Kothare, chair of the chemical engineering department.

“Even after he retired in 2005, John continued to conduct research and teach classes regularly. His lifetime contributions to his profession serve as a shining example for young engineers.”

THE “CHEN METHOD”

Chen is perhaps best known for a journal article he wrote in 1966 titled “Correlation for Boiling Heat Transfer to Saturated Fluids in Convective Flow.” It won the Classic Paper Award from the Heat Transfer Division of the American Society of Mechanical Engineers International (ASME) in 2003.

Chen, the first non-mechanical engineer to receive the award, proposed a model that predicts the rate at which heat must be transferred to liquid to make it boil. The “Chen Method” has become the standard for designing vapor-liquid boiling systems used in the chemical, power, refrigeration, petroleum, nuclear and gas industries. According to Google Scholar, the article has been cited more than 1,000 times.

In 1994, Chen and chemical engineering professor Kemal Tuzla concluded in a study for the Electric Power Research Institute that new refrigerants with little or no ozone-depleting chlorine could perform as well in some heat-transfer tests as the chlorine-based refrigerants whose production has been banned.

In 2001, Chen received the world’s top prize for achievements in heat transfer—the Max Jakob Memorial Award—from ASME and the American Institute of Chemical Engineers (AIChE).

One of his nominators, Raymond Viskanta of Purdue University, wrote then that Chen “has been the pioneer and the unquestioned leader in the world on boiling heat transfer and other areas involving two-phase flow and heat transfer.”

Another, Geoff Hewitt of London’s Imperial College of Science, Technology and Medicine, said the Chen Method “is still used universally and must be implemented thousands of times every day in industrial design.”

A RECORD OF SERVICE AND HONOR

Chen joined the Lehigh faculty in 1970 after a decade at Brookhaven National Laboratory. From 1983 to 1989, he chaired the department of chemical engineering, and from 1999 to 2001, he was dean of the engineering college.



He won two top honors from Germany—the Alexander von Humboldt Senior Research Award for fluidization research and the Max Planck Society’s Research Prize for research on particle and gas fluidization.

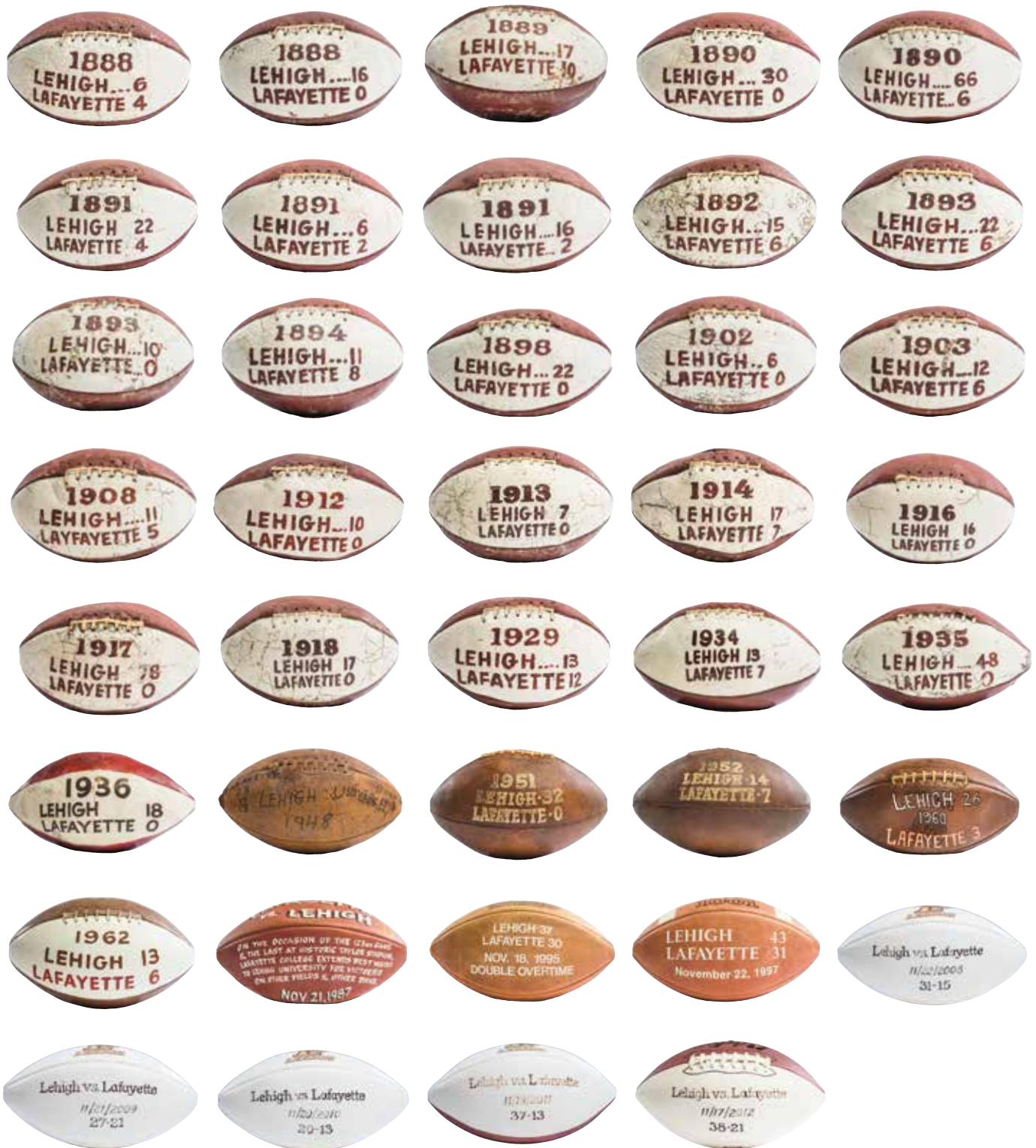
He also received the inaugural World Scientific Award in Boiling and Condensing Heat Transfer (2102), from the Eighth International Conference on Boiling and Condensation Heat Transfer.

At Lehigh, Chen directed the Institute of Thermo-Fluid Engineering and Science. He received the Hillman Award for excellence in teaching, scholarship and service and the Libsch Award for distinction in research.

As president of AIChE, the leading international professional organization for chemical engineers in 2006-07, Chen urged engineers to address the challenges of energy demand and supply and to develop renewable energy sources. In 2007, he toured Australia for two weeks to give talks on energy and the environment.

Chen is survived by his wife, Kathy, two sons, a daughter and eight grandchildren. A memorial service will be held at 10 a.m. Feb. 8 at the First Presbyterian Church of Bethlehem.

JOHN C. CHEN, a 43-year faculty member and the former dean of Lehigh’s engineering college, was the world’s “unquestioned leader” in boiling heat transfer, in the words of one of his peers. He won most of the top international awards in his field.



THEY MAY BE THE MOST TREASURED ARTIFACTS in the Roger S. Penske Lehigh Athletics Hall of Fame: 39 footballs, dating all the way back to 1888, that document the scores of Lehigh’s wins over archrival Lafayette. The balls range in condition from “near mint” to, well, “weathered,” but each represents a proud chapter in the history

of Lehigh football. In total, the two schools have played 149 times, and Lehigh has claimed victory in 67 of those matchups. The university does not own balls representing all of those wins, which explains why only 39 are available in the Hall of Fame. A 40th ball, of course, is expected to be added in 2014. —Tim Hyland

cozy up & connect



Photos that take you back and stories that keep you connected...



LEHIGH THROWBACK PHOTO CONTEST



CONGRATULATIONS!

Larry & Jami Miksiewicz '81

Offensive lineman Larry Miksiewicz '81 and cheerleader Jami (Frank) Miksiewicz '81, pictured here after the 1980 victory over Lafayette, met during their junior year and were married in Packer Memorial Church almost 29 years ago. Larry and Jami sent two of their three children to Lehigh.

This photo submission received the highest number of votes on Facebook during the contest voting period.

LEHIGH UNIVERSITY

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05401

ENDLESS POSSIBILITIES *Buildings B and C at Mountaintop, formerly home to Bethlehem Steel's Homer Research Laboratory, are relics of Bethlehem's industrial past. But Lehigh intends to remake the spaces into vibrant environments for a 21st century learning community. (Photo by Theo Anderson)*

