

SPRING 2014

# acumen

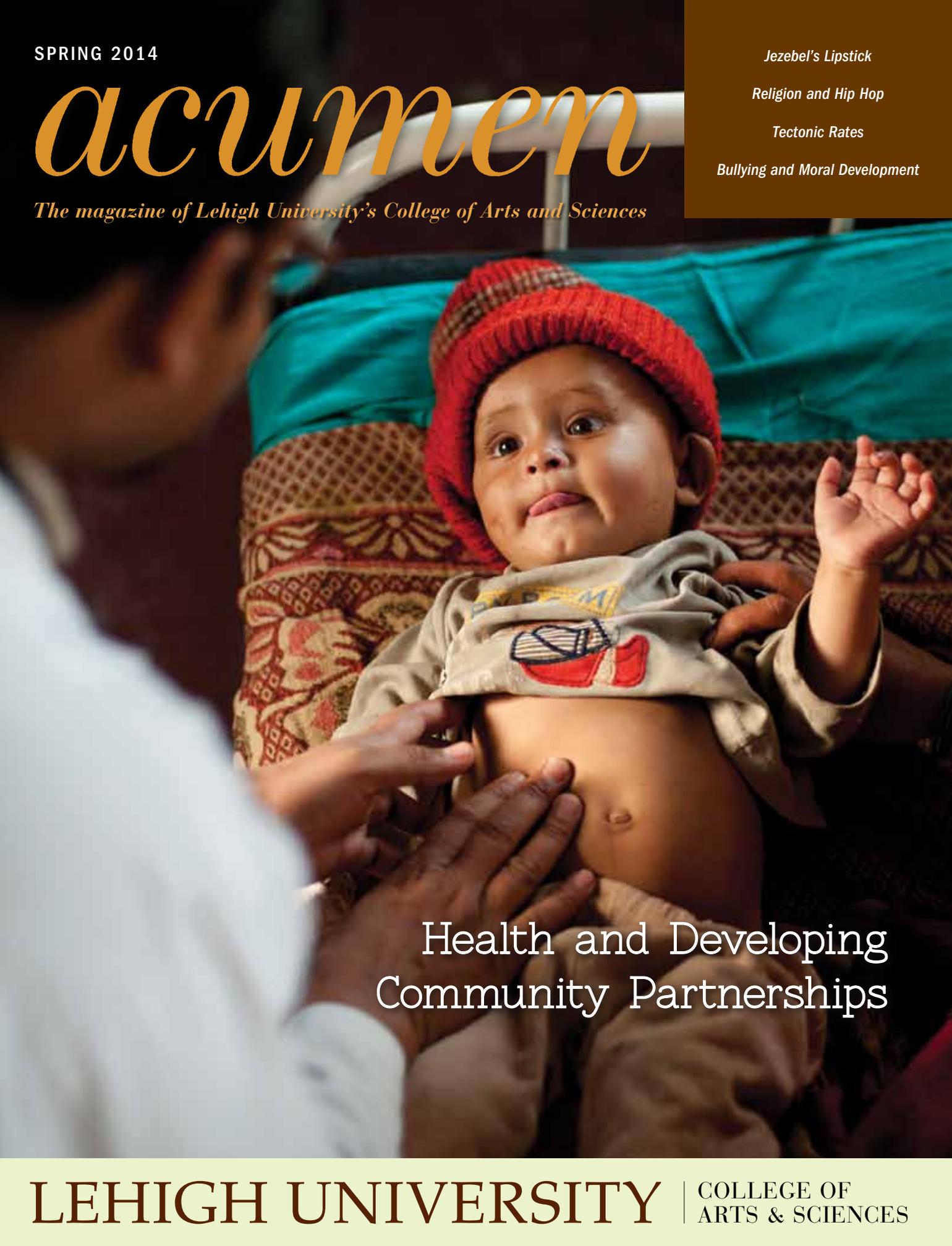
*The magazine of Lehigh University's College of Arts and Sciences*

*Jezebel's Lipstick*

*Religion and Hip Hop*

*Tectonic Rates*

*Bullying and Moral Development*



Health and Developing  
Community Partnerships

# Contents



# acumen

## CONTRIBUTORS

### EDITOR

Robert Nichols

### CAS ADVISORY BOARD

Donald E. Hall, *dean*  
Frank Davis, Diane Hyland,  
Garth Isaak, *associate deans*

### DESIGNER

Kayley LeFaiver

### CONTRIBUTING WRITERS

Jack Croft  
Leslie Feldman  
Geoff Gehman, '89 M.A.  
Richard Laliberte  
Tricia Long '12G  
Robert Nichols  
Esther Shanahan

### PHOTOGRAPHERS

Dan Addison  
Daria Amato  
Douglas Benedict  
Ryan Hulvat  
Christa Neu  
Nathalie Schueller

*Acumen* is published twice a year  
by the College of Arts and Sciences  
at Lehigh University.

### COLLEGE OF ARTS AND SCIENCES

Lehigh University  
9 West Packer Avenue  
Bethlehem, PA 18015  
[www.cas.lehigh.edu](http://www.cas.lehigh.edu)

### READER FEEDBACK:

Please send comments to:  
[acumen@lehigh.edu](mailto:acumen@lehigh.edu)

© 2014 Lehigh University.

 [facebook.com/CAS.Lehigh](https://www.facebook.com/CAS.Lehigh)

 [twitter.com/Lehigh\\_CAS](https://twitter.com/Lehigh_CAS)

## UP FRONT

- 01** MESSAGE FROM THE DEAN  
Leading a Dialogue About Health
- 02** THE ARTS  
Gans Named Weinstock Chair ...  
Sametz at Yaddo ... *Jezebel's Lipstick*
- 04** THE HUMANITIES  
Capturing a Changing South Africa ...  
Heritage Language ... Religion and Hip Hop
- 06** THE NATURAL SCIENCES  
Yeast as Evolutionary Model ...  
Tectonic Rates ... The Numbers Behind  
Curve Space ... Energy Efficiency
- 08** THE SOCIAL SCIENCES  
Storytelling through a New Lens ...  
Battle of Horseshoe Bend ... Corruption  
in the Spanish Empire ... Bullying and  
Moral Development
- 25** NEWS  
Join the Dialogue: College creates  
initiative to spark student conversations

## FEATURES

- 10** A RESEARCHER'S WALK  
By capturing functional limitations from MS  
in a simple test, Myla Goldman '94 helps  
pave the way for better drug testing
- 12** METHOD ACTING  
Community health cluster embraces  
research approach that treats the  
community as an equal
- 16** THE DANCE OF LIFE  
Vassie Ware's research leads toward new  
understandings of how proteins form
- 18** A BETTER UNDERSTANDING  
Melissa Fricke '06 is improving life for  
children in Uganda
- 20** SEEING CLEARLY  
Natalya Surmachevska '14G examines  
the impact of glaucoma in Ghana
- 22** THE ANATOMY OF LAW  
From lab to moot court, Michael A. Epstein  
'75 took the legal path after Lehigh
- 24** PROFILE  
Farm to Fork: Katelyn Armbruster '15  
transforms a garden to help others in need

# Message from the Dean



## Leading a Dialogue About Health

This issue of the magazine explores the topic of health and the impact of health-related scholarship on CAS students and alumni

As we approach the end of another academic year, I continue to be excited and energized by the high level of research, scholarship and creative work generated by faculty and students in the College of Arts and Sciences. In reading the stories contained in this issue, you will see the breadth of work taking place, work that is creating a rich

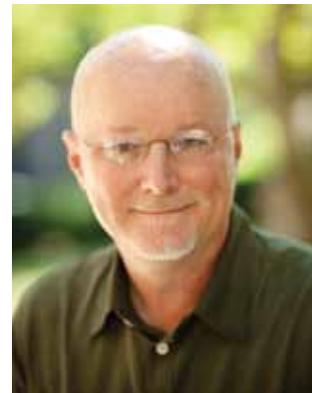
dialogue and bridging disciplines throughout and beyond the college.

Engagement with the community, and programming to provide our students with community-related experiences, is growing and strengthening at Lehigh. Inside this issue of *Acumen* you will discover the university's new community health initiative, a faculty cluster effort that empowers local residents to more actively participate in the full spectrum of research on community issues and has been effective in analyzing and addressing causes of health and health disparities. Our students are out in communities working on health-related issues, whether it is in neighborhoods surrounding campus or a village in Africa. Katelyn Armbruster took her experiences as an environmental sciences and global studies student and translated them into a farm-to-fork program for low income families in south Bethlehem. MA student Natalya Surmachevska traveled to Kumasi, Ghana to study sociological issues surrounding glaucoma treatment in rural areas. Inside you'll also learn of the efforts of alumni such as Myla Goldman '94, whose research is helping those with multiple sclerosis, and Melissa Fricke '06, who is making an impact in Uganda.

The College has been committed to health-related issues for many years. Regardless of the discipline, faculty are exploring ways to improve people's physical and mental health, wherever they may live. Our students receive highly competitive research internships and go on to post-graduate research positions because of the education they receive in the College of Arts and Sciences. We need your help if we are to provide further academic opportunities. Alumni can play an important role in these types of programs. If you would like to support such initiatives in the College, please contact Nancy Stansbery, director of development, at [nas311@lehigh.edu](mailto:nas311@lehigh.edu).

Addressing such complex issues requires us to have conversations about widely divergent approaches and views. Working from this theme, the College of Arts and Sciences has started a broad project—"Dialogue Toward Understanding"—and has initiated a campaign, a "Join the Dialogues" initiative that invites our students into conversations showcasing disparate views on the major issues challenging us today. We encourage our students to speak up, to question, to find solutions that may lie outside the norm, knowing they can do so in a supportive and inclusive environment. I invite you to join the dialogue. Find us on Facebook or follow us on Twitter and stay up to date with all that takes place within the College. Share with us your thoughts. We would love to hear from you.

The process of producing *Acumen* has again been a delightful endeavor. Our students, faculty, and alumni have wonderful stories to share. I hope that, in reading the pages that follow, you enjoy a glimpse of the stories you have made possible. As Lehigh



alumni, you play an important role in shaping a future that looks very bright indeed. Enjoy this issue of *Acumen*. I look forward to hearing your thoughts and comments.

**Donald E. Hall**  
*Herbert and Ann Siegel Dean*





Steven Sametz (left) is creating a choral work in response to the Sandy Hook Elementary killings of December 2012.

fosters creativity,” says Sametz. “It’s an incredible luxury. Your job is to just find your creative impulses. It’s ideal because it frees you from the myriad things you have to do in the course of a day.”

Yaddo is an artists’ community located on a 400-acre estate in Saratoga Springs, N.Y. Its mission is to nurture the creative process by providing an opportunity for artists to work without interruption in a supportive environment. Founded in 1900 by the financier Spencer Trask and his wife, Katrina, herself a poet, the community has hosted such noted writers as Truman Capote and composer Aaron Copland.

Yaddo offers residencies to professional creative artists from all nations and backgrounds working in one or more of the following media: choreography, film, literature, musical composition, painting, performance art, photography, printmaking, sculpture and video. Artists may apply individually or as members of collaborative teams of two or three persons. They are selected by panels of other professional artists without regard to financial means. Residencies last from two weeks to two months and include room, board and studio.

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, one of the country’s premier choral programs. He 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 fall 2013, he was named a Fulbright specialist.

“So many great things have recently come my way: the Sackler Award, being chosen as a Fulbright specialist, the Yaddo residency and the very exciting opportunity to present and direct my choral symphony at Carnegie Hall this coming fall as part of the Lehigh sesquicentennial. All of this work is based on what we create here with our students; it’s a lab for the arts.”

## THEATRE

### *Jezebel’s Lipstick*

The development of any new theatrical production is a collaborative process between actors, the director and the playwright. Darius Omar Williams’ latest professional project found him onstage in Minnesota last November helping to develop a new play.

Williams, assistant professor of theatre and Africana studies, was part of a workshop production of *Jezebel’s Lipstick* at the Pillsbury House and Theatre in Minneapolis. *Jezebel’s Lipstick* is the story of an evangelistic fall from grace of a reverend and his wife and probes the redemptive value of Christian faith. Staging the two-person show with just two days for rehearsals, the production brought Williams together with friend and fellow playwright Renita Martin, and his input helped shape the mainstage production.

“She trusted my director’s eye as well as my choices as a trained actor. In the process of working through some of her edits, she was open to my suggestions in terms of refining some of the writing and cuts,” says Williams.

The mainstage production was part of Pillsbury’s Late Night series, which provides an opportunity for Minnesota- and New York-based artists to present their experimental work, works in progress and finished plays. As a playwright, poet, director and actor, Williams says these kinds of productions support and strengthen his work as a director.

“It’s very important to be open, to allow actors to take risks, to make their own choices on stage. It’s a collaborative effort and, more importantly, it’s about trust—knowing that everything that needs to manifest will manifest, which is essential. In addition to the technical aspect of my craft, I work quite organically, and it’s an organic experience while discovering new dimensions to a character in the moment and also trusting that during that creative imagination, those moments that need to happen will happen as you work through the process, as opposed to mapping out everything that is going to happen on stage. You discover as you go. You trust in your instinct. You trust in spontaneity, knowing that the possibilities are limitless. And of course, you refine as you go.”

For Williams, whose research focuses on indigenous African ritual performance traditions and the intersection of Yoruba and Mississippi Delta Blues tradition, working on projects like *Jezebel’s Lipstick* brings new material and perspectives to the classroom. Martin’s script presents a symbolic re-evaluation of Dr. Martin Luther King Jr.’s nonviolent political principles. It also explores and challenges the Westernized foundation of what constitutes the black church, particularly in the cultural

and spiritual imagination of colonialized African American identity, and such material from emerging playwrights presents new opportunities for discussion in the classroom. At Lehigh, Williams teaches contemporary African American theatre, bringing to the classroom the works of young playwrights such as award-winning playwright Tarell Alvin McCraney, who is best known for his acclaimed trilogy *The Brother/Sister Plays*. Martin’s play was also produced at Lehigh as part of its Martin Luther King Jr. Committee’s year-round programming efforts. Williams notes that the work he does professionally provides new elements to his teaching, whether discussing these new plays in class or working with young artists.

“It’s invigorating for me to continue my work as a professional actor outside the university,” he says. “It’s very important to bring



Darius Omar Williams

that practical experience to the classroom, to always contextualize any historical and/or theoretical material we discuss in class with practical experience. It enhances any classroom discussion for me to provide professional context while also highlighting personal experience as an artist.”



Workers at Grahamstown Mining Company in East Cape, South Africa.

## ENGLISH

### Capturing a Changing South Africa

The late 19th century is an important period in South African history, as the discovery of diamonds and later gold sparked tremendous growth in population and an influx of money to the region. Michael Kramp is investigating the photographic representation of South Africa's development through this Mineral Revolution and the Boer Wars.

Kramp, associate professor of English, examines a period in South Africa starting in 1870, in which the country experienced tremendous industrialization and economic changes. His research focuses on a series of photographic albums and books, many of which were private collections, that illustrate a culture in transition—often a culture in forced transition due to Britain's imperial development—and photography's influence on forming the Apartheid system.

"It overwhelmed and transformed South African culture," says Kramp. "Vast amounts of European money, business interests and emigrants came in, and this pre-modern state became modern very quickly."

The Mineral Revolution modernized diamond, gold and other mining industries to the region that radi-

cally reconfigured the geography, economy, labor relations, transportation structures and emigration patterns of South Africa. The Boer Wars would later decisively establish British economic and imperial interests in the area while shaping modern military tactics. By the end of the Victorian Era, South Africa was the world's largest producer of gold and diamonds and one of Britain's most valuable colonial holdings. Subjects for photographers changed as the modern South African state emerged, says Kramp. Images from the 1880s highlight the wealth of the mining industry and were used as recruitment devices, intended to recruit immigrant labor from Europe and elsewhere, he says.

"At first, they are images of men working hard to successfully mine the land, but then photography changed to more conventional ethnographic images of the British trying to objectify native South African people. As you get closer to the beginning of the Boer Wars, the images begin to portray the military buildup."

Kramp's current project is an extension of his prior work studying 19th-century photography. During his ongoing research in London, he came across the photographic collections, and he

has spent the last six months trying to interpret these various albums, specifically what type of narrative the images create.

Most of the images have never been seen before and certainly they haven't been discussed critically, he adds.

"One of the great challenges to writing about photography is there is so much material," he says. "One of the first things we need to do is make these images available in some sort of critical anthology so more people can write about them. Photographs are so vastly reproduced; the biggest challenge is to make sense of the depth of the images I have and how they were used. There's some important work to be done."

## MODERN LANGUAGES AND LITERATURES

### Heritage Language

Understanding how we use language is crucial to understanding ourselves and others. A heritage language is any language that a speaker learns and uses in his or her home but is not the larger primary language of the larger

outside society. Questions about the fundamental nature of the human mind form one of the last uncharted frontiers of science, and research by linguist Kiri Lee is shedding light on the cultural importance of language.

The co-author of *Constructing the Heritage Language Learner: Knowledge, Power and New Subjectivities*, Lee led a four-year study of students at a nearby Japanese weekend language school. There are about 90 such schools nationally that cater to children of native Japanese speakers. Some children might be staying in the United States for up to five years, but some may be staying longer or permanently. For the latter group, their Japanese becomes "heritage language," and they need a different approach to keep their proficiency with speaking Japanese. Her work challenges the notions about bilingual speakers and where heritage language speakers fit into the traditional views of bilingual speaking. She found that the more proficient a child was in speaking Japanese, the more they viewed themselves as being native speakers of the language.

"We are interested in how the children identify themselves—are



they native speakers or are they heritage language speakers?" says Lee, associate professor of Japanese in the department of modern languages and literatures. "Depending on their proficiency in Japanese, do they have a low self-esteem, and how do they view themselves in this setting?"

Language proficiency is an important component in remaining connected to one's culture. Lee found that throughout the four years they were followed, students' perspectives on their connection to Japan changed as their proficiency and maintenance of their heritage language increased. Although they weren't "native speakers," they could now be labeled as "heritage speakers" and they found their own identities as heritage speakers. In general, when they become more proficient linguistically and culturally, they feel more connected to their Japanese heritage. At the same time, they discover the way to connect this ability to the mainstream society in a positive way. Many of the children studied indicated they gained a sense of community and support from language schools. They are unable to find people like them in mainstream American schools, says Lee.

The field of heritage language education is an emerging field. Historically, heritage language speakers were discussed in the context of bilingual speakers.

"We found the diversity among the heritage language speakers has a strong correlation between their identity and Japanese language proficiency. Some consider themselves heritage language speakers because that's how they communicate with their relatives in Japan. With some, it has to do with identity, because you say, 'I'm Japanese' or 'I have a Japanese heritage.' It's strange to say, 'I can't speak Japanese.'"

The more confidence they gain in their heritage language, the stronger desire they have to actively utilize their skills outside of the



Kiri Lee

heritage language community, says Lee. This is why it is crucial to give appropriate language instruction to them, especially when they are middle and high school ages.

## RELIGION STUDIES

### Religion and Hip Hop

Now 40 years old, hip hop has evolved from being a local art form found on the streets of New York's South Bronx to an international phenomena shaping a generation. The art form has created new paths in fields such as art, fashion and music, and for Monica R. Miller, the intersection where religion meets hip hop is of particular interest.

Miller, assistant professor of religion studies and Africana studies, examines what uses of religion in hip hop culture accomplish for competing human interests. Her work is challenging current approaches between the two, which often limit the study of hip hop to rap music.

"We know hip hop to be bigger than that," she says. The author of *Religion and Hip Hop*, she argues that scholars often analyze religion and hip hop from a sacred versus profane approach.

Along these lines, she also explores why hip hop is often constituted as an illegitimate object of study in academia. "I don't see an oppositional antagonism between hip hop and religion. Greek

mythology is respected, but hip hop culture is often not. Hip hop now has this global edge to it, which forces us to be more expansive, flexible and careful with and about our claims and analyses," she says.

Miller's work is shaping a new area of study in the field of religious studies. She is co-author of a forthcoming reader, *The Religion and Hip Hop Reader*, with Dr. Anthony B. Pinn of Rice University. Another book, *Religion in Hip Hop: Mapping the New Terrain*, is co-authored with Pinn and Houston-based rapper Bernard "Bun B" Freeman.

As part of a larger project examining strategies of identification and cultural change, Miller is a member of Culture on the Edge, an international scholarly collaborative housed at the University of Alabama, Tuscaloosa's department of religious studies that explores common scholarly assump-

As part of the project, the collaborative is helping shape a new book series, *Culture on the Edge: Studies in Identity Formation*, where Miller is editing *Claiming Identity in the Study of Religion: Social and Rhetorical Techniques Examined*, the first volume in the series.

Based on her learnings from the collaborative, Miller is embarking on a new study, titled *New Black Godz*, which examines the manner in which god talk in popular culture often serves as proxy for legitimating societal and group recognition of identities on the "edge." Additionally, along these lines, she's currently interested in exploring how technology and religious rhetoric in popular culture provide alternative mappings and ways of understanding Diaspora, exile, difference, social mobility, and change in identity and culture over time and place.



Reverend Stephen Pogue (above) preaches at the Hip Hop Church in Harlem.



Monica Miller

tions surrounding claims and contradictions to and about identity and the historicity of the origins of identity. The core of the collaborative effort is grounded by the assertion that there is no such thing as identity, only operational acts of identification.

# The Natural Sciences

## BIOLOGICAL SCIENCES

### Yeast as Evolutionary Model

Yeast is a rapidly dividing micro-organism capable of producing 10 generations in a day and can be propagated as either haploids or diploids, both sexually or asexually. Evolutionary biologist Gregory Lang finds yeast to be an excellent instrument to study the molecular basis of evolution.

Evolution occurs when an individual organism experiences spontaneous beneficial mutations in its genome that improve its ability to adapt to its environment. Working with the same yeast used to bake bread, Lang produces thousands of generations



*Culture plates in the laboratory of Gregory Lang.*

rapidly in the laboratory, making it an exceptional medium to study environmental influences on evolution. He hopes to understand the processes that produce out-of-control cell growth, or cancer.

"You want to know, when you sequence a cancer genome and see mutations, how many you expect to be important in the cancer's development," says Lang, assistant professor of biological sciences. "We use DNA sequencing methods to sequence the whole genome to the endpoints and ask how they change at the level

of individual genes, proteins and genomes to whatever selected pressure we put them under. It's trying to move evolution into the lab and make it a very quantitative science, just like genetics."

In his lab, Lang employs robotic technology to deposit yeast dilutions into culture plates, propagating 288 populations at a time. He then freezes these samples at -80



*Gregory Lang*

degrees Celsius, which allows him to create fossil records of his experiments.

"We can go to any population at any time in the past, pull out a sample if we want to, revive it and study it more closely in the lab.

It's a powerful tool for studying evolution, because many times you get to an endpoint and you want to know how you got there. Now we can actually go back in time and trace that history."

Lang's research also provides an important tool in the classroom. Using robotic equipment ensures consistency, which he says is a benefit when working with students.

"Different students can work in the lab on different days. They can come in and run the dilutions. It allows a team of people to do these experiments. And they're seeing evolution in real time."

## EARTH AND ENVIRONMENTAL SCIENCES

### Tectonic Rates

Geologist David Anastasio, together with a team of Lehigh students, traveled last fall to northern Spain to examine rock formations as part of an effort to better understand the time-based variation in tectonic rates and what controls them.

Anastasio, professor and chair of earth and environmental sciences, studies locations where there is evidence of ancient mountain building preserved in sedimentary strata. Employing a novel approach, Anastasio and his students use the record of natural climate changes that reoccur in cycles of 20,000, 40,000 and 100,000 years to date deformation processes. This long-term climate variability, known as Milankovitch cycles, results from variations in Earth's orbit, which controls the incidence of solar energy reaching the Earth and causes environmental change.

The rocks record these changes, and Anastasio and his team measure varying mineralogy. These data allow the researchers to date the syntectonic rock layers with high resolution to reconstruct how

deformation progressed through time. Funded by the National Science Foundation, Anastasio and his team are investigating the causes of rock deformation over time spans of tens to hundreds of thousands of years to determine whether they are related to changes in tectonic boundaries or to changes in the rates of erosion and deposition at the Earth's surface.

"Because the rates of surface processes and tectonic processes are both varying over the same time windows, their cause and effect relationships can be explored," says Anastasio. "Learning about one earthquake event doesn't tell you much about future hazards. I can get a snapshot of deformation every 20,000 or 40,000 years for millions of years in a rock that's hundreds of millions of years old.

*David Anastasio's research is shedding new light on coastal uplift in Spain and reconstruct the speed at which mountains form.*



DOUGLAS BENEDICT, HUBERT STADLER, CORBIS, COURTESY OF DAVID ANASTASIO

The more we're learning about variation in the pace of deformation, the better we get at understanding what triggers the unsteadiness in uplifts and faults that cause earthquakes and builds mountains."

## MATHEMATICS

### The Numbers behind Curved Space

Euclidean geometry, the study of flat space, tells us that between every pair of points there is a unique line segment that is the shortest curve between those two points. The segment between them is the shortest curve that can be drawn between the endpoints. Two-dimensional ideas can be described by drawing on a flat piece of paper, but suppose instead of a flat piece of paper, you have a curved piece of paper. You might have a cylinder, or a sphere. Riemannian geometry, the study of curved spaces, is of particular interest to Robert Neel.

Neel, assistant professor of mathematics, examines the numerous techniques employed in geometric analysis and probability, exploring geometric structures that have some degeneracy. The overarching theme to his work is the use of probabilistic methods, such as Brownian motion, and the techniques apply to many mathematical problems, he says.

"Surfaces in a larger space aren't generally thought of as degenerate, but from a probabilistic standpoint, Brownian motion along the surface is degenerate in a way quite similar to what you see in sub-Riemannian geometry," he says. "I've been focused on developing tools that provide a common

method for several different problems, which is perhaps a little inverted."

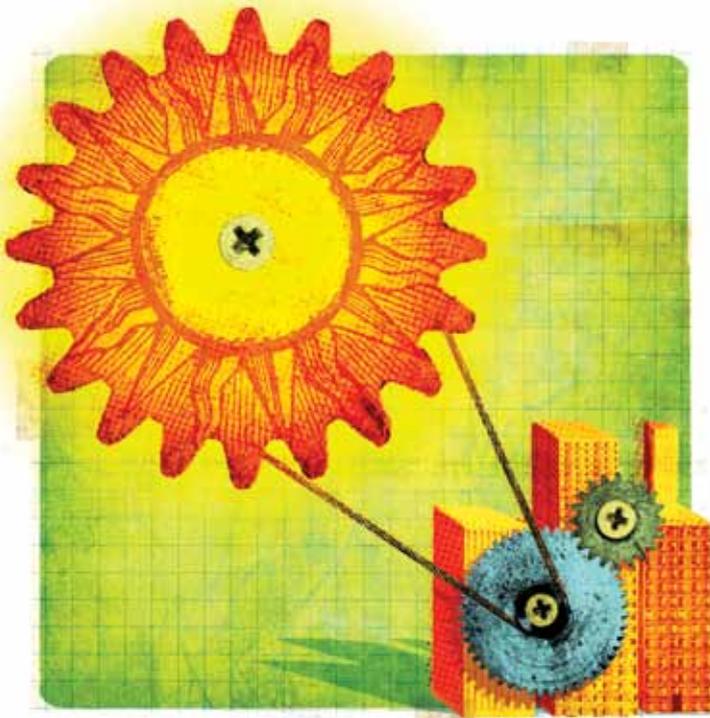
Neel's research into sub-Riemannian geometry, a mathematical discipline with origins in classical mechanics, lies at the center of a collaborative effort with French scientists. The motions of robot arms, or the act of parallel parking a car, employ sub-Riemannian geometry, and Neel's colleagues are taking his computations and utilizing them in practical applications. Sub-Riemannian geometry also has use at a basic level in understanding how human brains process information. The excitation of neurons in the brain mirrors a sub-Riemannian geometric structure and researchers can model some neural processes with a sub-Riemannian setup,



Robert Neel

leaving the door open to countless future projects for Neel.

"I feel like somewhere between geometry and probability, and some analysis, there are a lot of interactions that people certainly have explored, but not as systematically as I think it merits. There's too much left on the table."



## CHEMISTRY

### Energy Efficiency

Solar cells are easy to make, but the technology is inefficient. Converting light into usable electricity is 45 percent efficient, at best. Improving this efficiency lies at the center of research by theoretical chemist Heather Jaeger.

Theoretical chemistry provides analysis and characterization at the level of atoms and molecules by combining innovations in physical chemistry with advances in computer software and mathematical methodology. Jaeger, assistant professor of chemistry, examines the underlying physics involved in solar energy, focusing on the behavior of electrons.

"If we want to study these systems, and we want to predict the behavior of photovoltaics, we need to be able to use these fundamental equations reasonably," says Jaeger. "If you try to compute the many-electron wave functions of something realistic, it's a nonstarter. It's too computationally intensive. Our solution is to go after physically motivated approximations rather than phenomenological models."

Electrons are quantum mechanical; they have wave functions. Jaeger's research delves into quantum

mechanics as she explores electronic processes, how electrons move, how they are driven from one place to another, or from one energy to another. She examines what happens to electrons after light is absorbed and the driving forces behind the generation of electrical power.

"We move into these more complex systems by considering how the environment couples to the electrons and the resulting effects. Then we ask, can we use what we know about the inherent quantum mechanics to engineer more efficient photovoltaics?"

Her "lab" is a room of computers, paired with a high-performance computer cluster. Quantum chemistry calculations require computers equipped with large amounts of memory and connected through a blazing-fast network. Starting with 320 processors on 20 nodes, her team simulates the ultra-fast, femtosecond evolution of electrons. The researchers run thousands of electron trajectories, and each trajectory can be readily visualized, making it an excellent tool for teaching chemistry, says Jaeger.

"It really is a place for students to learn the theory and to apply what they know through computer simulation."



Jeremy Littau

## JOURNALISM

### Storytelling through a New Lens

Google Glass, the new digital eyewear from Google that features a built-in wearable camera, has made its way into the classroom of Jeremy Littau and is changing the way Lehigh journalism majors think about storytelling.

Littau, assistant professor of journalism, is one of 8,000 beta testers selected by Google to test its new wearable media technology. It is a lens-less pair of glasses equipped with a track pad and small screen in the upper right-hand eye. Within this technology is a camera that takes pictures and records video that can be shared socially on sites such as Twitter or Facebook.

Google Glass is not yet available to the public, but the company has sold a limited number to developers and to a group of people who were selected based on their tweets about how they planned to use Glass. Littau is interested in how the technology can influence and enhance journalists' stories and has incorporated Glass into his Multimedia Storytelling course. Throughout the semester, each of his 10 students experimented with the device for 10

days. Students uploaded their experiences as video to the class blog and Tumblr. Each student also produced what Littau calls a "Glassumentary," in which they created a documentary that combined both third-person and first-person narrative.

"So much of what we do in journalism is pointing the camera at something. Everything you witness in journalistic video or documentary video is through a third-person perspective, but Glass affords us to see through other people's eyes. Stories can become more compelling with a shift to first-person mode."

Glass gives the viewer a different perspective and could be a good teaching tool, Littau says. "The perspective is unique. Rather than me telling you about something, you can see it. Students are thinking about stories in the first person, which to me is an interesting place for them to be journalistically, because just thinking that way is going to have an effect on their journalistic imagination."

"It has the potential to change our journalistic inquiry, and I'm very interested in perspective-shifting because I think it will make us better storytellers."

## ANTHROPOLOGY

### Battle of Horseshoe Bend

Where exactly was the Red Stick barricade located?

It's a common question for visitors to Horseshoe Bend National Military Park in Alabama. The site of the single deadliest battle for Native Americans involved with American forces, the location of the Red Stick Creek fortification has been unclear until recent work involving archeologist Cameron Wesson.

As part of a National Park Service project commemorating the 1814 Battle of Horseshoe Bend, Wesson and his colleagues have been searching for the location of a Native American fortification.

Horseshoe Bend is a forgotten aspect of the War of 1812 and the first Creek War, but an estimated 860 Native American men, women and children were killed in battle.

The Creek built a breastwork, a military fortification, to protect their village from American forces led by Andrew Jackson. Its location was a mystery until last summer when Wesson and colleagues from the Southeast Archeological Center and Auburn University used non-invasive archaeological techniques, including ground-penetrating radar, to examine the area. Wesson also employed a gradiometer for remote sensing, which allows researchers to see beneath the Earth's surface without excavating large amounts of soil, and having a minimal impact, to help determine the fortification's location. Accompanying him were students participating in Lehigh's annual field school.

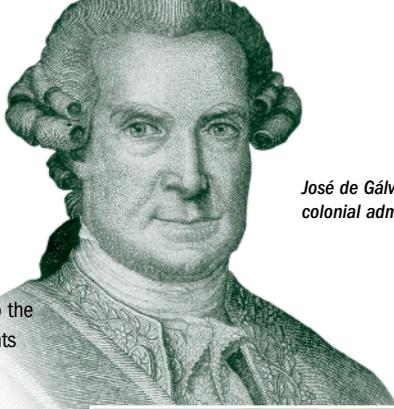
"These are monumental events in American history, and



*The Battle of Horseshoe Bend was the culminating event of the Creek War of 1813-1814.*

the students were deeply involved in our work," says Wesson, Lucy G. Moses Professor of Anthropology in the department of sociology and anthropology. "Students learn best by doing, so this is the best way to learn how to do archaeology. These

**INTERESTED IN LEARNING MORE?**  
See what is happening in Jeremy Littau's Multimedia Storytelling course at <http://j230glass.blogspot.com> or <http://100daysthroughglass.tumblr.com>.



*José de Gálvez was a Spanish attorney, colonial administrator, and a statesman.*

are real archaeological sites, so the stakes are high, and the students take the work very seriously.”

In the spring of 2014, the National Park Service will hold festivities commemorating the battle, including Native Americans whose ancestors fought there, as well as Euro-Americans whose ancestors fought with Jackson. The Horseshoe Bend Military Park has a commitment to protect the resources as adequately as possible. Wesson’s work also helps ensure proper management of the property in the future.

## HISTORY

### Corruption in the Spanish Empire

The Bourbon Reforms of the late 18th century were a set of legislative and economic reforms intended to re-establish the power of the Spanish crown during a period of empire modernization and expansion. The work and influence of José de Gálvez, a prime figure behind the reforms, is the center of research by Bárbara Zepeda Cortés.

Gálvez, visitor-general of New Spain and then head of the Spanish colonial office, was the principal state agent behind Spain’s efforts to modernize its colonial policies. Yet, while railing against corruption in the Spanish American bureaucracy, he became renowned for appointing family members, friends and people from his hometown to offices in the colonial administration. Zepeda Cortés, assistant professor of history, argues that nepotism and patronage became necessary instruments of governance for Gálvez in a political setting in which many on both sides of the ocean stood against reform. While in Mexico, he complained of corruption at the local level, but at the same time he was trying to reform the system, he became the very thing he combated.



*Bárbara Zepeda Cortés*

Corruption was a curse and a blessing for him, says Zepeda Cortés.

“It’s contradictory. On one hand, you are trying to build stronger state institutions, but at the same time, you’re manipulating them to advance reform. In those moments, corruption goes up because the men in charge have more opportunities to line their pockets or put members of their family in power.”

Through Gálvez’s efforts, imperial trade and mining production expanded and more revenue found its way into royal coffers, yet his influence advanced the fortunes of his brother, Matías, and his nephew, Bernardo, both of whom became viceroys of New Spain.

“He had this contradiction in his own life,” says Zepeda Cortés. “How can you be so ambitious and expand the empire’s reach without the help and support of the people you trust? Reforms involved political strife. There was so much opposition, but in order to fight it, you have to create your own group. He squeezed the system like nobody had done before.”

## PSYCHOLOGY

### Bullying and Moral Development

While bullying is frequently witnessed in school, little is known about how adolescents communicate with their parents about the victimization they witness and experience. In an ongoing research project, Debbie Laible examines how parents and

adolescents talk about the moral dilemmas that youths face when observing and encountering bullying.

As part of a collaborative effort with a colleague at the University of Missouri, Laible examines the types of moral messages parents are sending to adolescents in these conversations and their influence on adolescent moral development.

One goal of this research is to examine how parents talk about these moral dilemmas with adolescents and how it translates to children’s empathetic development. Conversations about moral issues likely make children aware of the needs of others and encourage children to reflect upon the moral messages that parents transmit in these conversations.

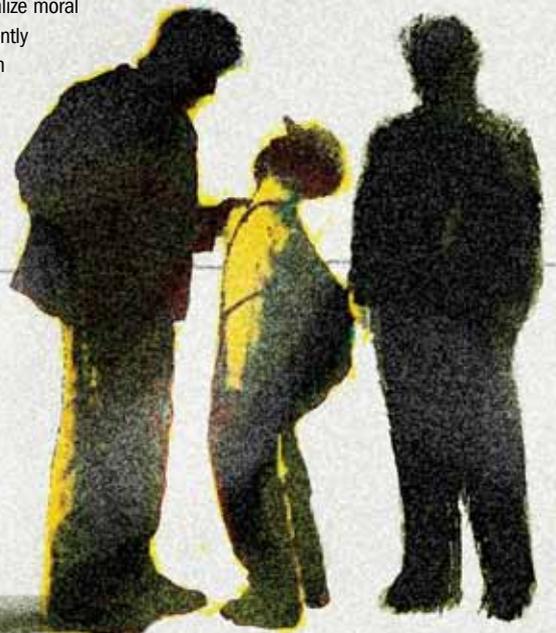
The second goal is to study how parents and adolescents talk differently about victims of bullying who differ from the adolescents. Thus, 100 adolescents and mothers discussed two video clips of bullying, including one that involves an adolescent who is similar to the target adolescent studied (in terms of social groups) and one who is different than the adolescent. The goal of this research is to examine how parents socialize moral values differently depending on

the degree to which mothers and adolescents identify with each victim.

“We’re looking at how parents and adolescents talk about the bullying differently depending on whether it’s an ingroup or outgroup member and how that predicts whether they are going to stand up for a kid being bullied,” she says.

Laible and her colleagues are now expanding the age of children studied and are working with researchers at Arizona State University to understand the factors involved in the development of racial and gender attitudes and to explore how these attitudes influence children’s prosocial behavior toward individuals who are different from them. The plan is to obtain funding to study 7-year-olds for three years to examine the factors involved in socializing moral behavior toward a diverse group of peers.

The goal of this line of work is to help researchers and parents understand the types of strategies that parents can use to encourage their children to do the right thing when they witness bullying and encounter similar moral dilemmas (especially those involving outgroup members).



# a researcher's walk

**By capturing functional limitations from MS in a simple test, Myla Goldman '94 helps pave the way for better drug testing** ▶ Twenty-five feet: It's the unspooled length of a construction worker's tape measure or the distance between the bumpers on a midsize RV. It's also a span that Myla Goldman '94 has marked off in a hallway at the University of Virginia (UVA), where she is assistant professor of neurology.

by RICHARD LALIBERTE

The simple act of walking those 25 feet is at the heart of Goldman's research establishing reliable measures of function for people with multiple sclerosis (MS). "My contribution has been to improve the understanding of what is clinically significant in a timed 25-foot walk," Goldman says. "On the surface, the difference between walking it in six seconds or eight may not seem like a big deal. But when you look at what else people with MS are doing or not doing, those two seconds become very important."

As a medical test, the timed 25-foot walk, or T25FW, is remarkably low-tech and inexpensive: Say "go," and a patient walks the distance as fast as possible. Demonstrating that the T25FW reveals a great deal about limitations associated with MS—an autoimmune disease that attacks the central nervous system—is a critical step in evaluating drugs to treat the disabling condition. "Prior to the 1990s, there were no drugs for MS," Goldman says. "Since then, there have been 10 FDA-approved therapies—a nearly vertical climb. So there's a lot of interest in how to effectively measure their impact."

## FIRST STEPS

Goldman's interest in neuroscience was already evident when she enrolled at Lehigh as an undergraduate in 1990. "At the time, few universities had programs, but Lehigh had a well-established program in behavioral neuroscience," she says. Coming from a lower-income, single-parent household in the Chicago area, she also benefitted from Lehigh's financial aid. "Generous assistance allowed me to be among the first generation of women in my family to go to college," she says.

While working in the lab of Professor Jill Schneider studying how neuroendocrine signaling influences the estrous cycle in a hamster model, Goldman sought a summer research scholarship and met with John Nyby, professor of biological sciences. He recognized her as a good candidate for medical school, which she hadn't considered. After completing her Bachelor of Arts degree, she stayed on as a technician in Schneider's lab while applying for med school.

Her four-plus years of lab work at Lehigh taught Goldman how to think critically, execute research protocols and communicate findings, with some of her research published in peer-reviewed journals. On a personal level, working with Schneider showed her how to successfully balance professional and family life. "The mentoring I experienced at Lehigh really changed the trajectory of my life," Goldman says.

Through MD training at Rush Medical College in Chicago, residency in neurology at UVA and, especially, fellowship training at the Cleveland Clinic, she honed her focus on multiple sclerosis. With the benefit of a National MS Society training grant at Cleveland, she began to ponder the real-world implications of what happens to MS patients during timed walking.

Her work provided initial data that in 2009 led the National Institute of Neurological Disorders and Stroke (NINDS) to give her a five-year grant called the K23



DAN ADDISON, MARIE NOSKOWSKI/ISTOCKPHOTO.COM

Mentored Patient-Oriented Research Career Development Award.

“That was a significant step for me,” says Goldman, who took a tenure-track position at UVA in 2006. “It funded most of the research I’ve done since becoming a UVA faculty member.”

## TRACKING EFFECTS

It’s not enough to know that a drug might improve a manifestation of MS such as the amount of disordered plaque forming on nerve fibers.

“A better outcome measure demonstrates a real-world impact on people’s lives,” Goldman says. People with MS almost by definition suffer loss of mobility. But if one person is slightly less disabled than another, how does that translate to what they experience every day?

For insight into that question, Goldman surveyed the patients she had hoofing her timed 25-foot walk down the hallway. In addition to clocking their T25FW speed, she asked about an array of everyday activities of daily living, such as whether they were employed or if they could do their own laundry.

In a study published in the Oct. 30, 2013, issue of *Neurology*, she and her colleagues found that doing the T25FW in eight seconds or longer was associated with using a walker, being unable to do instrumental activities of daily living, and collecting government health care and Supplemental Security Income. A slightly faster—and therefore higher-functioning—speed between six and eight seconds was associated with job change, walking with a cane and needing “some help” with instrumental activities of daily living. Both groups had functional limitations to some degree. But Goldman imagines their differences in the context of clinical trials—for example, if one group of six-minute walkers got a drug and kept the same pace over time while a second group got a placebo and slowed to eight minutes due to increased disability.

“What that would tell you is that the drug potentially kept people employed and more functionally independent,” she says.

The research also linked T25FW performance with 12 of 13 other measures of disease severity. “Previously, it wasn’t clear how much walking you needed in order to capture that information,” Goldman says. “Did you have to follow people for a week with accelerometers?” Her research found that a gambol down a

hallway distills what happens in more prolonged walking.

Published by the American Academy of Neurology, the study marked another professional milestone for Goldman: The academy highlighted it in a press release, and it received national coverage. Her research in walking tests has helped to develop two clinical trials for existing drugs that slow disease progression.

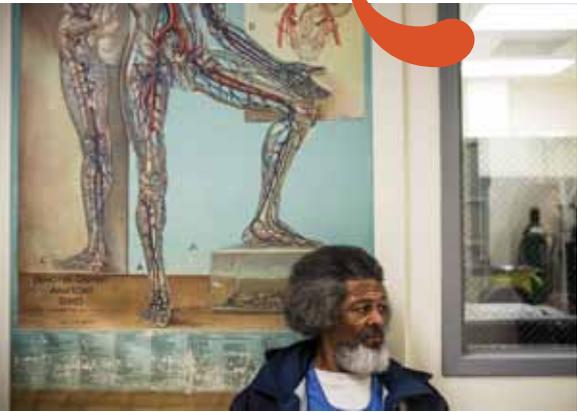
“The holy grail is neurorestorative therapies that help people get better,” she says. “If a treatment outcome showed that someone who once walked nine seconds started walking five, that would be huge.”

With her five-year NINDS grant expiring, Goldman is now looking into new funding for further research, including a growing interest in how comorbidities, such as prediabetes and weight gain, clinically relate to MS. She’s also pursuing her other major goals—like being a mother to her 5-year-old son and 2-year-old daughter.

“As I learned at Lehigh from Jill (Schneider) and others, it’s possible to be a mom, a scientist and a physician,” she says. “It’s important to realize that with the right support, you can do all those things successfully.” ●

**“The holy grail is neurorestorative therapies that help people get better. If a treatment outcome showed that someone who once walked nine seconds started walking five, that would be huge.”**

# Method



Community  
Health Cluster  
Embraces  
Research  
Approach  
That Treats the  
Community as  
an Equal Partner

by Jack Croft

LIKE MANY BRILLIANT CONCEPTS, Community-Based Participatory Research, or CBPR, is both revolutionary and simple. Just ask Chris Burke, assistant professor of psychology and one of the faculty leads of Lehigh's new Community Health Cluster, which will rely heavily on the fast-growing research methodology.

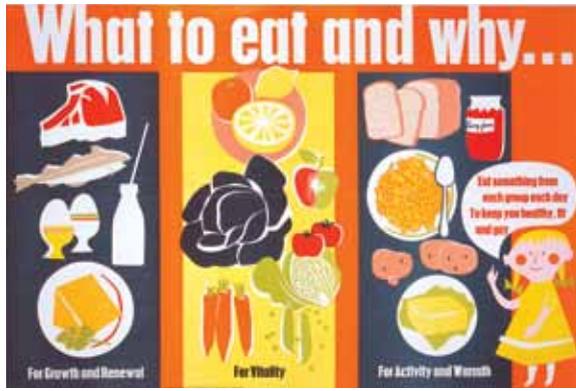
"What got me really excited was hearing about CBPR for the first time," says Burke, a social psychologist by training who also has a background in quantitative psychology. "It was one of those things where it was surprising, but it was also surprising that it was surprising."

The key word is "participatory." The idea is to involve members of the community in every step of the research: from defining the problem, to developing the questions to ask, to collecting and analyzing the data, to deciding on the appropriate intervention to solve the problem. It's a bottom-up approach, compared to the typical top-down model of most research projects.

"At first I thought, that's revolutionary. Nobody does that," Burke recalls. "But at the same time, it was like, of course, that's how it would work best."

As Judith Lasker, the NEH Distinguished Professor of Sociology and another member of the faculty core, puts it, "It's meant to be a two-way street. It's not just the community buying into what we want. It's our buying into what they want and need and making it a collaborative venture."

The commitment to CBPR is one of the distinguishing features of Lehigh's latest interdisciplinary faculty "cluster," which will add three new faculty members to a "nucleus" of five current scholars. As part of its commitment to address complex issues with broad-based interdisciplinary approaches, Lehigh is funding small groups of faculty "clustered" around an intellectual theme, interest or problem.



# Acting



KAREN KASMAUSKY/CORBIS; TIM THOMPSON/CORBIS; HERITAGE IMAGES/CORBIS; KAREN KASMAUSKY/CORBIS; JOHN GRESS/CORBIS

Donald E. Hall, the Herbert J. and Ann L. Siegel Dean of the College of Arts and Sciences, serves as lead dean for the new cluster, as four of the core faculty members are in the College of Arts and Sciences. In addition to Burke and Lasker, the group also includes Breana Holland, associate professor of political science and the Environmental Initiative, and Kelly Austin, assistant professor of sociology. The core group is rounded out by George White, professor in the College of Education's educational leadership program and director of the Center for Developing Urban Educational Leaders (CDUEL).

Searches began in the fall 2013 semester for two new faculty hires to start work this coming fall: an epidemiologist in the department of sociology and anthropology, who brings expertise in designing studies to determine how and why disease is distributed throughout a community, and a psychologist focused on health with expertise in quantitative methods.

Lasker says the epidemiology position is "a core piece of any kind of public health program" that "has been on our wish list for a long

time." And Burke says bringing in a psychologist with a "sophisticated understanding of quantitative methods" will help the cluster "ask sophisticated questions."

"I always say that quantitative methods are like keys to opening doors," Burke says.

Following the initial two faculty hires this year, a search will commence in the fall for an experienced researcher with expertise in CBPR who will be brought into the College of Education at an associate or full professor level starting in the fall of 2015.

## A NOVEL APPROACH

The cluster approach builds on areas where Lehigh has existing expertise, and that is certainly the case with the Community Health Cluster. While Lehigh offered a health and human development minor, the university's focus on health received a major boost when it was designated as one of the three strategic areas of investment in the university's strategic plan under President Alice P. Gast.

“Some of these issues are very salient to the health and hospital industry in our region, and having partners nearby who can collaborate on the kinds of projects they want to do, that’s a plus for everybody.”



It gained momentum with the creation of the Health, Medicine and Society (HMS) minor in 2008, under the direction of Beth Dolan, and the hiring of Dena Davis in 2011 as Lehigh’s first Presidential Endowed Chair in Health in the social sciences and humanities. At the same time, student interest in public health showed a noticeable increase, mirroring a national trend.

Internal discussions, aided by outside experts, on how to meet the growing demand for public health training led to the focus on community health and CBPR. “The process,” says Holland, “was very organic, which is promising.”

The diverse interests of the core faculty members provide an intriguing glimpse into what the future of the cluster may hold as it works hand in hand with members of the community to identify and tackle public health issues.

“I think the expertise that our team brings will help shape the kind of issues that we can address,” says Burke, whose research has focused primarily on stress, looking at how people cope with it and the impact of social support systems. “But they also have to be things the community finds to be important. So it’s finding that intersection that will really determine what we focus on.”

Lasker has taught the Medicine and Society course at Lehigh for three decades. It was one of the few health courses offered at Lehigh when she arrived on campus in 1981 and today is a core course in the Health, Medicine and Society program. For years, Lasker incorporated a service component into the course, including having students help with a local flu clinic and conduct surveys for New Bethany Ministries. She also has helped community health agencies with research needs, particularly through the Social Science Research Center.

Austin’s research has primarily focused on global health issues, particularly communicable diseases—HIV, tuberculosis and malaria—and how the health system addresses them in sub-Saharan Africa.

“A lot of my research prior to the work I’m starting to do through the cluster has been macro-comparative, large-scale, using large data sets from organizations such as the World Health Organization or the World Bank,” says Austin, who came to Lehigh in 2012. “So I’m really excited to be able to work with the cluster to help me develop more community health-based skills.”

Holland, meanwhile, has been conducting research focused on the link between outdoor air pollution and asthma among school children in the local community. Holland sees the CBPR approach as being essential to reversing the high rates of asthma.

“If people don’t feel comfortable with us, if we can’t even go into the home and identify the asthma triggers, we’re never going to get to a point where we figure out what the right solution is that solves the problem,” she says.

Her asthma research project wound up being a central part of the Community Health Cluster proposal.



“It was an area where there was a clear need for additional faculty expertise and promising research that could be carried out, which fit precisely what we were looking for,” Holland says. “We wanted to use air pollution problems as an existing area of faculty research that exemplifies why we needed the cluster, and it worked out especially well for that purpose.”

## COMMUNITY SERVICE

In recent years, White and CDUEL have partnered with the Bethlehem Area School District and the United Way of the Greater Lehigh Valley to create a University Assisted Community School at Broughal Middle School on the south side. CDUEL manages and evaluates the after-school programs that focus on improving academic preparation of the students. The program is also dedicated to improving the quality of parent education and mentoring for students as they progress through their middle school years.

Holland also credits the South Side Initiative—which brings together Lehigh faculty, students and staff with members of the South Side community to share knowledge, foster democracy and make the city a better place to live—with laying some of the groundwork for the community-based and participatory focus of the cluster by doing positive work in the community and helping to spur her research there.

And Lasker cites the long-running Community Fellows program, which pairs master’s degree students with community agencies, as another example of the good work on which the cluster can build.



“You give the community skills,” Austin says. “When you train people to collect data, when you train community members to analyze data or to promote and carry out the interventions—you’re teaching real people real skills that will hopefully go beyond the research project and

perhaps propel that individual or that community into a better social status than they would have had if they hadn’t had the opportunity to learn those skills.”

At the same time, Austin says, “When you’re able to work with community members to help you gather the data, you actually can get much, much more reliable answers and results from the people you are studying, as they are often more comfortable talking to a member of their community, rather than an outside researcher.”

And as an added benefit, she says, interventions developed as a result of CBPR “tend to be much more self-sustaining, with much better success rates over the long term. And I think that’s really important for health, that long-term thinking.”

“To me, it’s creating opportunities for students to really be engaged in institutional change, right here, and get some experience doing that.”

## DEVELOPING RELATIONSHIPS

The success of the Community Health Cluster will largely depend on how successful it is in building trust in a community where tensions still exist with the affluent university in its midst.

“It’s definitely an uphill battle,” Burke acknowledges. “From everybody we’ve talked to about engaging in this kind of research, building that trust relationship is probably the hardest aspect of the research process. A lot of our efforts over the beginning stages in this process are really going to be about building that kind of trust.”

“Even just getting in the door is going to be a real challenge, but one we’re prepared to make because we realize that this is something that’s really important to do because not only do we live in a community that really could benefit from this kind of endeavor, but Lehigh can benefit a lot from it, too.”

And there are other potential benefits and partnerships. The Affordable Care Act requires nonprofit hospitals to perform community health needs assessments every three years while also shifting the emphasis—and payment structure—for health care providers to prevention.

“Some of these issues are very salient to the health and hospital industry in our region, and having partners nearby who can collaborate on the kinds of projects they want to do, that’s a plus for everybody,” Lasker says.

Holland, who brings a public policy perspective to the team, says the cluster’s work will offer excellent opportunities for students to get hands-on experience and gain some understanding of what it takes to make change happen.

“To me, it’s creating opportunities for students to really be engaged in institutional change, right here, and get some experience doing that,” Holland says. “And it’s my hope that will help them get jobs and give them the experience they need to do really well in those jobs.”

Burke agrees: “I think getting students out there, really seeing the kinds of experiences people have and working with people to make things better, I think those are really invaluable experiences that they can then carry forward to wherever life takes them after Lehigh.” ●



“A lot of the driving force behind this cluster, as I understand it, is to really try to shift the focus to making sure the kinds of things our faculty and students do are driven by the needs of the community and serve the community in a way that people who are not at Lehigh find valuable,” Lasker says.

Adds Holland: “Everybody in the cluster is deeply committed to the CBPR methodology. Everybody’s committed to getting the community involved in defining the problems we’re doing research on, participating in actual data collection and the interpretation of results.”

As a researcher who has worked with data a lot, Austin says the CBPR methodology is a win-win for the community and the university.

# The Dance of Life

Vassie Ware's explorations of the inner workings of ribosomes leads toward new understandings of how proteins form

Let's say you're waltzing across a ballroom with a partner you've known for a long time. The two of you are comfortable and adroit, and you glide across the floor with precision and ease. There's just one problem: Unlike you, your partner is a bumbler at other dances. So during a break with Partner A, along comes Partner B, who—paired with you—is fantastic at the tango. In both cases, you're engaged in dancing. But with each partner, you're doing something very different.

Vassie Ware, professor of molecular biology in the department of biological sciences, is fond of using illustrations like this to convey concepts to her students. In this case she's not really talking about waltzing versus tangoing (though she did once take a ballroom class). Instead, she's alluding to curious discoveries about the molecular dances of ribosomes.

Ribosomes are at the heart of life, providing the molecular machinery that synthesizes proteins in all living cells.

"We clearly know that all ribosomes have the goal or function of making protein," Ware says. "Does that mean all ribosomes are the same? The answer is no."

Certain major differences between ribosomes are not controversial. "Some components of ribosomes in bacteria are very different than those typical of animals and humans," Ware says. In fact, we exploit those differences with antibiotics designed to kill bacteria. "But open any biology textbook to the section on translation [the process by which ribosomes synthesize proteins through gene expression and the action of various forms of RNA] and none of them give much information on structural or behavioral differences between ribosomes in eukaryotic organisms," she says. "The idea that human or animal ribosomes might be specialized or behave differently from each other is not dogma now. But that's my area, and that's where we're headed—to understand such differences."

In short, to use her analogy, she's working to show that ribosomes that normally only seem to waltz may, under certain circumstances, unexpectedly start to tango.

by Richard Laliberte



VIROLOGY LAB  
HAS BEEN GENEROUSLY PROVIDED  
BY MEMBERS OF  
THE 198 CLASS GIFT PROGRAM

## Deeper Mysteries

Ware's interest in ribosomal protein-making machinery stems from a long-standing fascination with how things work. "Even as a youngster, I would take mechanical devices apart step by step and try to figure out how they functioned on the inside," she says. Her formative educational experiences weren't always encouraging. "I liked biology but had a high school teacher who presented it as if there were no more interesting questions left to answer," she says. "I would think things like, 'If we've solved all the riddles, how come people still get cancer?'" Instead of killing Ware's interest, the teacher unwittingly spurred her on. "Biology could not possibly be that dull," Ware decided.

As an undergraduate at Brown University, she encountered mentors who made biology fascinating and exciting. One was Susan Gerbi, whose lab researches (among other things) ribosomal RNAs. "People at Brown encouraged me to get involved with research as an undergraduate and apply to grad school," Ware recalls. She went on to Yale, where she worked in reproductive biology and developed an interest in how hormones affect follicle development in ovaries. That led to questions about gene expression, which in turn steered Ware toward the process of making proteins with ribosomes, an interest she brought with her to Lehigh in 1985.

Knowing more about that process could foster development of more effective pharmaceuticals, as some drugs beyond antibiotics selectively target ribosomes. What's more, certain genetic diseases such as a bone marrow disorder known as Diamond-Blackfan anemia seem related to ribosomal defects. More broadly, understanding ribosomes at the molecular level could shed light on fundamental mysteries of genetics. "The diversity of proteins—hundreds of thousands of them—is enormous," Ware says. "Yet the Human Genome Project found only 28,000 genes—far fewer than expected. So how do we get all that diversity?"

It could be that ribosomal proteins have yet-to-be-determined differences or functions beyond what's known or expected. "We're now working on protein components of the ribosome that in one case function as part of the ribosome and in other cases are totally not associated with the ribosome and doing something else," Ware says. "It's like the difference in the partner you're dancing with."

## Functional Differences

Much of this work has focused on studies of fruit flies and a ribosomal protein family known as rpl22e. Two proteins in the family—rpl22 and rpl22-like—are duplicates, or paralogues. Such duplication is not uncommon, Ware says. But having two proteins that can do the same thing takes pressure off at least one of them because it has a backup, potentially freeing it to perform other functions. Curiously, rpl22-like isn't expressed everywhere in the fly like its paralogue is—it only functions in the testis and the eye. "Why is it there and what is it doing?" Ware wondered. "Do the two proteins have different functions?"

Research suggests they might. "We've done cool experiments where, when we knock out rpl22 in the fly, it's lethal," Ware says. Manipulated rpl22-like can take over and save the organism. "There's redundancy, but rescued organisms are also deficient in two ways," Ware says: "They die earlier and in some cases develop tumors."



So there's something different between the proteins." Other research shows that when paired with different chemical groups, rpl22 exhibits functional traits outside of the ribosome that are unrelated to protein synthesis. "We're trying to uncover what that non-ribosomal function is for rpl22 and the significance of having two populations in particular cells," Ware says.

Ware has also developed an interest in bacteriophages, viral units that infect and kill bacteria. She runs Lehigh's participation in a program sponsored by the Howard Hughes Medical Institute (HHMI) known as SEA-PHAGES. It's part of the Science Education Alliance, which exposes undergraduates at colleges and universities across the country to research-based curricula and scientific discovery early in their academic careers. In the PHAGES (Phage Hunters Advancing Genomics and Evolutionary Science) program, students collaborate with other labs to isolate new phages, sequence their DNA, carry out bioinformatics and annotate entries that are published in a database called GenBank. "It's real discovery," Ware says. "Students love it." Once annotated, newly discovered phages present interesting questions about what their genes and proteins do. "Our program is at the point where we're asking those questions now, and amazing things are coming out of it," Ware says. "It's a treasure trove of new developments."

With Neal Simon, professor of biological sciences, Ware co-directs another HHMI-sponsored program in which two four-year grants have allowed students to take part in a multidisciplinary program called the Biosystems Dynamics Summer Institute.



*Fruit flies in the laboratory of Vassie Ware. Ware and her team use flies to study the gene ribosomal protein rpl22e.*

Participants engage with faculty from a variety of disciplines to explore life science research in a 10-week summer program. HHMI has also made possible a virtual class called Bioscience in the 21st Century, in which lecturers from a variety of departments offer cross-disciplinary perspectives on fundamental problems in bioscience.

"All these efforts and contributions transcend me," Ware says. "It's about bringing together different groups of students and faculty to interact and explore important, interesting questions"—and better understand the dance of life. ●



# A BETTER UNDERSTANDING

Six months after graduating from Lehigh, Melissa Fricke '06 began teaching in an African school without doors, windows or seats. Every day students carried benches to class. On rainy days they moved the benches to avoid leaks that turned the floor into a mud carpet.

Fricke vowed to bring educational amenities to Africa that many Americans consider necessities. Nineteen months later, she helped open the first modern school in a Ugandan village, built largely with donations from her hometown. Since then her organization, Better Understanding of Life in Africa (BULA), has radically improved life for youngsters inside and outside the classroom. Fricke's good deeds have ranged from reuniting orphaned and vulnerable students with their families to taking over a children's home from an allegedly abusive director.

It's been a whirlwind eight-plus years for Fricke, who runs BULA while managing housing issues for a community-action organization outside Boston. During this time she's evolved from a volunteer to a role model for inspiring volunteers. To quote a BULA colleague, she is "a quiet storm."

For years Fricke was just quiet. In high school she was more active in the Girl Scouts than in classes. At Lehigh she was most assertive as a field hockey player. Yet Chelsea Erdmanis '06, her teammate and roommate, recognized a budding leader. Fricke, she recalls, ran quickly, advised younger players, dedicated herself completely to sport and squad.

Fricke's course shifted in the fall of 2005 during the course Ethical Dilemmas in World

**Melissa Fricke '06 is  
improving life for  
children in Uganda**



**by Geoff Gehman '89 M.A.**



Politics. True to her laid-back nature, she let peers direct discussions about poverty, torture and genocide. But her conscience percolated.

"My heart just jumped out of my chest," she says.

Fricke's heart cartwheeled as she studied Africa's educational crisis. The international

affairs/French major suffered for students handicapped by hunger, ravaged by HIV/AIDS, killed while fighting civil wars. The epidemic prompted her to volunteer to teach in Uganda, to discover "what should and could be done about poverty."

In November 2006, Fricke arrived in Gganda, a village seven miles from Kampala, Uganda's capital. Disturbed by the shell of a school, she began planning dramatic changes, moving up the ladder from chairs to doors to a new building. She started her campaign by testing the fundraising waters in her hometown of Blue Point, N.Y. She contacted high school classmates; her father surveyed neighbors, parishioners and clients of his tombstone business.

Fellow Long Islanders promised to support Fricke's African project with "a soaring yes." The first benefit, a dodge ball tournament, took place on her third day back in Blue Point after four months in Gganda. The event, which raised more than \$1,300, marked her debut as a public speaker. Back then, she admits, addressing a large crowd was scarier than funding a new school in a poor Ugandan village.

In April 2007 Fricke founded BULA to manage her dream. That December she returned to Gganda to lobby to build a school on property owned by the Roman Catholic church. Two years earlier she had studied the ethics of world politics; now she received a crash course in foreign bureaucracy and gender bias. Fricke was frustrated by meetings that started four hours late or not at all. She was sidetracked by male officials who doubted that a new school for black Africans could be

*St. Kizito Primary School is privately run by the Roman Catholic church; BULA helps support it and the orphanage. In 2009, the United Nations recognized the school's use of environmentally sustainable bricks as a model others might use.*



PHOTOS COURTESY OF MELISSA FRICKE/BULA

built by a white American woman. When she introduced them to her BULA partner, a male volunteer at the local orphanage, they thought he was the leader of her project.

Fricke won over skeptics with tenacious humility and visionary common sense. Her trump card was a sensible blueprint from Tom Harrison, an English architect she met through a friend in Kampala. He designed a school with eight classrooms, energy generated by solar panels and running water supplied by a 30,000-gallon underground tank. The entire building would contain bricks made on site with excavated earth, an inspired idea later endorsed by the United Nations.

Harrison was part of Fricke's own United Nations. On Long Island she raised \$70,000 through cocktail parties and cookbook sales. In Uganda she helped build the school with her parents and siblings. Managing the construction was Andrea Procopio, a veteran of repairing and building homes for the less fortunate in Maine.

The St. Kizito Primary School opened in June 2008, coincidentally the anniversary month of its namesake, a 13-year-old African boy killed by a 19th-century king. Since then the school has acquired wings, physically and intellectually. Students eat lunches made in a kitchen on the premises, read textbooks donated by American schools, sharpen their English in an after-hours program. Over five-plus years the number of pupils has jumped from 70 to more than 350. Grades have jumped, too, boosted by better food, better water and better teachers.

One of Fricke's protégés is Angela Hong, who was 17 when she was hired to teach at St.

Kizito. Hong's youth didn't matter to Fricke as much as her unusually mature passion and compassion. Not too many teens, after all, raise money for Americans to host African children forced to become civil war soldiers.

Hong taught art, storytelling and the wise use of school supplies. Instructed by Fricke, she handed out new blue books and pencils only when the old ones were turned in, completely finished.

Fricke still guides Hong, now in her early 20s. "Melissa inspires me and also challenges me to be a better person. She definitely intimidates me because of how much work she has done in playing a pivotal role in these children's lives. She is a quiet storm."

Hong is one of Fricke's many pied-piper partners. After St. Kizito opened, Fricke convinced Procopio to move into her parents' house on Long Island. In the basement in Blue Point, they plotted to expand BULA outside the classroom.

In 2009 Fricke and Procopio took over a children's home in Kampala. They worked with police officials—some corrupt, says Procopio—to oust the home's director, who was suspected of abusing youngsters. Fricke was protected by bodyguards until the director was arrested. Procopio praises Fricke for defusing a potentially dangerous situation with calmness, kindness and toughness. According to the former BULA vice president, one of Fricke's many skills is "cutting through the crap."

Last year BULA launched Home at Last, its most ambitious program. Hong, the program's director, admits it's been "overwhelming" at times reuniting orphaned and vulnerable

children with caretakers they haven't seen in years. Barriers range from new educational gaps to new siblings, jealousy to fear. Fears have been reduced by evaluations from social workers and reports from students on personal cell phones.

Fricke is particularly proud of the progress of one youngster back at home with his relatives. At 8 he was a trouble maker with bad grades. At 14 he's a good student who speaks up "for what's right."

What's right for Fricke is working with Alternative Care Uganda to resettle and educate former residents of the children's home in Kampala, which closed in November. She plans to build BULA's second primary school in Namungoona, an "urbanized village" four miles from downtown Kampala. She intends to start raising money in Africa and to secure bigger donations. Over nearly seven years BULA has received more than \$300,000, mostly from such grass-roots events as Victorian teas and 5-K runs to a brewery. Fricke still welcomes gifts mid-sized (\$600 for a solar panel) and minor (\$1 for a pair of socks). "As much as you need the big money, you also need the small money," she says. "Small money engages a lot of people."

Fricke's African mission has made her more engaged and more confident, a true global citizen. She no longer shakes as much when she speaks in public. She no longer shakes her head at seemingly impossible goals.

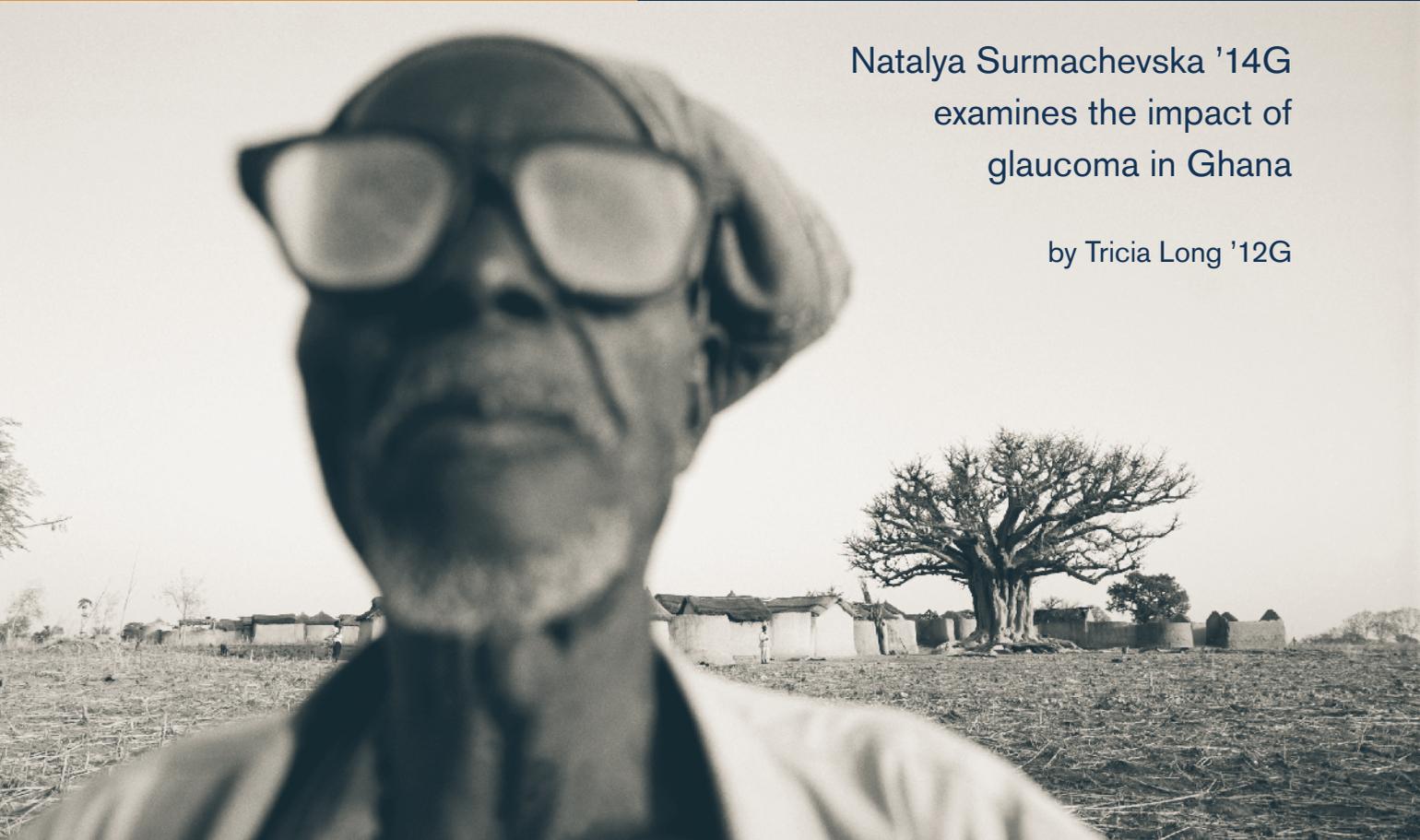
"What I do is certainly work, but a lot of it doesn't feel like work," she says. "It's not my job. It's my life. Nothing seems intangible anymore." ●

*Feature*

# Seeing Clearly

Natalya Surmachevska '14G  
examines the impact of  
glaucoma in Ghana

by Tricia Long '12G



Last summer graduate student Natalya Surmachevska traveled from the Ghanaian city of Kumasi to a small village near the border of the Ivory Coast. The remote village was located near a refugee camp established after post-election violence. Surmachevska carried a suitcase filled with nearly 600 pairs of gently used eyeglasses from the United States, which she and fellow volunteers from the organization Unite for Sight would dispense to patients in need.

Desperate for care, residents of the village and refugee camp alike flooded the organization's makeshift clinic. Surmachevska could describe the day only as "crazy." A workday estimated to end at 3 p.m. finally came to a close six hours later. Surmachevska finished the day exhausted but energized.

This was Surmachevska's second trip to Ghana. Her first came in 2008 as an undergraduate student at Lehigh University through the Global Citizenship program. Global Citizenship is a cross-college, multi-disciplinary certificate program designed to accommodate students from all fields. Through a curriculum and two experiences abroad, students examine the questions of meaning and value associated with the theme of citizenship within today's global world.

"Having that experience freshman year changed a lot of our career goals," she says of the program. "It was abrupt and shocking, and for many of us, it was the first time traveling out of the country. It was a springboard into other international work I did."

### Guided by Compassion

In many ways Surmachevska is the epitome of the Lehigh student—curious, tenacious and determined. Her research is rooted in the common good, and her educational path is guided by a compassion for others. As an undergraduate student she culled the knowledge she gained through her three majors—biology, international relations and economics—into an interest in public health. She studied abroad in Hong Kong during her sophomore year and shadowed doctors at a medical clinic in Lima, Peru, during the spring break of her senior year.

These experiences encouraged her to stay to pursue a master's degree at Lehigh, where she now works with Judith Lasker, professor of sociology and an expert in the field of public health.

Eager to stay active between her first and second year in the program, Surmachevska linked up with Unite for Sight for that return trip to Ghana, a decision that provided clarity and direction for her graduate research. The organization supports eye clinics in Ghana, India and Honduras with financial and human resources to eliminate patient barriers to eye care. They partner with existing clinics where eye doctors are unable to meet the patient demand.

### Access to Care

On this trip to the West African nation, Surmachevska and other volunteers provided outreach to villages located two to three hours by vehicle from major cities. Clinics in Ghana are located in cities, but the people in need are most often in remote villages.

At each stop, volunteers set up an intake station and a visual acuity station to determine patients' vision. Using simple instruments, optometrists are able to diagnose patients quickly and easily. Once diagnosed, patients visit a dispensing station where they may be prescribed anything from surgery to simple reading glasses. The glasses and the surgery are provided at minimal cost.

Surmachevska most enjoyed her work at the clinic's dispensary. It was there that



she noticed that patient after patient was suffering from glaucoma, a group of diseases that damage the eye's optic nerve, according to the National Eye Institute. Left undetected and untreated, glaucoma can result in serious vision loss and blindness.

"This really impacted me because Ghana has the second highest prevalence of glaucoma in the world," she says. "I saw it a lot. I was finding 20-year-old patients blinded from glaucoma."

The Glaucoma Association of Ghana estimates about 700,000 people in Ghana are living with glaucoma, about 60,000 of whom have been blinded by the disease. Surmachevska is hoping her master's thesis will shed light on the reasons behind glaucoma's prevalence in Ghana.

### Research with Vision

Surmachevska, who plans to graduate in May, says there are a variety of complex barriers to glaucoma care in low-resource environments. Glaucoma can be treated medically and surgically. Most optometrists treat the disease medically, using eye drops. But even simple eye drops were a challenge to dispense in Ghana.

"Barriers for using eye drops are financial and psychological," Surmachevska says. "People don't really believe that eye drops work. This is both cultural and educational."

Her data are qualitative and culled from field notes and a blog she meticulously maintained during her work at the clinics. By using a data set of 900 patients from that outreach, she's looking at the prevalence of glaucoma by age and by symptoms. Working with an optometrist with a shared interest, Surmachevska analyzed data from 1,000 patients according to gender, age and location to determine the demographic prevalence of glaucoma among patients at her clinic in Kumasi. The study also helps inform her thesis.

"Natalya's research considers the role of an American volunteer organization in addressing eye health needs in Ghana," says Lasker. "She is looking at the accomplishments of this NGO in reaching many people without eye care but also the barriers faced by patients in obtaining treatment for a condition that could cause blindness. Experts in the field of global public health are intensely interested in understanding these barriers to improved health."

As part of her research, Surmachevska conducted a thorough literature review, which turned up few studies examining glaucoma in Ghana—a frustrating, but telling, discovery.

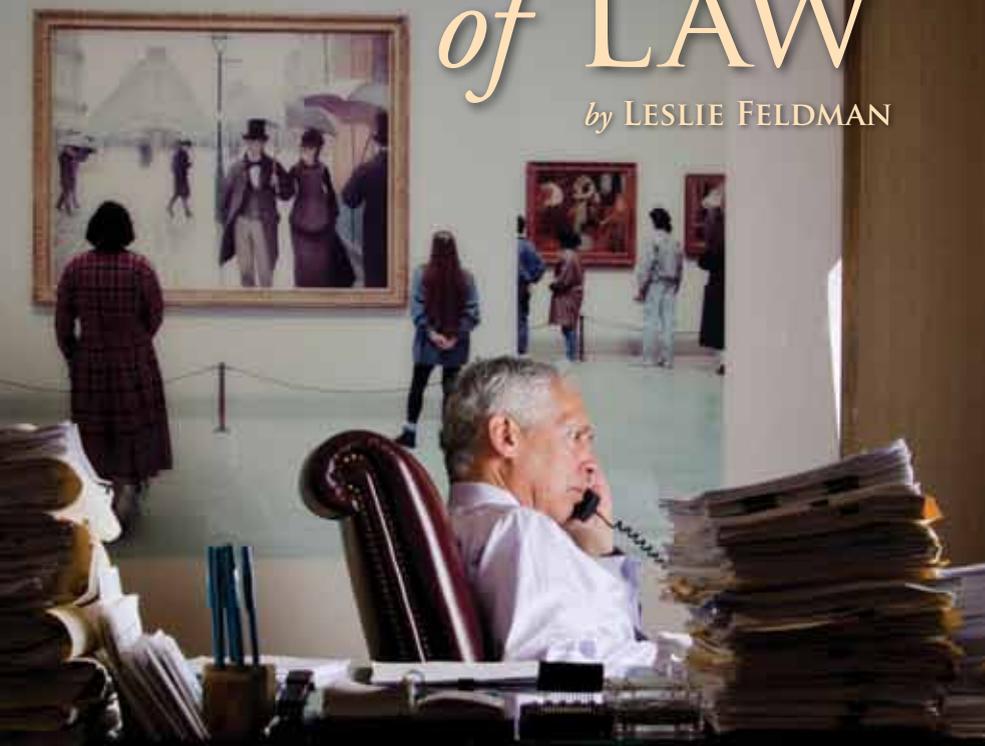
"There's so little research at the top," she says. "My literature review rests on research from around the world, but mostly from developed countries. That's where the research exists because the resources are there."

Surmachevska hopes to attend medical school, switching gears and working in maternal health. Strong research skills, an understanding of how policy and practice are often at odds and an ease of working with patients with many needs should take her far.

"Her research, based on direct experience over the course of many weeks, has greatly enhanced her understanding of the problems of accessing health services in poor areas, which will serve her well when she becomes a physician," adds Lasker. ●

# the ANATOMY of LAW

by LESLIE FELDMAN



## *From lab to moot court, Michael A. Epstein '75 took the legal path after Lehigh*

MICHAEL A. EPSTEIN '75 was interested in science and thought perhaps medicine was his calling, but he is living proof that one's major does not limit one's career choices. Given his distinguished legal career, it is rather surprising that law was not his clear first choice.

"I was very interested in biology and wanted to keep open the possibility of pursuing a career in medicine," says Epstein. "To preserve the option of medical school, and taking into account all of the science course requirements that medical schools had in those days, I chose to major in biology."

His curiosity in science was balanced by an interest in law, and a biology major helped him when he ultimately decided to apply to law school. "Being one of only a

limited number of individuals applying to law school with a major in biology gave me a bit of an advantage over other candidates," say Epstein, who received a juris doctorate degree from New York University.

Epstein is a senior partner and member of the corporate leadership team at the international law firm Weil, Gotshal & Manges, where he has worked for 35 years and practices in the firm's New York City office. He also chairs the firm's Technology and Intellectual Property Transactions Practice Group. His transactional work includes structuring and negotiating technology and intellectual property acquisitions, technology transfer and licensing arrangements, outsourcing transactions and joint ventures. He also has extensive

intellectual property litigation experience, including handling technology-related disputes and litigations involving non-compete agreements.

"I was lucky," Epstein says. "Lehigh provided me a great background in technology-related subjects. When I first started practicing, technology law was just taking off. I saw an opportunity and participated as the legal profession developed specialty areas such as computer law, biotech law, and Internet and e-commerce law."

Epstein's expertise strengthened Weil's reputation in these areas as the firm—approximately 100 lawyers strong today—focused on technology and intellectual property matters. In January 2014, the firm was recognized by the renowned Law360 as having one of the top practices nationally in technology and intellectual property.

"My legal practice primarily involves representing companies engaged in technology-related transactions," explains Epstein. "Among other companies, I represent a number of large pharmaceutical companies as well as entities in the computer and social networking sectors. My background as a biology major, and the natural sciences courses that I took at Lehigh, has been extraordinarily valuable to me as I practice law in this area. I understand the business issues, the technology issues, as well as the legal issues, which gives me an advantage over other lawyers."

Epstein recalls one of the earliest major cases on which he worked. It involved a dispute between his firm's client, the Paris-based Institut Pasteur, and the U.S. Government's National Institutes of Health (NIH) over whether the human immunodeficiency virus, or HIV, was first discovered at Pasteur or at NIH. Dr. Jonas Salk helped mediate a settlement between the two sides, and during the process, Epstein and Salk developed a friendship.

"There is no doubt that my biology training at Lehigh played a large role in allowing me to have insight into the dispute and the ability to both represent Pasteur effectively and deal directly with the scientists and Dr. Salk."

Epstein proudly notes that after the dispute settled, the Nobel Prize in Medicine was awarded to his clients. Shortly thereafter, Epstein was asked by Salk to join the board of trustees of the Jonas Salk Foundation, of which he is still a member today.

Epstein says he chose Lehigh because of its small, private school feel and the wide variety of liberal arts courses it offered. He also wanted a school within a few hours from home in New York City.

“I was able to take a reasonable amount of courses outside of my major and outside of the natural sciences, giving me the opportunity to sample courses in international relations, philosophy, sociology and religion. I also developed my written and oral communication skills, which are vital for success.”

In addition to the educational aspect of Lehigh, Epstein was very involved in the Forum, the student-faculty-administration governing body that existed at the time. In his senior year, he was vice chair of the research committee, a standing committee of the Forum, which was a leadership position and an executive committee position.

When looking back on university life, Epstein recalls one of his most meaningful academic experiences—conducting microbiology research during his senior year with biology professor Steven Krawiec.

“It was a fantastic experience. I learned so much and got to know Professor Krawiec well. When the Development Office approached me about the possibility of funding research in

the biology department, I was able to identify with the request in a very positive way because of my experience, and I knew that I would be helping Lehigh students attain an educational experience similar to mine.”

Philanthropy has always been a meaningful part of Epstein’s life. He thanks his parents for instilling the importance of giving back to others. “Dollars were not abundant in my house when I was growing up. Despite this, my parents always made me aware that I am lucky compared to many others. They taught me that even though our family budget may have been tight, we always had to find a way to give some amount of money to charity.”

Epstein’s philanthropic efforts go beyond Lehigh. He is involved in a number of not-for-profit boards, including serving on the board of trustees and executive committee of the North Shore-LIJ Health System and as vice chair of the board of trustees of the Feinstein Institute for Medical Research. “Involvement in these two boards allows me to maintain my interest in biology and medicine,” he says.

Epstein also serves on the board of trustees and executive committee of the Jewish Board of Family and Children’s Services, one of the largest social service, not-for-profit organizations in the country. He has served on

advisory panels to Congress and to the National Academy of Sciences, Institute of Medicine on intellectual property matters. He is the author of more than 60 articles on intellectual property law and has lectured around the world on such topics as trade secrets, biotechnology law, trademark law, computer law, cybersecurity and e-commerce. He is a founder and co-editor of *Intellectual Property & Technology Law Journal* and a member of the editorial boards of *Computer Lawyer*, *Intellectual Property Strategist* and *Cyberspace Lawyer*. He is also the author of the treatise *Epstein on Intellectual Property* and co-editor of *Drafting License Agreements*.

Epstein continues to show his appreciation for the university by recommending the school to students preparing to enter college.

“The school provides a topflight educational experience coupled with terrific extracurricular activities. As a member of the Dean’s Advisory Council for the College of Arts and Sciences, I have been able to meet with faculty and administration, and they have always exhibited a deep sense of caring and commitment for making the Lehigh experience a truly positive one for every student.”

Epstein and his wife, Lisa, have three children—a son Jesse, 17, a daughter Emily, 15, and a son Eric, 11. They call Long Island, N.Y., home. ●



*“Lehigh provided me a great background in technology-related subjects.”*

# Farm to Fork

Katelyn Armbruster '15 transforms a garden to help others in need

by Esther Shanahan

For months, Katelyn Armbruster '15 transported the produce from her garden plot to nearby New Bethany Ministries and has delivered hundreds of pounds of food as part of an Experiential Learning in Health grant from Lehigh.

Armed with the research grant from Lehigh, a fervor for helping others and an appreciation for fresh, organically grown produce, Armbruster threw herself into the task of developing a Farm to Fork: South Side Bethlehem program to service community members aided by New Bethany's food bank.

Armbruster's passion for gardening and locally sourced vegetables stemmed from a Rotary exchange experience in Austria following her high school graduation.

"It was amazing, but things are different there. People are environmentally aware, and there aren't many supermarkets. People grow their own produce, bake their own bread and go to the butcher for meat. The lifestyle is so different. After living there for a year, I came back interested in developing a local sustainable agriculture movement. That's where my idea for Farm to Fork came from."

At Lehigh, under the guidance of Breena Holland, associate professor of political science and part of Lehigh's Environmental Initiative, she developed a plan to start a garden and teach area residents about the benefits of healthful eating. She purchased seeds for more than 65 different types of vegetables and printed information about the health benefits of each plant

on cardstock, along with different recipes and preparation methods.

Preparing an organic garden bed, she spent the summer and fall fighting striped cucumber beetles (they nearly wiped out the entire zucchini crop) and implementing her program. When the first crop came in, Armbruster harvested the produce and delivered it to New Bethany's food bank, along with tips for using every part of the vegetable, recipes, nutritional information, health benefits and instructions for washing, preparation and storage. Recipients were captivated by the vibrant colors and willing to try new foods, even if they were unfamiliar, she says.



"It made me a better gardener. I had to be more in touch with the immediate environment than someone not growing organically. I grew everything I could, including eggplant, peppers, beans, herbs,

kale, broccoli, Swiss chard, purple basil, kohlrabi and several different varieties of tomatoes. I wanted people to learn that vegetables don't have to be boring—they can be exciting to cook with or grow in your own garden."

Part of Armbruster's grant entailed surveying community members about the types of food they typically eat and whether they were facing any health issues. The data revealed a myriad of health problems and a diet low in vegetables. Many of them relied heavily on food distributed by Bethany Ministries, but not fresh vegetables.

"Half of the people I surveyed said they had diabetes, and they were supposed to eat vegetables daily," Armbruster notes. "But they weren't able to get them every day—maybe at most once or twice a week. I started this project because I wanted to develop a sustainable program that someone could replicate in the future—in Bethlehem or elsewhere. I've received a very

positive response, not only from the people receiving the food, but also from the community."

Armbruster's talent for transforming a barren plot of land into a thriving vegetable garden

has not gone unnoticed. Last summer, she was approached by a Lehigh professor to help students in an urban agriculture course complete a laboratory portion that entailed working in a community garden. Armbruster's collaboration with the students developed into a beneficial partnership and launched the creation of Lehigh's Community Leaders' Initiative for Permaculture (CLIP) club.

Governed by the three pillars of "Earth Care, People Care and Fair Share," permaculture refers to environmentally friendly and sustainable agricultural practices with an emphasis on helping others. CLIP's motto? "You don't have to leave your community to live in a better one." The members, currently at 25 and growing, have recently developed educational programming for Bethlehem's local Boys & Girls Club. Next up for CLIP is a mission to establish a community garden on the South Bethlehem Greenway.

"We would love to see a more accessible gardening space for people on the south side of Bethlehem," Armbruster says. "Building a garden on the greenway would be a great way to create a connection with nature in the city and to bridge the gap between Lehigh and the Bethlehem community."

Currently studying abroad in Austria, Armbruster hopes to land an internship with an environmental nonprofit organization.

"My ultimate career goal is to work with some sort of nongovernmental organization (NGO) or nonprofit that focuses on food," she says. "I'm really interested in food security and nutritious food stability. I believe that everyone has the right to healthy, fresh food."



*Michele Norris of National Public Radio answers questions from the audience during the Kenner Lecture as James Peterson, director of Africana studies, moderates.*

## Join the Dialogue

College creates initiative to spark student conversations

by Robert Nichols

Since 1865, Lehigh has been providing students with educations that combine the practical with the aesthetics. Asa Packer knew that students require an education that not only provides solid, hands-on foundations but also instills a lifetime love of learning and discovery.

As the foundation of a Lehigh education, the College of Arts and Sciences provides a learning environment that engages students with faculty who are eager to explore the intersections of their respective fields. This learning is at its best when students are educated in an inclusive setting. Building on this philosophy, the College of Arts and Sciences started a broad

project in 2012, Dialogue Toward Understanding, and has introduced a Join the Dialogue campaign, an initiative to invite our students into conversations showcasing disparate views on the major issues challenging us today. Faculty encourage students to speak up, to question, to find solutions that may lie outside the norm, knowing they can do so in a supportive and inclusive environment. As part of this effort, Donald E. Hall, Herbert and Ann Siegel Dean of the College, established a series of Join the Dialogue events to address many of today's challenges. The series began in February 2013 with the Kenner Lecture by Madeleine Albright, who

discussed the international political landscape during a wide-ranging lecture before more than 1,000 people in Baker Hall.

More recently, the college paired with Lehigh's ADVANCE program and Germany's University of Cologne to host a conference in New York City addressing the disproportionate scarcity of academic women in science and engineering. Researchers and leaders from the two institutions met in New York City on

Oct. 16 to address the shortage of women in science, technology, engineering and math (STEM) in the academy. More than 75 registrants from business and nonprofit organizations discussed the current state of academe and sought possible administrative interventions and solutions to determine the next steps toward addressing the remaining challenges together.

The meeting was an outcropping of Hall's previous interactions with his German counterparts. Discussions also examined the programs and policies that create a culture that advance women in STEM, as participants held an open dialogue about social science research findings, organizational culture, interdisciplinary scholarship and work-life balance. Administrators at Cologne view Lehigh as having exceptional policies in place regarding issues addressing gender equity in the hiring of women in the sciences, making the meeting a good point from which the two schools can compare and contrast.

Join the Dialogue also brings leading experts to campus,

exposing students to the sometimes challenging debate and discussion. In November, members of the Lehigh community learned more about the 2.5-year-old Syrian civil war when the college hosted a three-day conference featuring two dozen international experts from a wide variety of backgrounds. Organized by Henri Barkey, the Bernard L. and Bertha F. Cohen Professor of International Relations, workshop participants focused their attention on the hopeful possibility that the conflict might eventually be solved by nonviolent negotiation.

The Workshop on Global and Regional Implications of the Syrian Crisis featured panel discussions involving professors, political analysts, ambassadors and researchers from the U.S. and Syria and from Syria's neighbors in the Middle East.

In January, the college stepped into the discussion surrounding race. Jeffrey Kenner '65, who has brought to campus premier speakers to address issues surrounding peace and tolerance, again played a critical role to help the college host *NPR presents Michele Norris and the Race Card Project*. The Race Card Project is an initiative to foster a wider conversation about race in America. Norris encouraged the audience of more than 700 to participate in a dialogue on race. She reminded the audience that conversation, especially when it concerns race, requires a "generosity of spirit." While on campus, Norris also met with undergraduate students from all three colleges.

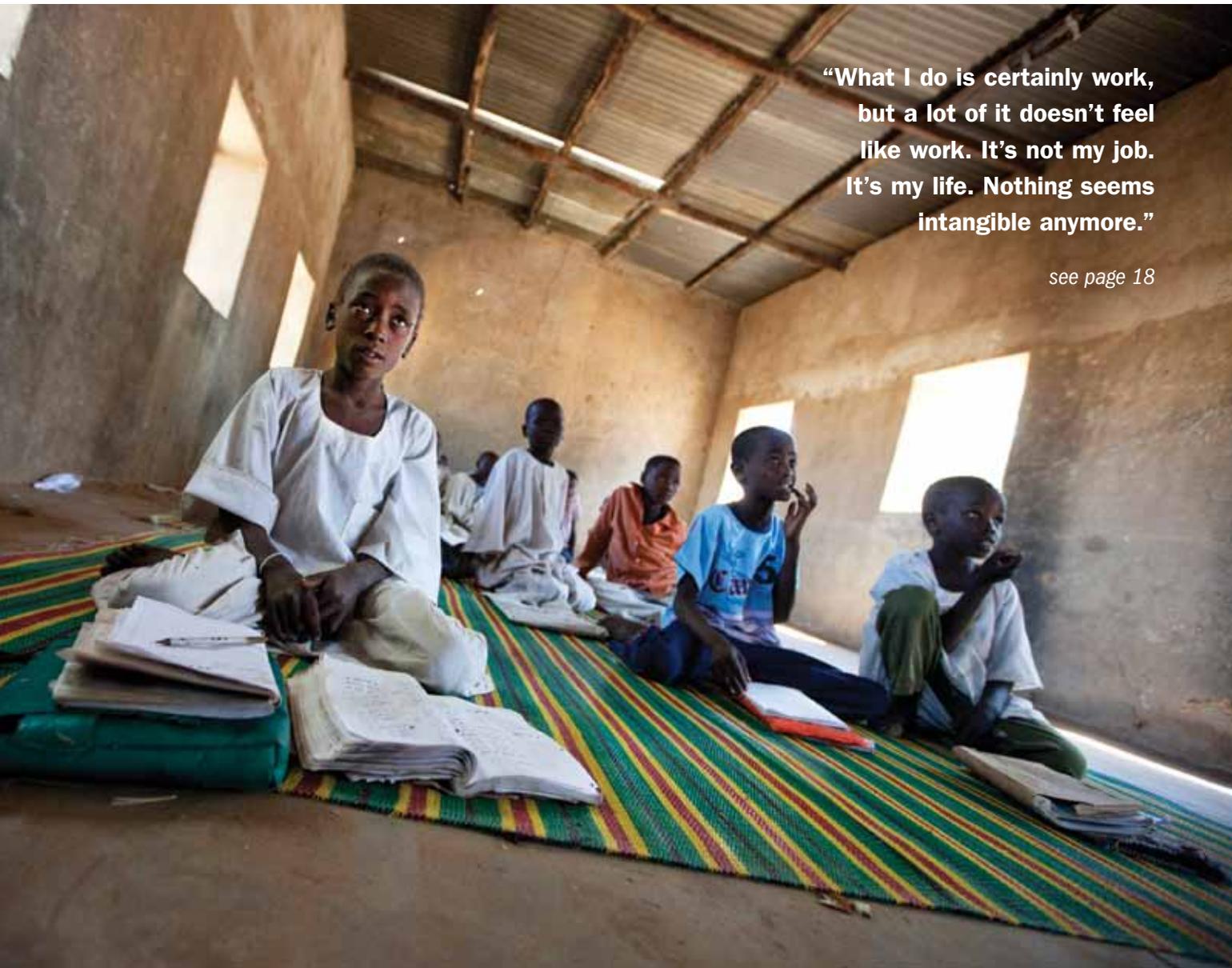
Future events are being planned, and the college will be incorporating social media into many of these events. Alumni are encouraged to watch for upcoming lectures and join the dialogue.

**LEHIGH UNIVERSITY**

College of Arts and Sciences  
9 West Packer Avenue  
Bethlehem, PA 18015

Non-Profit Org.  
US Postage  
PAID  
Permit No 504  
Lehigh Valley, PA

ALBERT GONZALEZ FARRAN/UN PHOTO



**“What I do is certainly work,  
but a lot of it doesn’t feel  
like work. It’s not my job.  
It’s my life. Nothing seems  
intangible anymore.”**

*see page 18*