

The **COLLEGE**
MAGAZINE

ARTS AND SCIENCES AT INDIANA UNIVERSITY | Fall 2011



Thousands of dollars.
Mountains of debt.

**IS COLLEGE
WORTH IT?**

The COLLEGE

MAGAZINE

Volume 34, No. 2



INDIANA UNIVERSITY

COLLEGE OF ARTS AND SCIENCES
Bloomington

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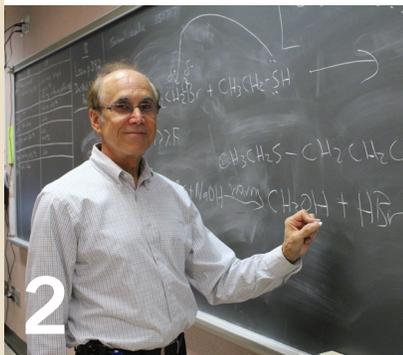
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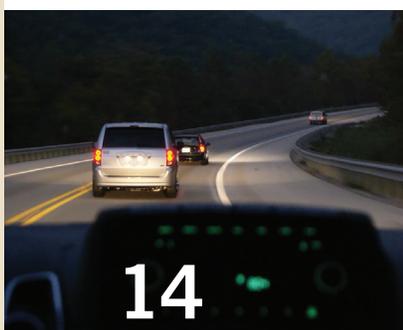
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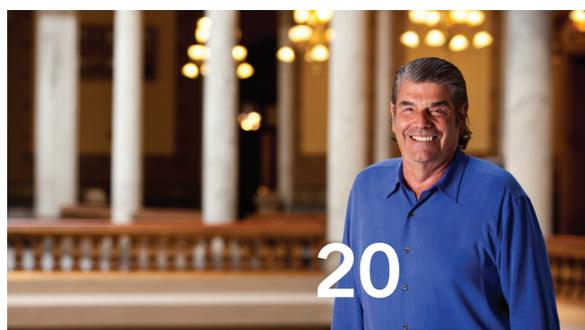
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Dear alumni and friends of the College,

Economists have long recognized that positive change is most often possible when times are bad. As President John F. Kennedy said in 1959, “The Chinese use two brush strokes to write the word ‘crisis.’ One brush stroke stands for ‘danger;’ the other for ‘opportunity.’ In a crisis, be aware of the danger — but recognize the opportunity.”

The relevance of a liberal arts education is frequently challenged in today’s global society. Crises such as a global recession and instability in the workforce are but two examples that seem to challenge its value and worth.

Yet IU’s College of Arts and Sciences is a truly exceptional place and, as evidenced by its faculty, students, and alumni, offers a living testament to the power of a liberal arts education. My vision is to utilize opportunities afforded by the College to boldly build on its historical strengths.

Composed of some eighty departments and programs spanning the arts and humanities, social sciences, and sciences, the College teaches our students to think logically, communicate clearly, act creatively, and live ethically — the foundation for success in the workplace and in life.

The College’s world-renowned faculty engages in creative activity, basic and applied research, and scholarship that significantly advances the frontiers of disciplinary and interdisciplinary knowledge, thereby serving IU, the state of Indiana, the U.S., and the world.

Through a collective goal to be the best in whatever we do, “opportunity” will not be lost in the College. Numerous ongoing programs — such as this year’s Themester, “Making War; Making Peace” — continue the intellectual traditions of the College, while numerous new initiatives such as the development of a School of International Studies provide opportunity, build on this momentum, and expand and enhance our profile.

Looking to the future, we have assembled an International Studies committee of faculty from both the College and from IU’s professional schools to establish the framework for a School of International Studies that will be housed in the College. IU offers a comprehensive depth and breadth in languages, area studies, and international policy that is second to none; one of our new goals is to offer students an enhanced and enlarged international studies curriculum that is superior to those currently available anywhere in the country.

The College’s faculty, our students and our alumni are the core, the heart, of Indiana University. We embrace the opportunity to change lives, impact society and our world, and shape the future.



Yours in support of education,

Larry Singell

Larry D. Singell Jr., Dean

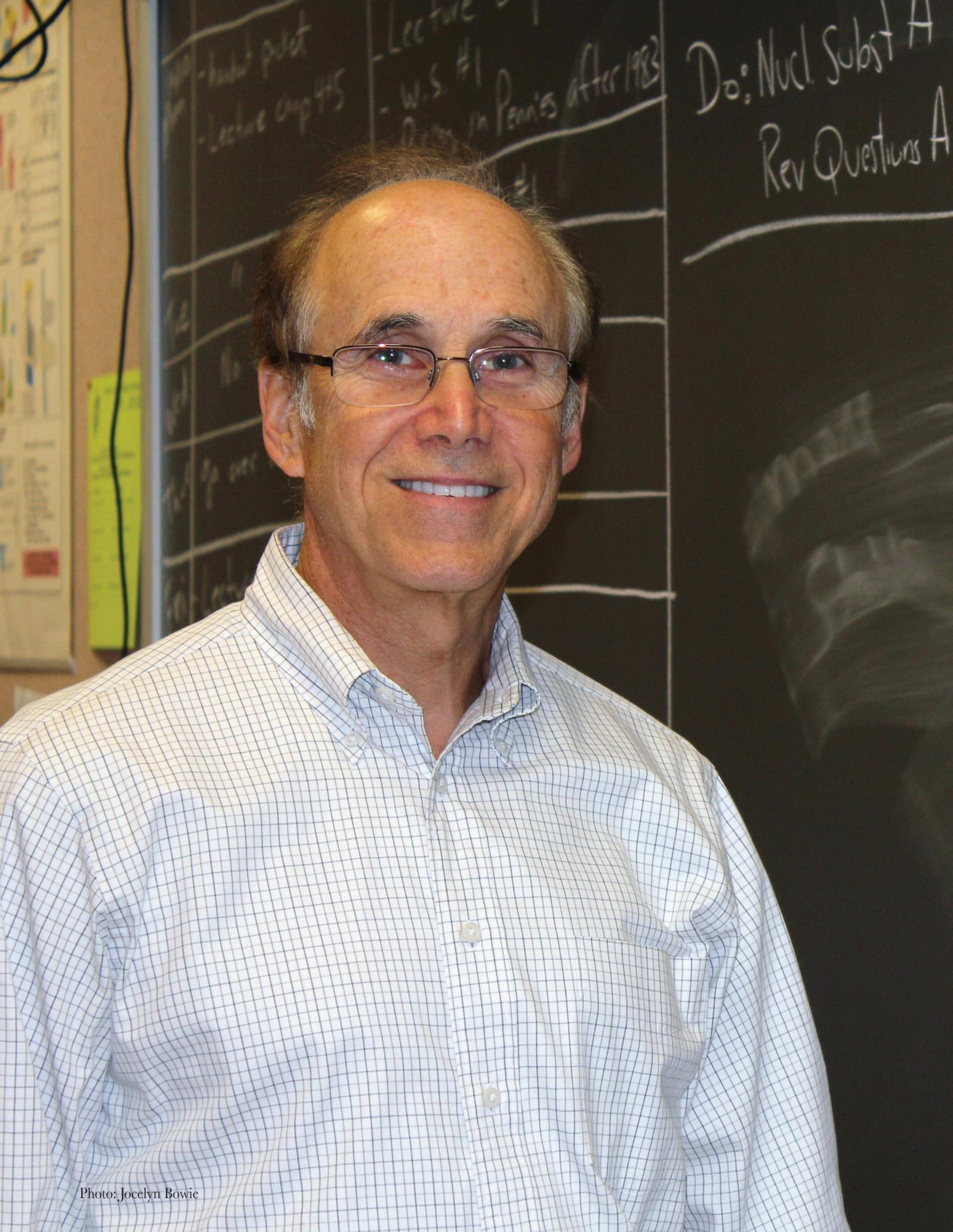


Photo: Jocelyn Bowie

Alan Dinner

“I always wanted to be a teacher”

On a crisp afternoon in mid-October, a small group of students at North Central High School in Indianapolis hang on their Chemistry teacher’s every word. It is the last period of the school day; nonetheless the students pay rapt attention. Even the insistent end-of-school buzzer doesn’t interrupt their concentration on their subject and, more specifically, their teacher. Sometimes a hand is raised in response to a challenging question, sometimes the teacher singles out a student to request a response. Everyone is engaged and intent, perfectly focused on knowing and being able to describe the different properties of primary and tertiary carbocations.

Welcome to the most advanced high school chemistry class in the nation — the International Baccalaureate Chemistry class, established at NCHS and taught by **Alan Dinner**, Ph.D. (Chemistry, 1966), an unassuming and good-humored man who doesn’t seem to notice that he’s smeared chalk all over his trousers (yes, he still uses chalk in the classroom).

After 27 years at Eli Lilly and Company (he retired as vice president of quality assurance and quality control in 2002), moving into the classroom took some getting used to. Dinner didn’t know how to dress for work, for one thing (a suit? too formal); he didn’t know what to have his students call him (“Alan”? too informal); he wanted to volunteer (a first for the district, and an arrangement they couldn’t work out); he planned to start slowly, but agreed to teach a full load. He held a Ph.D. in organic chemistry, but he hadn’t looked at the basic material in more than 30 years, and he had no teaching credentials.

“I had always had a desire to be a teacher, particularly a high school teacher,” he says. “My high school chemistry teacher, Mr. Hall, made me want to be a chemist. He would place two stools, like bar stools, at the front of the classroom, call up one student, and teach the entire class to that one student. I guess the idea was that if one student each day could understand the lesson, then over time the class would all learn the material. I loved it and I wanted to be like Mr. Hall.”

During his first year of teaching, Dinner read the textbook each night, keeping barely one step ahead of his classes. He learned the hard way that some kids don’t want to learn. He submitted to monthly reviews of his teaching by the head of the science department. Every time he got a paycheck, he would turn around and write a check for the full amount to the Washington Township Schools Foundation. But he survived and found that he loved teaching.

“It was a *ton* of work,” he says. “But I don’t have any problem saying ‘I don’t know’ to a student. The best part was that from the very beginning I was able to marry the practical of ‘what you learn’ with ‘what you might do at work’. When a student would ask why they had to learn this thing or that thing, I was able to say, ‘Because at Lilly, every day at work I would do this.’ And that made sense to them.”

“Alan is a unique talent and special individual,” said Prof. **Richard DiMarchi**, Linda & Jack Gill Chair in Biomolecular Sciences at IU and Dinner’s longtime colleague at Lilly.

About five years ago, Dinner established and began teaching the IB class. “I took a look at the curriculum; it’s about 70 percent organic chemistry, with a section on medical chemistry and analytical chemistry. So it’s perfect,” he says. Students in his class

are simultaneously taking AP chemistry, and he’s also training a younger faculty member to teach the class.

Every year, the top 25 seniors at North Central are invited to name the teacher who has had the most impact on them. Dinner has been named several times; one year the top two seniors in the school both named him. He sees no difference whatsoever in the intelligence, abilities or skills of girls versus boys. In fact, despite the fact that his IB class consists of six students, he hadn’t noticed that the gender breakdown is four girls and two boys.

“Alan has an immeasurable capacity to promote intellectual growth and personal well-being,” DiMarchi says. “During his tenure at Lilly he was exemplary as a scientist, administrator and teacher. His current professional mission is a continuation of these personable attributes applied in a different setting.” ■

Alan Dinner ... an unassuming and good-humored man who doesn’t seem to notice that he’s smeared chalk all over his trousers.

Alumna Liz Oates

from the classroom to the cruise line

Though **Liz Oates** grew up in Coral Gables, FL, it never crossed her mind to go to any place but IU. “My parents met at IU when they were grad students, on a blind date at Nick’s,” she says. “My parents love IU — they stayed long enough to get 5 degrees. They didn’t pressure me — they didn’t have to, after they brought me up here to see the campus I knew I wanted to go here.”

Oates started off as a math major; her Intensive Freshman Seminar, “Games of Strategy,” convinced her to explore Economics. She added that as a second major and she completed the Liberal Arts and Management Program (LAMP) certificate as well. Her experiences led directly to her first job, with Royal Caribbean Cruise lines.

“My favorite Economics class was a seminar on Experimental Economics co-taught by Professors (**James**) **Walker** and (**Arlington**) **Williams**. It was really fascinating to read about and see the theories in action, as well as to think about the real-world applications of economic theory,” she says. “My favorite LAMP class was Math Modeling for Business Decision Making. As part of the class we did a consulting project, and my team was assigned to help a Marriott hotel maximize revenues by determining the optimal price for each day of the year. We identified 15 different customer segments and used that to model daily aggregate demand. I really enjoyed the project and started looking for jobs in revenue management, which is what led me to Royal Caribbean.”

It was spring break of her senior year and no jobs had materialized. But at a Chamber of Commerce breakfast in Coral Gables she attended with her mother, she started talking revenue management with her neighbor, who happened to be friends with an executive at Royal Caribbean. One thing led to another, and three weeks after graduation from IU, she started working at the cruise line. If Liz were to offer some words of wisdom to today’s job-seeking students, she would say, “If you’re specific in terms of what you’re looking for, it’s easier to find help.”



It never
crossed her
mind to go
any place
but IU.

Photos: Jocelyn Bowie

A former member of the IU Board of Aeons, Liz credits that experience with helping her as well. “My experience on the Board of Aeons prepared me for my work at Royal Caribbean, because in both roles I was part of a team who looked for solutions to complex issues facing a large organization and presented our findings to leadership,” she says.

An active and loyal alumna, Liz spent a year as president of the Miami IUAA chapter — and helped earn Chapter of the Year honors. “We wanted to have something that would appeal to everyone, by hosting a wide variety of events on a pretty regular basis. For IU Cares, we volunteered tutoring K-12 students at the Overtown Youth Center. We had a group of alumni go see Straight No Chaser perform. **Gerhard Glomm**, then the Chair of the Department of Economics, gave a lecture on poverty and anti-poverty measures. We hosted a reception for students considering IU. We also hosted a big BBQ for alumni, current students, and entering students, and this has now become an annual event.”

She’s now an MBA student at the University of Chicago Booth School of Business, but doesn’t rule out a return to her former company. “It was gratifying to work for a company with such an incredible product,” she says. “I wanted to go to business school to see the different ways businesses operate, learn best practices, and develop the managerial skills to champion great ideas to success. I have attended a number of talks by people who have made big positive impacts on their organizations. Often, the ideas are very simple, but what makes them successful is the leader’s ability to motivate others to action.” ■



Back on campus for reunions of the Board of Aeons and the Economics department, Liz Oates catches up with Professors Jimmy Walker (left) and Arlington Williams. Liz is shown with Economics Professor, Gerhard Glomm, on the Table of Contents page.

The College's 34th Annual Recognition Banquet Weekend, Oct. 20-22, 2011



DONALD M. FEHR
Distinguished
Alumni Award



CAROLYN K. REIDY
Distinguished
Alumni Award



ADAM ROBINSON JR.
Distinguished
Alumni Award



ELLEN KETTERSON
Distinguished
Faculty Award



ERIN PATRICK
Outstanding
Young Alumni
Award



**Celebrating the Arts and Sciences
at Indiana University**

On a festive weekend in October, alumni c

Below, top to bottom:

The College Alumni Board tends its tree in Dunn Meadow, planted to replace one lost in May's storm; Vice Admiral Adam M. Robinson Jr. discusses PTSD with Prof. Cara Wellman; Alumna Eleanor Cox Riggs, second from right, celebrates with (from left) Susan Voelkel, son Steven Riggs, Aina Puce (the Eleanor Cox Riggs Professor in Psychological and Brain Sciences), and granddaughter Emilie Riggs, a first-year student at IUB.

Right column, top to bottom:

Erin Patrick, center, chats with Prof. Ted Carmines at a tea in her honor; English department Chair Jonathan Elmer listens as Carolyn Reidy speaks to a packed room about her career as CEO of Simon and Schuster; VADM Robinson accepts the Department of Political Science 2011 Distinguished Alumni Award from Russell Hanson, chair.



of the College gathered to honor their own



Above left: J T Forbes, executive director of the IU Alumni Association and a Political Science alumnus, chats with alumnus Bruce Hetrick and his wife, Cheri O'Neill.

Above right: Professor Ellen Ketterson treats banquet-goers to the song of the dark-eyed junco.

Center left: Don Fehr accepts the 2011 Distinguished Alumni Award

Center right: Jack Gill, PhD Chemistry 1966, recipient of the Dean's Order of Merit, shares a laugh with IUB Provost Karen Hanson

Below right: In town for the Linguistics reunion, banquet-goers Melissa Troyer (BS '08), Althea Bauernschmidt (BA '08), Robert Botne (department chair), Ashley Hastings (PhD '81), Barbara Wheatley (PhD '81), Brian Riordan (PhD '07)



Photos: Zach Hetrick and Jocelyn Bowie

Timmy Global Health

One student's experiences as a medical volunteer abroad

“Each March, 20 IU students travel to Guatemala for one week to volunteer in medical clinics and help provide care to medically-underserved communities. And for 52 weeks a year, Timmy at IU students fundraise, advocate, and serve on behalf of Timmy's local Guatemalan partner, helping to build their capacity and strengthen their outreach. While each trip inspires a new group of students, they often return with many questions: How do we know that the work we support in Guatemala is effective and impactful? How can we make it better? More sustainable? Are we taking care to do no harm? And, given the health care issues here in the US, why are we spending our time working abroad? How do we ensure that our work truly has a global — local and international — impact?”

www.timmyglobalhealth.org

Guatemala



by Lauren Santiesteban

Over my four years at Indiana University, none of my experiences compare to the volunteering I did through the IU Chapter of Timmy Global Health. Timmy Global Health, based in Indianapolis, helps students to organize and execute short-term medical brigades in developing countries.

I was fortunate enough to travel on two separate occasions to Quetzaltenango in Guatemala in 2010 and 2011. I was especially

excited for the spring break trip in March, 2011 because my father came along for the ride, in the role as an expert translator and physical therapist. We traveled with 20 students, along with health professionals including nurses, pharmacists, physicians, and other volunteers. In one week, we visited four barrios outside the city to bring medical aid to impoverished communities.

From this one week of experience, I was able to gain insight into the daily responsibilities of various health professionals. I

also acted as a translator for the health professionals and students. Not only was translating a great way to polish my Spanish language skills, but I was also able to learn about another culture that is very different from my own through directly communicating with the patients and other people in the various communities.

I had one very memorable patient, an older gentleman who had a number of health problems. He spoke a dialect of Mayan known as Quiche. His Spanish-speaking wife translated for him, explaining that he was suffering from what she called “a sickness of the blood” (she meant leukemia). He also had an enlarged spleen (“bazo” in Spanish) and an inguinal hernia.

Since I would be attending medical school in the fall, the physician allowed me to palpate the patient's abdomen so I could get first-hand experience comparing an enlarged



Lauren Santiesteban, left, during her time in Guatemala.

spleen to a normal abdomen like my own. I later asked the physician why he did not suggest surgery for the inguinal hernia, and he told me it was because the man had been living with this problem for such a long period of time and the patient did not complain of pain due to the hernia.

There are many reasons why this patient stands out so clearly in my memory. He was one of the most extremely ill patients I observed, and his condition highlighted the great need for medical care in a country like Guatemala. Throughout the entire examination, the patient did not complain once of pain or discomfort. He really just wanted to provide some relief for his worried wife by getting checked by a physician.

Volunteering with IU-Timmy Global Health has been one of the most challenging and eye-opening experiences I have had throughout college. There are so many more issues in Guatemala that need to be addressed in order to really improve the lives of the people in the country. These trips and working with IU-Timmy

“These trips and working with IU-Timmy Global Health have definitely solidified my interest and excitement for volunteer medical work, both locally and internationally.”

Global Health have solidified my interest and excitement for volunteer medical work, both locally and internationally. I will be attending medical school this fall, and I hope to continue working with diverse communities throughout medical school and as a physician.

This story originally appeared in *IU • Chemistry* magazine, Vol. 56, and is adapted and reused with permission.

Lauren Santiesteban is from Zionsville, Indiana, and graduated in May 2011 with degrees in biochemistry and anthropology and minors in Spanish and biology. Her involvements at IU included serving as a mentor for freshman students and as a tutor through the Hudson and Holland Scholars Program, Student Ambassador, Home Health and Hospice Volunteer through Bloomington Hospital, College of Arts and Sciences Student Advisory Board. She was a member of the Hutton Honors College and was elected to Phi Beta Kappa. She is currently attending the New York University School of Medicine.



Support for the activities of the Timmy Foundation is broad and deep among IU students. Paul Onkka, far right, a member of the Liberal Arts and Management Program's Virtu project, presents a \$25,000 check to the Timmy Foundation leadership team.

“One of the Timmy Foundation's central ambitions is to support the impoverished in developing countries while concurrently instilling humanitarian values and leadership skills in college students,” said Patrick Onkka, a student from South Bend.

The Virtu project, created and run by students in the College's Liberal Arts and Management Program, is an original social entrepreneurship initiative that uses donor pledges to a “mock investment portfolio” to raise money.

Make a Contribution:

Your pledge to Virtu will help students learn about responsible investing

Your donation will:

- Support the Timmy Foundation
- Support student travel for medical volunteer work

Carlos Miller tells why he supports the College

by Bruce Lilly

Biology Professor Emeritus **Carlos O. Miller** has a knack for expressing his thoughts succinctly. “We all owe what we are to other people, so when we can, we ought to help other people.” He also practices what he preaches. In response to the help he received earlier in life, Miller gives back by making financial gifts to the College.

His donations fund a faculty chair and a graduate fellowship program within the Department of Biology, both of which promote research into the biochemistry of plant growth and development.

currently interested in an herb, *Lindenbergia muraria*. He discovered a compound that promotes flowering, and is investigating how that compound manages to do so even under unfavorable environmental conditions.

In 1999 he established the Carlos O. Miller Chair of Plant Growth and Development. (When discussing his gifts to the department, Miller stresses that he never sought to have his name on anything, but development personnel insisted that tradition must hold sway.) In 2004, Mark Estelle, the first professor to hold the Miller Chair, began the Carlos O. Miller Lecture Series to honor Miller’s contributions to the department and the scientific community. With the goal of broadening the range of his support, Miller funded the Carlos O. Miller Fellowships to help ensure that graduate students working on plant growth and development would be able to concentrate more fully on their research.

Miller’s philanthropy began with donations to his high school. “I set up two funds at my old high school in Jackson, Ohio,” Miller says. “One fund is in memory of a teacher who helped me. The other is for music and it’s for my mother. She couldn’t read a note, but she could listen to anything and then play it.”

“My family barely made it through the Depression,” Miller says. Like many others of his generation, living through tough economic times fostered a tendency to save. “I was making very little money when I was in the Army, but I still managed to save some,” he says. Admitting that he never developed expensive tastes, Miller says, “I can enjoy just sitting on the lawn and looking at a blade of grass.”

His ability to provide financial support to the College has developed at least in part from investments made about thirty years ago. For example, in the 80s after taking notice of a young company that seemed to have growth potential, Miller purchased shares of the company’s stock. You may have heard of this company. It’s called Microsoft.

Miller believes strongly in the value of providing educational opportunities to everyone. “Public education should be free,” he says. “The GI Bill helped me and it’s one of the best examples in our nation’s history of the power of public funding for education. Think about how many segments of society benefited from that.”

Research and education are Carlos Miller’s life work, and he wants to give back for the help that has come his way. “All along someone has been helping me,” he says. “I have a debt to the whole community. Everyone does.” ■



Photo: Jocelyn Bowie

Even though interdisciplinary study is common in academia today, Miller remembers the days when this was not the case. “When I began my career in the 1950s, neither chemists nor biologists showed much interest in biochemistry,” Miller says.

Miller, on the other hand, has been engaged in biochemical research for more than half a century. After serving in the Army during WWII, he used funding from the GI Bill to attend Ohio State University and earned his doctorate in plant physiology there in 1951. Before joining the IU faculty in 1957, he worked at the University of Wisconsin in the laboratory of renowned plant physiologist Folke Skoog. There Miller isolated kinetin, a key hormone that promotes cell division.

Although he retired from teaching in 1987, Miller is still active in the department. He continues his research and is

Is a College Degree Worth the Cost?

A conversation between Larry Singell and Jamsheed Choksy,
moderated by Richard Miller

by Bruce Lilly

The cost of college is a hot topic, and for good reason. Tuition costs have climbed steeply while government support both for students and educational institutions has fallen sharply.

Recessionary times mean that recent college graduates face a tough job market and that many families simply have less money available to spend on education. The Occupy movement sweeping the nation has focused attention on the massive debt burden carried by many students. Segments of the movement are pushing for ways to make education accessible to all and to have all student debt forgiven.

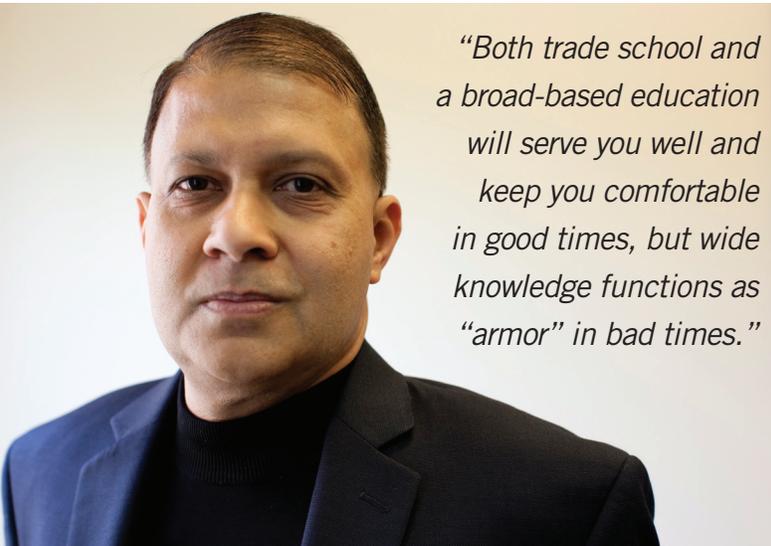
Larry D. Singell Jr., who became dean of the College of Arts and Sciences on July 1, and **Jamsheed Choksy**, professor of Central Eurasian Studies and History, recently wrestled with the issues in a conversation moderated by **Richard Miller**, professor of Religious Studies. Singell is an economist whose research focuses on the economics of higher education; Choksy is a US presidential appointee to the National Council on the Humanities, and Miller is director of the Poynter Center for the Study of Ethics and American Institutions.

Photos: Zach Hetrick



Richard Miller: I thought we'd begin by asking the question, "Why are we having this conversation now?" What is it about the current state of affairs — economically, socially, politically — that makes this issue so pressing today?

Larry Singell: I would begin with the obvious. In 1940, about 5 percent of the population got a college degree and in 2006, it was approximately 28 percent, so a big part of it is the fact that there are more people going to college. Also, the cost has been rising between 7 percent to 9 percent since the 1930s while the state is reducing the support that it provides for a college education, so the cost of college has increased in a relatively precipitous way, much higher than the rate of inflation and other goods.



"Both trade school and a broad-based education will serve you well and keep you comfortable in good times, but wide knowledge functions as "armor" in bad times."

Jamsheed Choksy: Even though the modern college system dates back to the Middle Ages, we have the emphasis on education and on higher education all of the way back to the dawn of civilization. The same issues seem to come up when there are economic downturns or some other social stress. When times are changing, people question the relevance of knowledge. Should it be practical, as in trade schools and guilds, or should it be broad-based education?

That tussle we see in letters from the Middle Ages about whether the trivium — grammar, rhetoric, and logic as the basis of education — is best or whether one should go and work in a guild. We see this among the Sumerians and even later in the Persian empire. They seem to reach a very interesting conclusion: that both trade schools and a broad-based education will serve you well and keep you comfortable in good times, but wide knowledge functions as "armor" in bad times, because you can adapt and change to changing situations. This armor is something that you don't get if you specialize in a particular craft.

LS: An economist will tell you a liberal arts education gives you general human capital. It's the type of capital that raises your productivity in a variety of different settings, whereas a trade

type of education gives you specific human capital. It raises your productivity in a particular setting. When times are uncertain or when there is a significant amount of change, it's the general human capital that allows you to respond to economic changes. That's one of the reasons why I have such a strong belief in the value of a liberal arts education.

If you look at the job market today, fifty percent of the jobs did not exist twenty years ago. It's impossible to prepare for those types of jobs by going and getting a trade. What you need to do is to learn how to think logically, communicate clearly, act creatively, and live ethically — all of those things that a liberal arts education helps you to do. That's an essential part of general human capital.

RM: Let's break open this idea of worth and focus first on finances. Families may spend around \$200,000 over four years. Students may walk away with \$25,000 in debt. What can we say about the value of a college degree in financial terms?

LS: College graduates now earn on average between \$1 million and \$1.5 million more than high school graduates over the course of their careers. So if you do the calculations just on purely economic grounds, it's unambiguous. The cost of education is not only worth it, it's actually a bargain.

JC: I agree completely. When we talk about \$25,000 in student debt, it strikes me that the cost of an average new car in the US is roughly about \$30,000. You're going to use your car for only a few years. A college education lasts a lifetime. Of course, when you buy a new car, you drive it off the lot. There's immediate satisfaction. When students graduate and have their degrees in hand, they naturally anticipate an immediate payback. What takes time to sink in is that it's a very gradual payback over a lifetime. College offers a different satisfaction.

RM: Let's look at worth now in non-economic terms. What does a college degree bring besides economic benefits?

LS: Let me tell you a story from my childhood. My father was an academic and I joined him for a program called "Semester at Sea." One day we were sailing from Colombo, Sri Lanka, to India and all of the professors spoke about their experiences in Colombo. I learned something profound that day that led me to go into higher education.

The first person to speak was my father. He was an urban economist, so he spoke about how the height and arrangement of the buildings could provide indications of the income distribution, the cultural prohibitions, and the role of public transportation. Once he mentioned these things, I thought, "Oh. I see what you're talking about. I understand that in a way I didn't get it before."

There was a geographer who noted how green and lush it was near the coast, but that as you drive north over a mountain range, it became drier. From that he was able to tell what directions the storms came from and what the rainfall meant about the economy. I had taken that same drive, but I had not even really noticed that.





What I realized was that you *are* what you *know*. Your experience moving through this life is really connected to what you understand. Knowledge makes it so much richer.

JC: Your examples are fascinating, in part, because I grew up in Colombo, but beyond that, what you're pointing out with your father and the geographer is how knowledge provides connections — connections between people, connections between societies, bridging of cultures, abilities to understand others in good times and bad, in peace and in war.

RM: We've been thinking in terms of the benefits to individuals, but what about the benefits to society at large? What are they? Do we have a way of measuring them?

LS: There are social returns and some are measurable. Economists have estimated the return to society that goes beyond the private return to the individual is between 2 percent and 5 percent. Here are some of the ways that plays out. Education lowers unemployment rates. The unemployment rate of college graduates is about a quarter of that of high school graduates. When the percentage of college-educated people within a town goes up, the wages of non-college educated people also goes up. College graduates are less likely to be smokers, less likely to be overweight, and more likely to exercise, so their healthcare costs are lower.

College graduates are also more likely to vote and volunteer. Thomas Jefferson said, "When people are well-informed, they can be trusted with their own government." The value of better citizenship is not so easily quantifiable, but I believe it is clearly there.

JC: Think about this — higher education helps us have more people who speak foreign languages. Some of these people may be able to negotiate an agreement that will increase trade or prevent a war. The trade may be quantifiable, but how much will be saved by avoiding the cost of war?

In March, I was asked to justify the humanities before Congress. I was asked what relevance the humanities had in foreign

policy. Coming from IU, I could point to all the foreign languages we teach here. Say that you are at war and you drop troops on the ground in a foreign country. If those soldiers have some knowledge of the language and the culture, if they know something about the people they will encounter, there are higher survival and success rates. So, there are very practical returns, even though those practical returns may derive from this larger aspect of knowing the world and being engaged in it. So I think that's how we should be approaching it.

RM: Let's look to the future. How sustainable do you think the current model used by higher education is today?

LS: Change is inevitable and so institutions have to adapt to it. For example, we're much more concerned about financial aid than we were previously. Consider the Pell Grant. It's the largest form of federal support for college students and it hasn't kept pace with the rising cost of college. This is making education much less accessible to many people. We also have to look at the way in which we require people to apply for financial aid. They have to fill out a form called the FAFSA, and it turns out that the FAFSA form is more complicated than the IRS's 1040 tax form.

Universities are going to have to transform, just like every other segment of our society. That's the nature of it. Is it sustainable? Absolutely. There are some difficult questions we're going to have to answer but I'm relatively confident that there are answers.

"If you look at the job market today, fifty percent of the jobs did not exist twenty years ago. It's impossible to prepare for those types of jobs by going and getting a trade. What you need to do is to learn how to think logically, act creatively, and live ethically — all of those things that a liberal arts education helps you to do."



JC: There is the issue of the role of the state — in other words, the taxpayer — in the funding of education. Each and every individual taxpayer ultimately does benefit overall from the university system, so what contribution should they be making to sustain the system? Should the government be pulling away funding if education underlies the economic growth that states rely on? ■

An hour and a half is not enough time to cover this topic. The discussion continues online; log on to <http://collegeworth.blogspot.com> and tell us what you think.

Hit the Road, Hear the World

For the fourth time, Speech and Hearing Sciences Professor **Lisa Goerner** hit the road with a group of graduate students in September. The six-hour drive from Bloomington took the group to rural Kentucky, one of the poorest areas in the nation. They were there to work for Hear the World, a program that provides hearing testing and hearing aids to low income people in rural Kentucky, who travel from four counties to Red Bird Mission for treatment.

“Hear the World is supported by Phonak, a hearing aid manufacturer,” Goerner says. “Red Bird Mission has existed for over seventy years and so the people in this area of Appalachia have developed a trusting relationship with the services provided at the mission.” Hear the World volunteers try to make three to four trips a year to the mission so there is good follow-up for those with hearing aids. “In July, we went down to work at a health fair, providing hearing testing and then we also saw people who had gotten hearing aids in the past year or so,” Goerner says. “There is a waiting list of at least 100 people but there is not enough funding to obtain hearing aids for all of them at this time.”

Students in the department have an organization called the Student Academy of Audiology to raise funds for hearing aids.

Photos: Lindsey Stickans



The whole IU group: top, from left- Lisa Goerner, Greg Ellcessor, Carolyn Garner, Matthew Cross, Jenna Szymialis. bottom, from left- Lindsey Stickans, Sadé Crowley, Jillian Simison, Steffanie Webber, Jonathan Donovan Neukam, Hannah Fehlberg, and Jeannine Campbell



Jenna Szymialis chats with an elderly patient



Greg Ellcessor tests a first-grader



Jonathan Donovan Neukam with patient





The younger set, delighted to be getting tested



Sadé Crowley testing a first grader



Jenna Szymialis checks a machine



Packing up, Ready to roll!



Hannah Fehlberg shows a student what to do; Jenna Szymialis in the background

MAKE A CONTRIBUTION

Your contributions can help:

- Pay for student travel to participate in a Hear the World service trip
- Purchase hearing aids for low-income people with hearing problems

Chasing Einstein

Alan Kostelecky and the IU Center for Spacetime Symmetries

by Bruce Lilly



Did you hear? Reports of something traveling faster than light! Scientists in Europe recently released the results of an experiment in which they clocked sub-atomic particles called neutrinos breaking the sacrosanct speed-of-light barrier.

But wait a minute here. Einstein's assertion that nothing can go faster than the speed of light has been a bedrock principle of physics for more than one hundred years. Doesn't this news threaten to shatter our most fundamental understanding of how the universe works? Well, maybe not. In fact, the news isn't disruptive to the ideas of a group of physicists at IU led by **Alan Kostelecky**, distinguished professor of theoretical physics. Through work beginning more than twenty-five years ago, Kostelecky and his group of students and post-docs have created a theoretical framework for incorporating faster-than-light possibilities into the accepted model used by physicists.

Kostelecky reacted to the neutrino news with a mixture of skepticism and intrigue. "Extraordinary claims require extraordinary proof," he says, "and extraordinary proof in this case requires additional independent experiments able to reproduce the same effect." Until the results are corroborated by the work of other scientists, Kostelecky is reluctant to assume that the experiment has truly established something profoundly new. Experiments of

this sort involve a dizzying array of factors that must be controlled to a mind-boggling degree of sensitivity. In short, even though the people conducting the experiment are some of the best in the world, there is any number of things that could have gone wrong and skewed the results.

Nevertheless, Kostelecky is intrigued and excited, because if other experiments should indeed confirm that neutrinos can travel faster than light, he just might have some of the hard data he has long sought to support his theories. "I've spent most of my professional career working on this kind of possibility, so for me, it's tremendously interesting, and if it's true, it's a vindication of what I've been doing," says Kostelecky.

The focus of Kostelecky's research is spacetime symmetries and in 2010 the College established a center to promote work in this area. The IU Center for Spacetime Symmetries (IUGSS) has brought together IU Bloomington faculty from the physics, astronomy, and history and philosophy of science departments, plus faculty from the physics department at IUPUI. "We have people who are both theorists and experimentalists, which is rare," says Kostelecky. "There are other places in the country, and around the world, that are focused on exploring aspects of fundamental physics, but I don't believe there is any other center in the world that

focuses on this particular aspect and does so with the rather unique combination of expertise which we have here at IU Bloomington and IUPUI. It's quite a remarkable group of people."

To get at least a broad overview of the work being done at IUCSS, first recall that physicists have been wrestling with a big problem for decades. Einstein's ideas about gravity don't fully mesh with the quantum theory that describes the behavior of subatomic particles. Something has to give, but what? So far, experiments have not provided the clues needed, and no one has proposed a satisfactory theoretical answer.

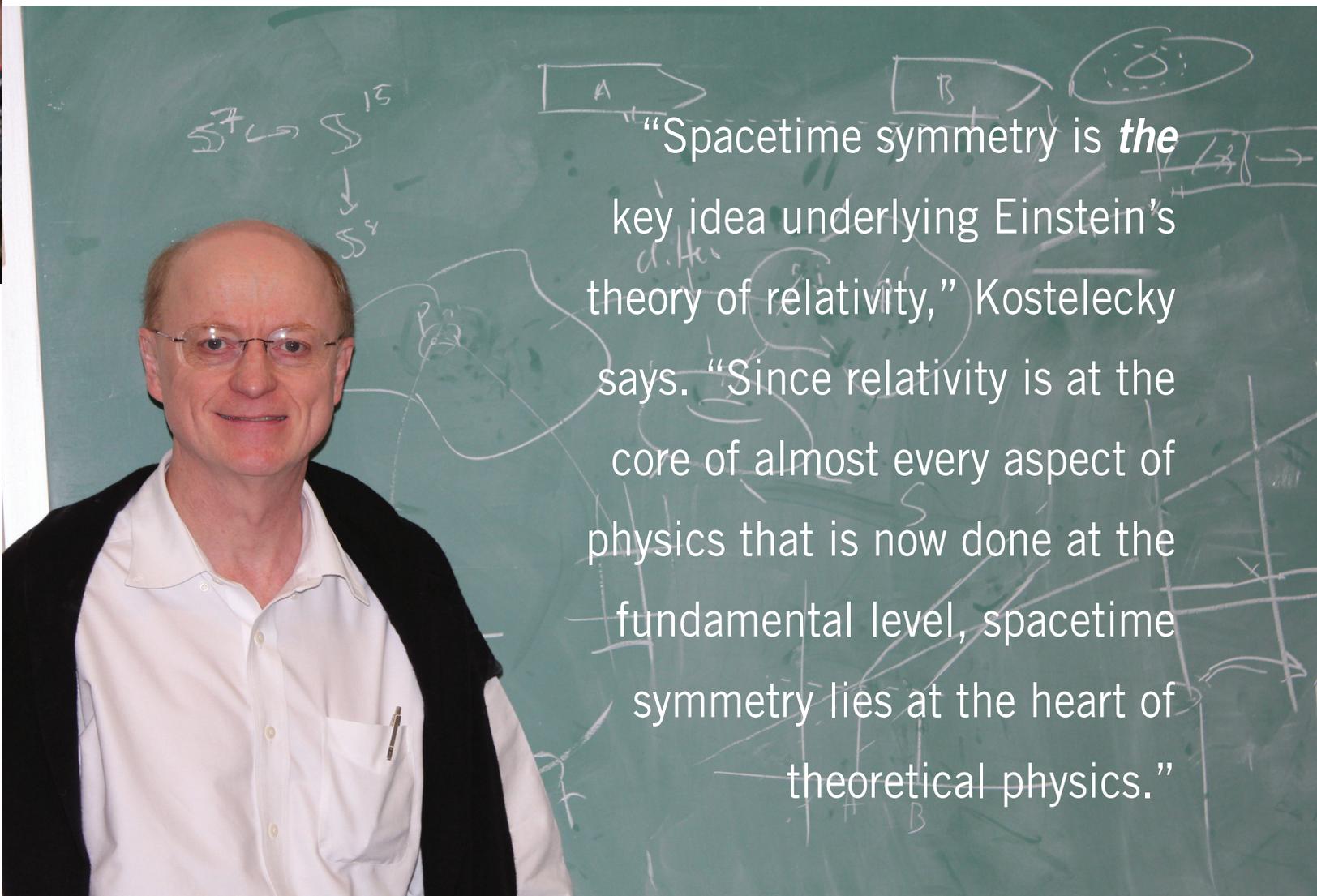
Kostelecky and his colleagues have approached the problem with the goal of uncovering experimental hints about the unification of gravity and quantum physics. They started with the accepted theory of fundamental forces and particles — a combination of Einstein's general relativity and what's known as the Standard Model — and augmented it to accommodate all possible ways in which tiny deviations from the laws of relativity could appear. Called the Standard-Model Extension (SME), this theory proposes a framework for exceptions to the accepted rules. Think of these exceptions as "violations," and think of spacetime symmetries as some of the accepted rules. IUCSS is seeking experimental

proof that these violations are actually occurring, even if at the infinitesimally minute edges of our world.

"Spacetime symmetry is *the* key idea underlying Einstein's theory of relativity," Kostelecky says. "Since relativity is at the core of almost every aspect of physics that is now done at the fundamental level, spacetime symmetry lies at the heart of theoretical physics." Many experimental physicists have responded to the ideas proposed in the Standard-Model Extension by devising ever more precise ways to test the theory. If Kostelecky's ideas are on target, experimentalists should eventually be able to find specifically predicted violations of spacetime symmetries, and a perfect example would be discovering that neutrinos can fly around faster than light.

But if neutrinos can move faster than light and the ideas in the SME are correct, don't expect any of your science fiction fantasies to materialize. We won't be any closer to time travel or Star Trek's "warp drive." However, IUCSS may be breaking new ground in the search for a fuller understanding of our physical existence. As Kostelecky says, "IUCSS is trying to explore and understand nature at its most profound level." ■

Photos: Jocelyn Bowie



One person's trash is another person's treasure. Or in the case of Monte Testaccio, one civilization's mountain of trash is Kelsey Bidwell's dream come true. Kelsey, a senior majoring in Latin and classical civilization, is also earning a minor in archeology, and she hopes for a career in artifact conservation.

All of which combines to make Monte Testaccio her kind of place. The Indianapolis native spent two weeks at the site, in Rome, at the beginning of the fall semester. The "monte" (mountain) in question is composed of "centuries of discarded amphorae (ceramic jars) — many of which still bear the markings of the contents and the exporters who transported them. Once an ancient pottery dump, Monte Testaccio is now one of the largest archives of Roman commerce in the world," according to the ArchaeoSpain website. ArcheoSpain is a field school that runs the Monte Testaccio program Kelsey attended.

"Participating in field work is such an important opportunity for students of archaeology," she says. "I had the great fortune to participate in a truly exceptional field school. I was surprised to learn that field schools are not just for students; half of our volunteer team were working professionals who were simply interested in experiencing archaeological field work."

"The excavations are actually carried out by a trained team of builders. The entire mountain is composed of pottery, so there is little expertise involved in excavating. It is extremely dangerous to dig in the pottery, so the builders must construct retaining walls in the pit to prevent cave-ins," she says. Participants toiled in the heat of the Italian summer, washing, cataloguing, and matching up amphora shards. They also had the opportunity to piece some of the shattered bits back together.

"I have always been very interested in art and artifact conservation," Kelsey says, adding that she hopes to go into art conservation as a career. "It is a hard field to get into. My plan is that working in archaeology, such as the work I did at Monte Testaccio, will provide the experience necessary to work as an artifact conservator."



Crates of pottery shards await washing and sorting.



In the Field

Ancient garbage dump
yields secrets of civilization

Photos: Emily Tankersley



A mountain of “trash”: In ancient times, amphorae were the main containers used for transportation and storage of goods.

They were massively produced because of their low cost, and were usually destroyed once they reached their final destination because it was easier to make a new one than to clean and reuse an old one. Between the 1st and the 3rd centuries, a spectacular number of amphorae were broken and dumped at a specific location in Rome near the Tiber River. Over the years, they formed an artificial hill of testae and crockery 45 meters (135 feet) high.

Many of the amphorae still have the maker’s seal stamped on their handles, while others retain titles and notes written with a brush or quill listing the exporter’s name and indicating the contents, the export controls, and consular date. All these notes make Testaccio the largest archive of Roman commerce in the world.

In addition, the epigraphy on the pottery provides first-hand documentation of the Roman Empire’s economy, the commercial relations between Rome and the provinces, as well as their eating habits.

— From the ArceoSpain website

“Supporting students keeps my family connected to IU.”

Judge Ezra Friedlander — Zeke, to his friends — is a man of energy and enthusiasm. When something interests him, he embraces it with all he’s got. In other words, he has the classic personality of an avid collector. He spent 10 years gathering an enormous collection of US Supreme Court memorabilia, since donated to the IU Maurer School of Law. His current passion is contemporary art glass; he is quick to demonstrate his grasp of the field and delighted to display some of his own pieces.

A big bear of a man and a native of New Jersey, Zeke still sounds like he’s from the East Coast, despite having lived in Indiana since his days as an undergraduate student studying History in IU’s College of Arts and Sciences in Bloomington. An uncle had attended IU, which is what got him interested in Indiana. He completed a BA in history in 1962 and a law degree in 1965 at IU. Friedlander’s plan to move back east and join his brother’s law practice was abruptly brought to an end when his brother, David, died as the result of an auto accident.

“Bob Lucas, who was at that time a trustee of IU, offered me a job in northern Indiana,” Friedlander says, “And I took it.” He’s stayed in Indiana for his entire career. After practicing law for 27 years, he was appointed to the Indiana Court of Appeals by Governor Evan Bayh in January 1993. He was reelected in 1996 and 2006.

An emeritus member of the College’s Dean’s Advisory Board, and a former member of the IU Foundation board of directors, Zeke’s generous contributions have been spread across the

IU and College landscape, including a graduate fellowship in history.

“Professor Robert Burns in Russian history was the first person I ever did any extra credit for,” Friedlander says. “He made me really enjoy history and motivated me enough to want to do more than just what was required.” Having graduate students in the class, he adds, really elevated the discussion. Friedlander has stayed in touch with the department through contact with professors such as former department chair James Madison. Why a graduate fellowship? “I knew from contact with Jim Madison that there was a need in the department,” he says. “There are so many scholarships for undergraduates these days, but there really isn’t enough support for graduate students.”

He has also endowed a scholarship in the Maurer School of Law and the David Friedlander scholarship named for his son, David, who passed away unexpectedly in 2009, while playing basketball. “David loved IU and he particularly loved basketball,” Friedlander says. “I started this scholarship while he was still living, to honor his interests. Now it is important to honor his life and perpetuate his name and at the same time provide help for someone who needs it.”

“I had a good seven years in Bloomington,” Friedlander says. “I got a good education and I made good personal contacts. Supporting students keeps my family connected to IU. I hope that those who are helped by these scholarships turn around and help others later on.” ■





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Economist Larry Singell
and humanist Jamsheed Choksy
debate a central question of our time:

IS COLLEGE WORTH IT?

See page 11 inside ...

Photo: Zach Hetrick