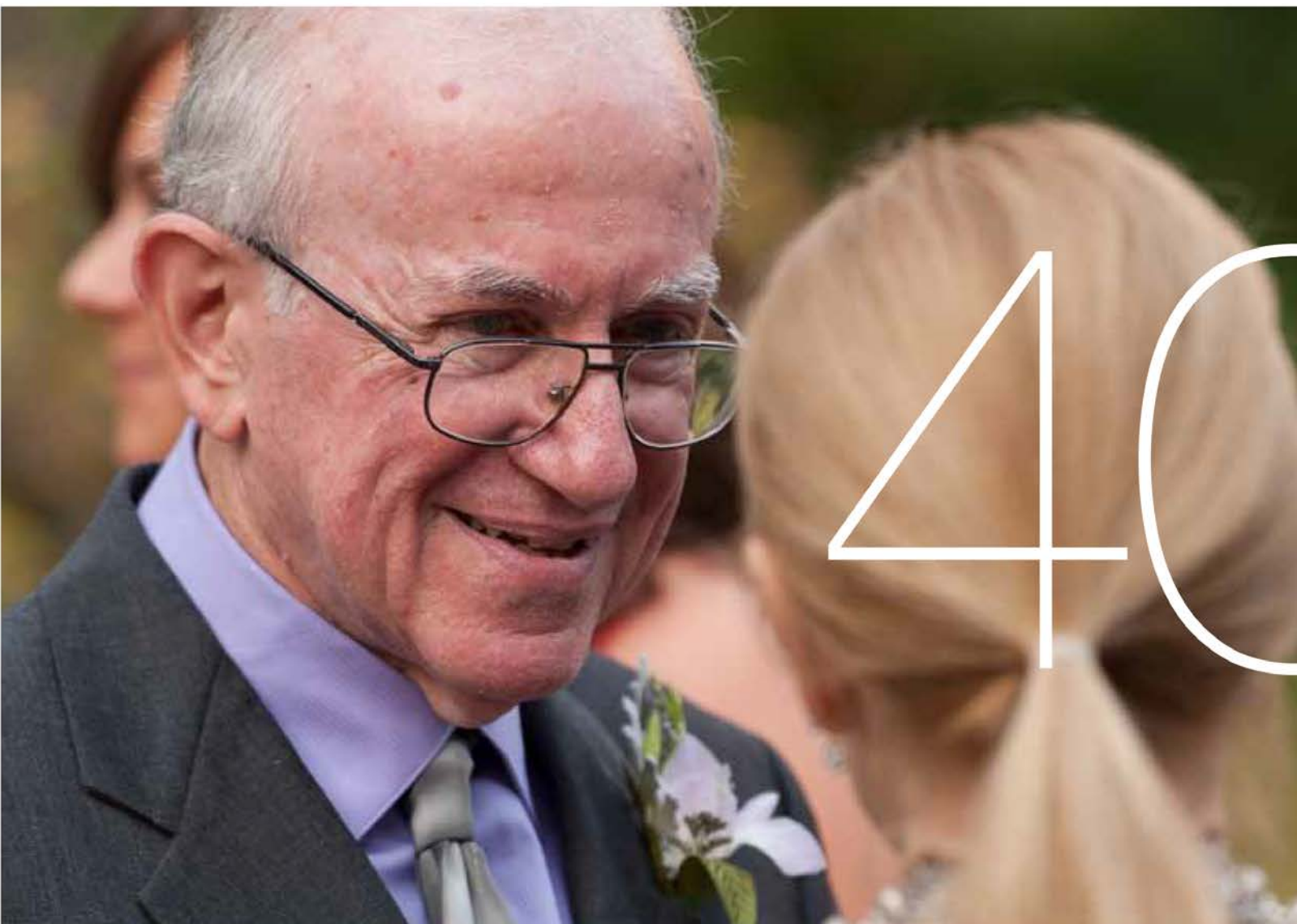




Fall  
2014

# IUPUI

*A magazine for alumni and friends worldwide.*



## PLATINUM ANNIVERSARY

Four decades after curing testicular cancer, **DR. LAWRENCE EINHORN** talks about the prospects of defeating — or learning to live with — other forms of the dreaded disease.



## **IUPUI Magazine**

IUPUI Magazine is published two times per year — spring and fall — for alumni and friends of Indiana University–Purdue University Indianapolis.

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FROM THE **CHANCELLOR**

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CHARLES R. BANTZ

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I am pleased to share with you the myriad ways the IUPUI campus is involved in improving the health and well being of persons near and far in this issue of the IUPUI Alumni Magazine. As a leading urban research campus, that discussion is a primary focus of your alma mater's mission.

The IU School of Medicine Students Outreach Clinic is a prime example of our prioritizing community engagement as well as honoring the virtues of service-based learning. Exploration into concussions on campus – precipitated by collaborations with the military and the NCAA – speak both to the power of partnership and addressing key societal needs.

Having shared the experience of my spouse following surgery this year, I have a personal appreciation for the potential to enhance physical therapy through robotics. The continued emphasis on diversity and inclusion at IUPUI are reflected in the piece on one of our Latino outreach programs. And the Three Steps for Life program contributes to the esteem and independence of aging citizens in the city, state, nation and beyond.

These IUPUI Alumni Magazine topics are essential and timely. They create an opportunity for critical engagements and significant improvements in the quality of life across the board.

The IUPUI Strategic Plan, Our Commitment to Indiana and Beyond, builds on the unique strengths of the IUPUI campus

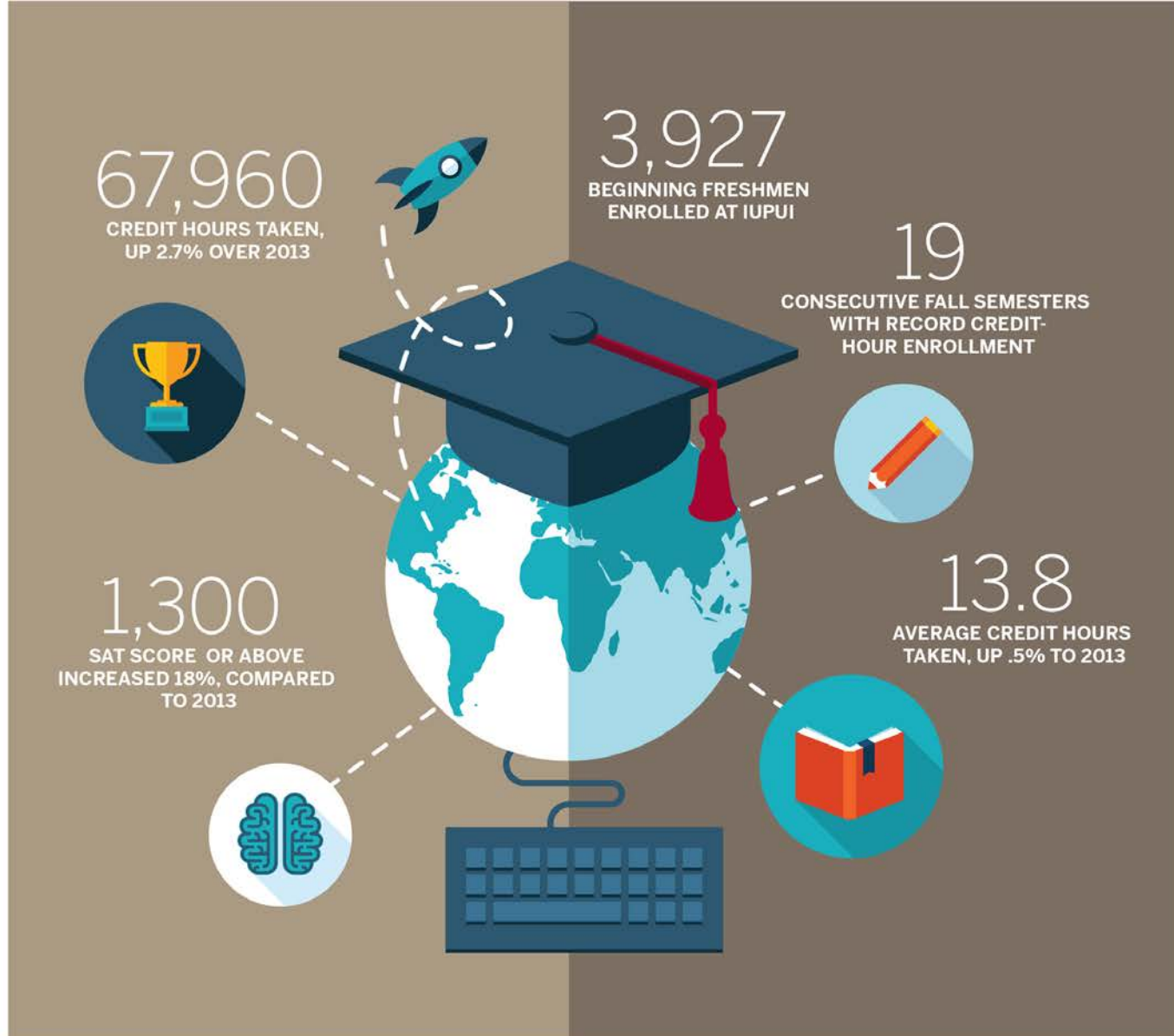
and its academic units to promote research and creative activity that will have a positive impact locally, nationally, and globally on the health and well-being of individuals, families, and the society.

As part of the IUPUI Strategic Plan, the IUPUI Office for Research has developed an ambitious and thoughtful strategy to establish a 'Grand Challenge Initiative' that emphasizes greater cross-disciplinary research and scholarly programs that incorporate undergraduate and graduate student learning. The Initiative includes identifying long-term, big, and bold research programs that address critical national and international quality of life issues by establishing cross-disciplinary teams of faculty and students who collaborate with the community at large, industry and government agencies.

Being the leading contributor to the pool of professional employees in Indiana, the challenge is for this vast pool – IUPUI alumni – to channel their resources, energy, influence and expertise toward the commonly-shared practices that facilitate constant improvement of the university and the highest levels of student success.

I congratulate those responsible for the work highlighted in this issue. They provide critical contributions to our campus and our community. I encourage all of the readership to this piece as an instrument of increased knowledge and engagement. Thank you!

A handwritten signature in black ink that reads "Charles Bantz". The signature is fluid and cursive, with a large, stylized "B" at the end.



*The fall 2014 freshman class at Indiana University-Purdue University Indianapolis was the largest and most academically talented in campus history, breaking records set only a year ago.*

With the semester that began Aug. 25, the latest figures show **3,927 beginning freshmen are enrolled** at IUPUI. That is a **6.5 percent increase** over the previous record for freshman enrollment, set in 2013.

“Our dynamic environment, distinctive programs, and commitment to student success are increasingly attracting talented new students to IUPUI,” said Nasser Paydar, executive vice chancellor.

Measuring academic talent by SAT scores, incoming freshmen outscored the record set by last year’s freshman class. The number of freshmen with **SAT scores of 1300 or**

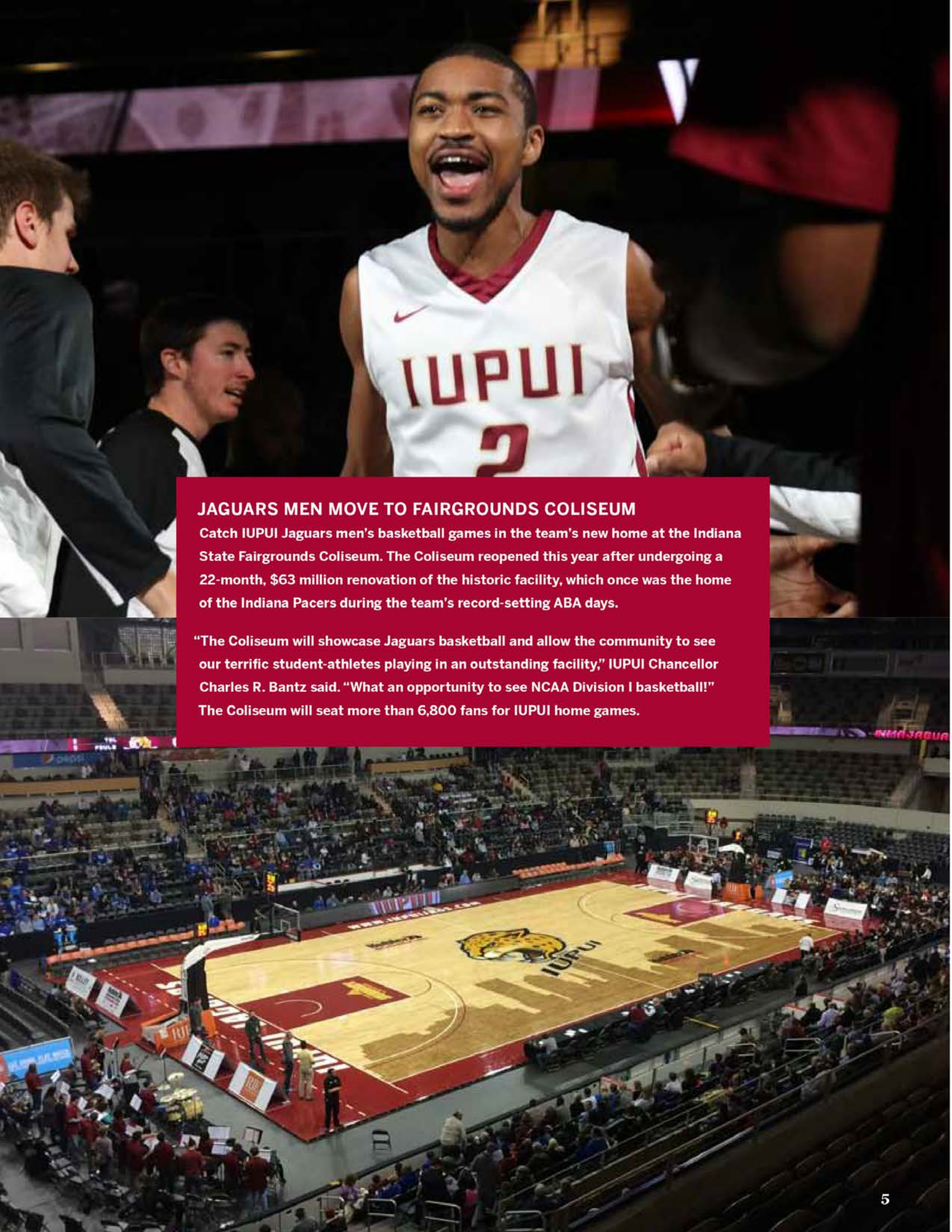
**above increased 18 percent**, compared to 2013. The number of freshmen in the 1100-1290 range rose 10.3 percent.

Not only are there more freshmen, but they are signing up for more classes. Freshmen are taking **67,960 credit hours, up 2.7 percent** over 2013. The **average credit-hour load for freshmen is 13.8** for 2014, compared to 13.3 in 2013 and 10.7 in 1999.

There are several reasons why more students are coming to IUPUI, including a reputation as a premier university campus; but none is more important than the enthusiasm voiced by new and current students about attending, said Chris Foley, director of undergraduate admissions.

“Students are excellent recruiters for the next class,” said Rebecca Porter, executive director of enrollment management and associate vice chancellor for student services.





### JAGUARS MEN MOVE TO FAIRGROUNDS COLISEUM

Catch IUPUI Jaguars men's basketball games in the team's new home at the Indiana State Fairgrounds Coliseum. The Coliseum reopened this year after undergoing a 22-month, \$63 million renovation of the historic facility, which once was the home of the Indiana Pacers during the team's record-setting ABA days.

"The Coliseum will showcase Jaguars basketball and allow the community to see our terrific student-athletes playing in an outstanding facility," IUPUI Chancellor Charles R. Bantz said. "What an opportunity to see NCAA Division I basketball!" The Coliseum will seat more than 6,800 fans for IUPUI home games.





# Menu

## NEW CAMPUS KITCHEN COMBATTING HUNGER

A video encouraging the IUPUI campus to combat hunger for students and the Indianapolis community grew into national support for a new Campus Kitchen at IUPUI in September. The student-led food rescue and distribution operation is the first Campus Kitchen in Indiana and one of approximately three-dozen such facilities across the country. The video generated enough social media passion that the campus won a national contest, earning a \$5,000 grant from The Campus Kitchens Project to establish the facility.

## NATATORIUM RENOVATIONS PART OF \$30 MILLION PROJECT

The city of Indianapolis, the IUPUI campus, Lilly Endowment and other civic organizations are teaming up for a new \$30 million partnership to improve the city's near westside neighborhoods and the campus, as well as renovate the IU Natatorium in time for the 2016 U.S. Olympic Diving Trials.

Under the agreement, the city will turn Michigan and New York streets into two-way thoroughfares from

West Street through the campus and across the bridges into the Haughville neighborhood. The project also includes improvements to pedestrian crossings, sidewalks, bicycle lanes, medians and other features.

Mayor Greg Ballard said the "street improvements will make it safer and easier for people to access campus and encourage investment and development in Haughville, Hawthorne and String-



town from companies seeking to be near IUPUI and the growing IU Health complex."





# School of Nursing celebrates centennial

The IU School of Nursing celebrated its **100TH ANNIVERSARY** this year, a century after five students participated in the first commencement ceremony in 1917 under the school's original name, the IU Training School for Nurses.

The school adopted its current name in 1956 and has become the **LARGEST NURSING SCHOOL IN THE COUNTRY**. *U.S. News & World Report* listed the school **15TH IN THE NATION** in its 2013 graduate school rankings.



↑ (From Top to Bottom) Indiana University Trustee Phillip N. Eskew, Jr., and IUSON alumna Ann L. Eskew at the Gala. | Dean Emerita Marion Broome proudly displays the School's new historical book. | Dr. Carroll D. Broome, President Michael McRobbie, IU's first lady Laurie Burns McRobbie, and Dean Emerita Marion Broome at the Gala. | Chancellor Charles Bantz and IU School of Medicine Dean Jay Hess at the Gala. | IUSON alums Rose Mays and Chad Priest chaired the anniversary celebrations. | Members of the IU School of Nursing class of 1949.





# PLATINUM ANNIVERSARY

*Four decades after curing testicular cancer, Dr. Lawrence Einhorn talks about the prospects of defeating — or learning to live with — other forms of the dreaded disease.*

Back in 1974, when Indiana University Distinguished Professor Dr. Lawrence Einhorn was a young, unknown oncologist at the Indiana University School of Medicine, getting testicular cancer was considered a death sentence. The thousands of males who contracted it annually — men typically in their 20s and 30s — usually succumbed within a year.

But 40 years ago, Einhorn helped change all that by adding a new, experimental drug called Cisplatin to the chemotherapy regimen for testicular cancer patients. To put it very, very simply, the drug uses trace amounts of platinum to disrupt cancer cells' DNA. Administered in concert with other drugs, it created something that's vanishingly rare in the world of medicine — a definitive cure for one type of cancer. Today testicular cancer is the farthest thing from a death sentence, with a roughly 95 percent cure rate.

But Einhorn hasn't rested on his laurels. Though 72 years old, he still zips around the Indiana University Melvin and Bren Simon Cancer Center at a pace younger men struggle to match. We managed to keep up with him long enough to ask some questions about his professional life, the future of cancer research, and his current project — finding effective treatments for lung cancer, which kills roughly 160,000 Americans each year.

## LET'S START WITH THE BASICS. WHAT IS CANCER?

"Cancer cells start out as normal body cells. They have certain growth advantages. Normal cells will grow, mature and die. But cancer doesn't undergo what we call programmed cell death. The cells don't get older and die of their own volition. Also they're capable of developing small blood vessels around the cancer cells, allowing it to proliferate and grow to other parts of the body. So it has growth advantages over normal cells, plus the capability of spreading and metastasizing. The word 'cancer' applies to over a hundred different diseases, none of them the same. What causes it, drives its spread, and what can be used to battle it can be very different from breast cancer to lung cancer to leukemia to lymphomas."

## WHAT DOES IT FEEL LIKE TO DEVELOP A CURE FOR CANCER?

"It's a great luxury to be able to treat a disease with curative intent rather than treat a disease in the hope that the patient will live a couple of months longer. But no one does anything by themselves. I was very fortunate to be here at Indiana University with a world-class urologist, (the late) Dr. John P. Donohue, which gave me access to patients. And the university has always been very supportive of our research. That means financially supporting it before anyone knew that it would be successful."



## HOW MANY PEOPLE HAS THE TESTICULAR CANCER CURE SAVED?

"In the United States it's a rare disease, amounting to only one percent of all cancer. So we see about 8,000 cases of testicular cancer a year, and of those maybe 2,000 or 3,000 could be cured with surgery alone. So there are probably about 5,000 patients a year in the United States, and obviously many more around the world, who have metastatic testicular cancer that for the most part are able to be cured because of the advent of platinum combination chemotherapy. Before this treatment, 95 percent of patients were dead within one year of diagnosis. And these were primarily people in their 20s."

## WHAT ARE YOUR DAYS LIKE?

"Wednesday is my lung clinic day. Basically Monday and Tuesday I see patients with testicular cancer and lung cancer and a variety of other unusual tumors. I teach students and medical residents. We have people who shadow us from other cities, states and countries, trying to learn some of the techniques we do here. I travel, give lectures, write papers, and do research on Thursdays and Fridays. Everyone in medicine has long days, and I love the job that I do. This is the best oncology job in the world because we're treating curable disease. Or at least we are during my Monday and Tuesday clinics."

## WHY ARE YOU PURSUING LUNG CANCER?

"Lung cancer is overwhelmingly the number one cause of cancer death in this country and in most parts of the world. In fact, over one fourth of all cancer deaths in the United States are due to lung cancer. I've always been interested in lung cancer, and the advances in molecular biology and in looking for genomic differences between cancer cells and normal cells has really exploded in the last five years. We have a lot of new targets to go after and a lot of new drugs that we can employ that didn't exist 20 years ago. These days there's not quite the pervasive feeling of pessimism in people who have the disease."

## ARE THERE ANY NEAR-TERM PROSPECTS FOR NEW LUNG CANCER TREATMENTS?

"Actually the most important thing isn't necessarily treating lung cancer but preventing it. That's why smoking cessation programs are so important, and why they need to start at the grade school level. The fewer cigarettes that patients smoke, the fewer lung cancer patients we're going to see. Because the connection between smoking and lung cancer and many



↑ Hundreds gathered at the Indianapolis Museum of Art to celebrate Dr. Einhorn. The audience included several testicular cancer survivors.

other types of cancers is no secret. It's still a challenge to eliminate the specter of smoking from our society, but that's the low-hanging fruit that would produce major benefit. We see about a quarter of a million deaths from cancer in the United States each year. We could cut that by about 35 percent if no one smoked at all. And remember that cigarettes also contribute to head and neck cancer, bladder cancer, cancer of the esophagus and many other forms of the disease. It's the number one cause of cancer."

## WOULD YOU HAVE BELIEVED, BACK IN THE 1970S, THAT 40 YEARS DOWN THE ROAD TESTICULAR CANCER WOULD BE ONLY ONE OF A HANDFUL OF CANCERS TO ACTUALLY HAVE A CURE?

"When you're younger you have a lot of youthful enthusiasm. It seemed that if you could cure one cancer with one type of treatment, then you could find a unique and specific treatment for other forms and cure them as well. But the results in solid tumors, including of course lung cancer, have lagged way behind. There are no tumors for which we don't provide supportive care, relief of symptoms and prolongation of survival. But for the most part we're extending life rather than curing disease."

## WHY IS TESTICULAR CANCER DIFFERENT? WHY DID IT LEND ITSELF TO A CURE?

"There are probably several reasons, along with some other reasons that nobody really knows. Testicular cancer patients are generally young and healthy and can tolerate aggressive chemotherapies. However there are many other, less-treatable types of cancers that strike young or middle-aged people that could also tolerate aggressive therapy. In the case of testicular cancer we have a very accurate blood test that allows us to make informed decisions about when to stop and start





↑ Dr. Einhorn and his wife Claudette at his 40 year celebration.

therapy. And when we're looking at chemotherapy with drugs like platinum, it's not difficult to get remissions with most common solid tumors. In fact it's used against 12 different types of solid tumors. But what's unique about testicular cancer is that remissions are durable, complete and sustained, whereas in most disease remissions, several months later the patient develops resistance to that drug. Testicular cancer is less prone to develop mutations that become resistant to chemotherapy than, say, lung cancer, bowel cancer, breast cancer, what have you."

#### **WHAT'S THE MOST COMMON MISCONCEPTION ABOUT CANCER?**

"There are two: That it's a death sentence, and that we're going to somehow eliminate it. Well it's not going to be eliminated, any more than we're going to eliminate heart disease. Because it's a disease of aging. But while we can't eliminate it, we can eliminate the fear of it. We can have open dialogues when people have cancer and let them know what their disease is and that their prognosis is, and try to have a world free from the fear of cancer. But we're never going to have a world free of cancer itself."

#### **WHAT'S NEW IN CANCER TREATMENT?**

"The revolution is with personalized therapy. Doing precision genomics and finding out what drives an individual cancer cell to become a cancer cell. In many chronic diseases – and cancer is a chronic disease, like heart disease or diabetes – we don't cure. We manage. The idea is to prevent cancer from growing and spreading, even if it's not surgically operable. Over the last decade major medical centers, including the IU Simon Cancer Center, have been involved in what's called personalized genomics, where we look at tissue and try to find the specific mutation that is actually driving the spread

of the cancer. And if we're lucky enough to find a specific mutation, then we and others can develop a drug to block that mutation and make a major difference. So we've moved away from chemotherapy, which was the only treatment for metastatic disease in the '70s and '80s and early 1990s, toward looking at personalized therapy. We want to find, say, the specific mutation that's driving a particular type of lung cancer, then see if we can develop a drug to block it. We could develop drugs and turn lung cancer into more of a chronic disease rather than a disease that patients usually succumb to within 12 months of diagnosis."

#### **WHERE WILL WE STAND IN ANOTHER DECADE?**

"I think if you asked that question in the '70s and '80s it would have been more chemotherapy. And if you asked that question from 2000 to 2010 it would have been looking at these molecular target agents and looking at genomic abnormalities. But I think in the next 10 years we're learning more and more about immunotherapy which had been kind of eschewed in the '70s and '80s as being a less effective type of treatment. But we learned that cancer is a foreign invader, just like bacteria or infections are a foreign invader. Usually our immune system is strong enough to recognize a foreign invader, so we don't die when we get the flu, for example. But the cancer cells are able to overcome what we call the immune surveillance. Drugs have been developed called immune checkpoint inhibitors. It prevents the cancer cell from blocking the normal activity of what are called T lymphocytes (a type of white blood cell) that use the immune reaction to fight cancer cells. These immune checkpoint inhibitors allow the host, namely the patient, to regain immunological control over the tumors.

They've had spectacular results in melanoma and kidney cancer, two diseases where the immune system is of pivotal importance. But they've also been very valuable in bladder cancer and lung cancer. These drugs are still experimental in lung cancer and bladder cancer, and were approved in melanoma and kidney cancer just last month. We're learning the dose, the schedule, what other drugs to combine them with. It's just like chemotherapy in its infancy, when we didn't know what drug to use with what disease and what dose and what schedule and what to combine it with. So I think the immune checkpoint inhibitors with the new forms of immunotherapy are probably what I would look into my crystal ball as being the big difference in the next 10 years. But as Yogi Berra said, 'It's tough to make predictions, especially about the future.' ■



# Exoskeleton CREW

**M**ention therapeutic robots and most people (most kids, anyway) might think of Baymax from *Big Hero Six* – not the collection of Rube Goldberg-esque machines housed at the Indiana Center for Advanced Neurorehabilitation (ICAN). But those devices, used to help improve the motor skills of everyone from stroke victims to children with cerebral palsy, are just as amazing. And the science that underpins them gets more amazing every day.

“This industry has only been around for five to eight years,” said Dr. Peter Altenburger, Co-chair of the IU Department of Physical Therapy. “The evolution of this technology is occurring very rapidly.”


Some of that evolution takes place right at this facility.

The ICAN Laboratory is a joint venture by the Department of Physical Therapy in the IU School of Health and Rehabilitation Sciences at IUPUI, and Neurorehabilitation and Robotics, a clinic of Rehabilitation Services at IU Health Neuroscience Center, whose staff treats patients clinically. Located at the IU Health Neuroscience Center

on West 16th Street in Indianapolis, it came about thanks to contributions from Robots to the Rescue, Riley Children’s Hospital Foundation, Methodist Health Foundation and the United Cerebral Palsy Association of Greater Indiana. Altenburger serves as director of research, and Dr. Ryan Cardinal as associate director. The lab offers clinical therapy for patients of all ages, does groundbreaking work with kids (particularly those with cerebral palsy), studies how to integrate therapeutic robots into a well-rounded physical therapy program, and trains a new generation of therapists in their use.

“Our goal is to be a leader in determining the impact of these machines on rehabilitation as well as helping to educate the population on what this technology is and what it can do,” Altenburger said.

The facility uses five rehabilitation robots – or rather, machines that can technically be called robots. All are internally powered and use computers to govern their movements. But that’s where any similarity to C-3PO ends. They’re basically sophisticated pieces of wearable technology – either powered exoskeletons that can move a patient’s



→ Dr. Altenburger and one of his patients on the Lokomat, designed to move its users legs in a natural walking pattern.

entire upper or lower body, or more specialized devices that manipulate particular joints. One, called the Lokomat and manufactured by the Swiss firm Hocoma, is a \$400,000 machine set over a treadmill that moves its user’s legs in a natural walking pattern. Another lower-body system manipulates ankle movements, while three other machines handle the entire upper body, the shoulder-elbow complex and the wrist, respectively.

Nationally, a relatively small number of facilities can provide this sort of machine-assisted therapy. The lab offers clinical help to patients struggling with a wide variety of problems, including stroke and traumatic brain injury. But what really sets them apart is their work with kids. It’s one of the few robotics clinics in the country focusing on both the upper and lower extremities of children. Kids can be a tough fit because they regularly “grow out” of their therapy,







*Obviously the need is great, but what you find in the health care industry is that almost everything is initially designed for adults, and then they try and shoehorn kids in. So nothing fits quite right. I was all for working with kids because the technology was really cutting edge and we need to be at the forefront, and why not with kids? Because nobody ever seems to start there. It's been great. There's nothing quite like helping kids get better."*

– DR. PETER ALTENBURGER

and most cutting-edge medical technology focuses on adults.

"Obviously the need is great, but what you find in the health care industry is that almost everything is initially designed for adults, and then they try and shoehorn kids in," Altenburger said. "So nothing fits quite right. I was all for working with kids because the technology was really cutting edge and we need to be at the forefront, and why not with kids? Because nobody ever seems to start there. It's been great. There's nothing quite like helping kids get better."

Though work is ongoing, the broad outline of exactly what these therapeutic robots can accomplish is emerging. One of their chief strengths is the sheer

volume of work that a tireless machine can help a patient accomplish. And in physical therapy, where the goal might be to, say, teach a child the correct way to walk, repetition can be vital.

"It's no different than shooting free throws in your driveway," Cardinal said. "You need a high-rep rate of practice to get better."

The robots offer benefits for both patients and therapists. For instance, the traditional physical therapist spends a great deal of time physically manipulating patients' extremities, helping them to, say, take a correct step. In the case of the cerebral palsy kids (or any child in therapy), they often must get down on their hands and knees to manipulate the patient's legs as they walk. Not

surprisingly, this sort of thing can make a therapy session as physically taxing for the provider as for the subject.

"You're crawling on the floor or maybe you're sliding on a scooter board behind them," Cardinal said. "And you have only two hands. So do you want to focus on controlling the patients' hips, knees or ankles? Within each given step, the joints that I'm not controlling may be creating error. Then I'm shifting as I'm keeping up with the patient and growing fatigued. So the input that I'm giving to the patient is changing a little bit."

The robot, on the other hand, never gets tired. And each movement they help the patient take is exactly like all the others. The therapist is free to oversee the session instead of crawling around on the floor. And usually a lot more work gets done. Cardinal estimates a human therapist can help a patient take about 50 feet worth of steps in one burst. A robotic session can cover a mile.

Plus, telling children they get to work out with a robot can often do wonders for compliance.

"With a 9-year-old child with cerebral palsy, they've been in therapy their entire life," Cardinal said. "And this is an opportunity to do something new and different and experience success."

Some young patients have made great strides (literal strides) not just because the robots helped them walk further and with better form, but because they showed them how much they were





↑ ICAN is one of the few robotics clinics in the country focusing on both the upper and lower extremities of children.

capable of doing. Cardinal recalls one child who tried to walk with her parents during store trips, but inevitably got tired and had to sit in the cart. After only a few robotic therapy sessions she found she could accompany them on foot, assisted by her walker, the entire way. The reason, Cardinal theorizes, is because the machines showed her that some of the limits she'd imposed on herself were only in her mind.

"This girl had never been in a situation to challenge how far she can walk," he said. "Being in the robot showed her that she could walk for an hour. That's kind of a cool thing."

And if the whole "riding in a robot" angle isn't enough to keep the kids interested, some of the units are equipped with visual feedback systems similar to video games that allow children

to complete various on-screen tasks using their real-time responses to the machine. The harder they work and the more they concentrate, the better they do. And they do seem to do better.

"We had one parent tell us that she'd been trying to get her daughter to use her right arm to eat breakfast for years," Altenburger said. "She would always fight them. They turned around the other day and she was using it without anyone having to ask her."

Though the lab does a great deal of work with kids suffering from cerebral palsy, it also sees its share of adult patients. Indeed, pretty much any patient who might benefit from a session with the robots could find themselves strapped into Lokomat or one of its compadres. The lab, with its rather large lineup of machines and ever-

growing pool of specially trained therapists, has become a *de facto* regional center, with users visiting from all over the Midwest and beyond.

"We've had patients from as far as Tennessee coming here twice a week to receive therapy," Cardinal said.

That level of interest will no doubt increase as the technology becomes more common and widely known. Which isn't the case right now. Altenburger recently spoke at a national seminar, where he asked his audience how many had seen (not worked with, but merely seen) a physical therapy robot. No one raised a hand. But like everything else in this growing field, the name recognition of these systems will probably improve rapidly.

"Ten years ago this technology didn't exist," Altenburger said. "They're still very expensive and still few and far between, but each successive model gets more and more user-friendly."

Right now the ICAN Laboratory is the only facility in the state offering such a wide range of therapy robots, along with the staff to get the most out of them. Because no matter how vital robots become to physical therapy, one thing won't change – the need for a well-trained human to oversee them.

"Robots, by themselves, don't do rehab," Cardinal said. "But they provide a tremendous tool that the therapists or researchers can use to supplement what we've always done clinically. We can create more repetitions and more intensity to make better outcomes for our patients." ■





STEP WORKOUT

3





# THERE'S NO PLACE LIKE HOME

An innovative exercise program could help seniors age more gracefully and avoid nursing homes.

Former football star Lorenzo Penn Jr. didn't realize how much strength and stamina he'd lost until an innovative new IUPUI-developed exercise program helped get some of it back.

Once upon a time, the 66-year-old Indianapolis resident was a prime physical specimen. A starting middle linebacker for Indiana State University, he also played semipro football for the Indianapolis Capitals and lots of other sports less formally. But then diabetes, weight gain and advancing age conspired to rob him of his fitness. Soon he found himself in a senior living community, getting around on a personal mobility scooter.

"I used to play football, basketball and all sorts of sports," Penn said. "Now I wouldn't jump off a curb."

The downward slide stopped when he was introduced to the 3-Step Workout for Life exercise program created by Dr. Chiung-ju Liu, assistant professor in the IU Department of Occupational Therapy.

"Our focus is on improving physical capacity and translating that capacity to do things at home so that seniors can take care of themselves," Liu said. "Not just exercise, but rehabilitation."

After completing the program, which is designed to help older adults regain the physical capacity, including muscle strength and endurance, needed for independent living,





Penn now gets around his apartment on his own two feet. He's not ready to tackle quarterbacks again, but now he can tackle everyday tasks that were once too much for him, such as laundry and food preparation.

"I can stand longer," he said. "Before, I couldn't stand long enough to cook a meal."

The potential usefulness of the 3-Step program, which is still in trials and has so far been offered to just shy of 50 people, could be considerable. Especially for America's 76-million-strong Baby Boom generation. As members of that gigantic demographic bubble slowly edge toward retirement over the next couple of decades, helping them stay healthy, active and independent could go a long way toward keeping a lid on the nation's health care bills. Because typically, a senior who can live in his or her own home is far cheaper to maintain than one who's forced by physical decline to move into a nursing home or some other assisted living arrangement, which could cost \$4,000 to \$8,000 per month.

The sort of disability that can force such a radical – and costly – lifestyle change doesn't usually occur overnight. Indeed, muscle strength and endurance can drain away so slowly that the sufferer may not realize how much he or she has lost until it's gone. If walking is taxing, a senior may tend to walk less, which causes their balance and stamina to further degrade.

And if standing for meals is painful, they may order pizza instead of cooking for themselves. Eventually, not wanting to do something turns into not being able to do something.

"You give up things little by little," Liu said. "You don't drive that far, don't go to the grocery store very often, don't cook meals. And because you cannot stand for too long in the kitchen, you use paper plates to avoid washing dishes."

While studies show that 90 percent of seniors want to stay in their homes, avoiding physical exertion or not having enough physical capacity can create a vicious cycle of decline that eventually makes solo living untenable.

That's the bad news. The good news is that what's lost can be recovered, either all or in part.

Liu designed her 10-week program in order to help older adults regain their degraded muscle strength and physical capacity so that they can keep taking care of themselves. She and Dr. Dan Clark, a senior scientist from the IU Center for Aging Research, are testing the efficacy of the new regimen thanks to funding from the Robal Center for Translational Research and the Retirement Research Institute.

The program includes the sorts of strength-building and functional exercises used in many conventional senior-



← (Left) Cori McCorkle, a 3-Step Workout for Life trainer and Master of Science in Kinesiology student at IUPUI, Lorenzo Penn Jr. and Dr. Chiung-Ju Liu. (Right) Mr. Penn performing exercises that have improved his quality of life.

focused workout programs. But instead of concentrating on general fitness, participants work to develop the skills necessary to tackle specific household tasks. For instance, a senior who wishes to regain the ability to haul a bag of trash down to the curb will use that task as an exercise during the workout.

“This training is tailored to them,” Liu said. “We will ask them what sorts of things are meaningful and important for them to maintain their independence. Some people don’t want to vacuum their house so there’s no point in practicing that. But some people think washing dishes would be important, and some say they would like to take a bath. So we’ll practice stepping into the bathtub, getting down, getting back up and stepping back out.”

Focusing on obvious, practical goals that the seniors select themselves can do wonders for compliance.

“We’re not just doing exercises,” Liu said. “We’re focusing on independence. And the purpose is for people to age in place. It’s using exercise as a means for them to regain their physical capacity and be able to do things again. Exercise gets people stronger and improves their ability to live independently. But we need to be able to harvest those gains in physical capacity and use them to help people actually do things.”

That emphasis on putting fitness to practical use might help motivate 3-Step participants to maintain the strides they make during the program, simply because they enjoy the activities their recovered strength gives back to them. In other words, regaining the capacity to do more things might make seniors want to do more things.

“It’s a lifestyle change,” Liu said. “They become more active because they want to retain their physical capacity.”

Though the 3-Step Workout for Life program is still fairly new, it’s already attracted enquiries from as far afield as Hong Kong. Liu has done most of her initial work on residents from senior congregate housing communities. In the future,

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– DR. CHIUNG-JU LIU

however, therapists versed in her techniques would conduct training sessions in individual patients’ homes.

“The difference is we bring the exercise to them,” Liu said. “And for some of the harder components of the exercise we actually have you practice the activities you want to do as part of the workout.”

Interestingly, just as some seniors don’t grasp how much they’ve declined until they attempt something they can no longer do, graduates from the 3-Step program often don’t realize just how much they’ve regained until it’s pointed out to them.

“Some people don’t notice how much they’ve improved until someone tells them they’re walking much better,” Liu said. “And when they get out of the car, they realize they don’t have to use their hand anymore to move their leg out of their seat and onto the ground. They can stand to cook a meal, step into the shower on their own – things they haven’t enjoyed for many years.”

That’s certainly the case for Penn, who greatly enjoys his newfound mobility and independence.

“I’m not ready for a football game, but I can handle dinner or the laundry,” he said. ■



# SCHOOL OF

# HARD KNOCKS

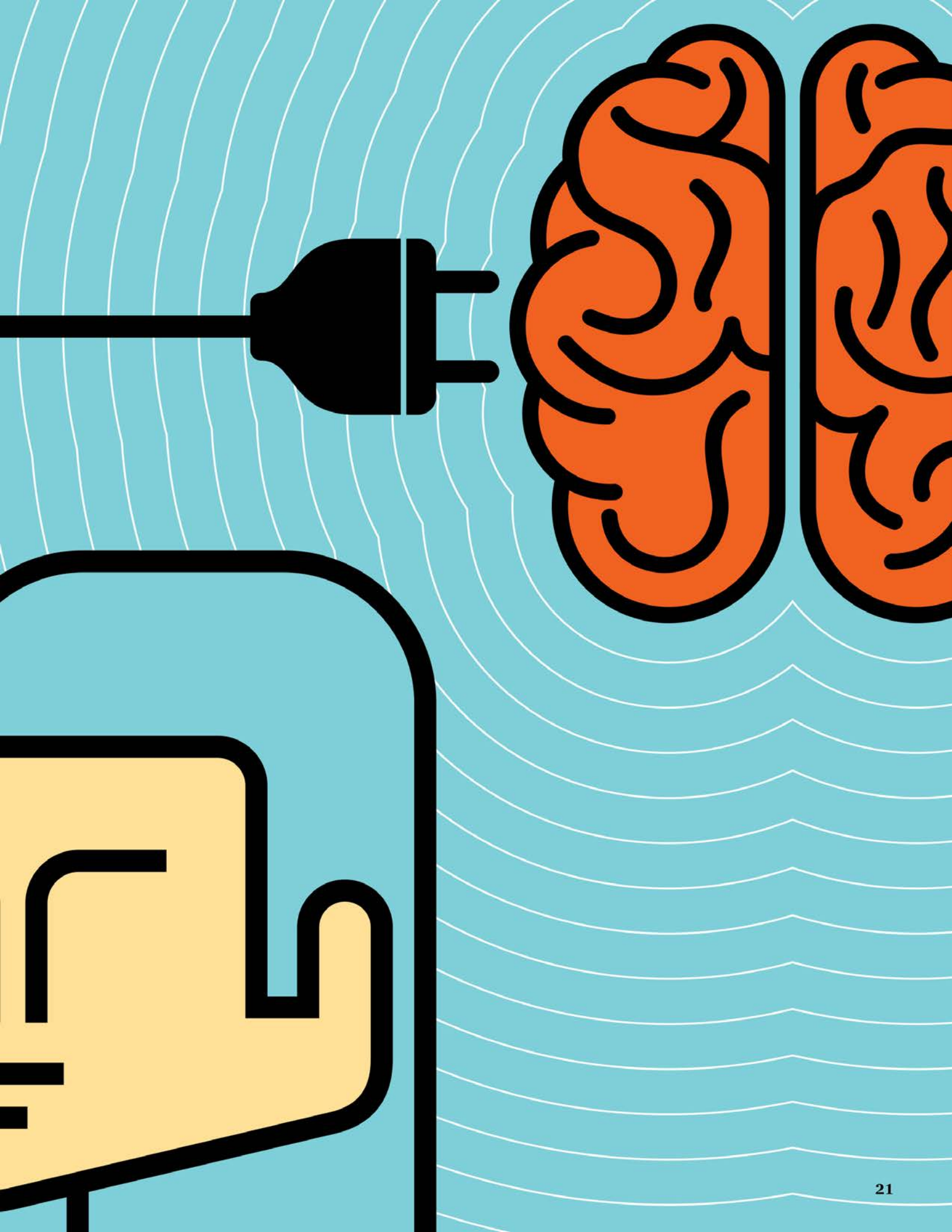
The IU School of Medicine takes a leading role in a massive new study that seeks to gain a deeper understanding of concussions.

Dr. Tom McAllister, Albert E. Sterne Professor and Chair of the IU Department of Psychiatry, knows exactly what a concussion feels like. He found out the hard way, while playing high school sports.

“I was a hockey player, and I was knocked to the ice,” McAllister recalled. “My helmet came off just as my head hit the ice. I was briefly unconscious, and the next thing I remember was the referee bending over me, asking if I was okay.”

That same frightening, disorienting experience is suffered by millions of athletes of all ages every year. According to the Centers for Disease Control and Prevention, between 1 ½ to 3 ½ million sports concussions happen in the US annually. That’s a big number, but it gets bigger if you count soldiers who sustain such injuries in battle and the numberless regular folks who might, say, slip on a snowy sidewalk.

Almost as alarming as the sheer number of concussions is how poorly they’re understood. Though the condition is making headlines these days as the NFL grapples with allegations that repeated blows to the head may have disabled thousands of retired pro football players, few large research initiatives aimed at unlocking the mysteries of this particular form of brain trauma have been conducted.





Until now, that is. The IU School of Medicine has taken a leading role in a huge new study funded by the U.S. Department of Defense and the NCAA. Called the Grand Alliance, the \$30 million effort includes both a Grand Challenge Educational Program and the CARE (Concussion Assessment Research and Education) Consortium. Which is where McAllister and his associate, Dr. Barry Katz, Chair of the Department of Biostatistics in the IU School of Medicine and the Richard M. Fairbanks School of Public Health, come in. McAllister is principal investigator for CARE's administrative and operations core, while Katz serves as director of the program's biostatistics and data management team.

The CARE Consortium will be led by the IU School of Medicine, in collaboration with the University of Michigan and the Medical College of Wisconsin. IU will serve as the program's administrative and operations hub and the central coordinating center. The school will also provide fiduciary oversight along with data and analysis management, bioinformatics, and biospecimen and clinical trial support.

Or to put it more simply, IU will coordinate the monumental task of collating and drawing useful information from what promises to be a raging torrent of raw data. Perhaps not surprisingly for a program with DOD involvement, the effort is as large and complex as Operation Overlord. North of 25,000 male and female varsity athletes from 30 NCAA Division I schools will participate in the program's initial three-year study period. Each will receive a preseason concussion evaluation to establish a baseline "normal" measurement, then be monitored during their entire season. Those who sustain concussions will be closely followed during recovery.

The NCAA's interest in this particular disorder is self-evident, given the number of athletes who sustain concussions each year. But the DOD also wants to gain insight into the disorder, because soldiers in the field can suffer brain trauma from, among other things, being too close to explosions.

But what, exactly, is a concussion? McAllister says that, in its most basic form, it's a force acting on a subject's head in a way that creates an alteration in brain function, such as confusion or incomplete memory. One doesn't even have to lose consciousness to sustain one.

Beyond that definition, however, things get murky. There's an almost breathtaking lack of long-term, in-depth research into

the problem, which means elementary things such as how long it takes to recover from one, how they can be detected, and when an athlete who suffers one can be cleared to resume playing, are matters of conjecture.

"The program would like to develop some fact-based parameters to help decide when it's safe for someone to start playing again," Katz said.

Right now, although there are some consensus guidelines, there's no accepted universal standard, which leaves college coaches and team doctors – and also high school coaches – no choice but to make their own assessments as to when their players are fit to play. Not surprisingly, their methods vary from school to school and coach to coach.

"There's no defined protocol, either in the NCAA or in general, for when athletes can be sent back onto the field," Katz said. "Every university uses its own medical staff."

The CARE Consortium's work is broken down into two immense pieces. The first is the aforementioned longitudinal study that tracks some 25,000 NCAA athletes.

"We're going to baseline everybody, and then those who sustain concussions are going to be followed intensely until they return to play, and then six months after their injury," Katz said. "It's a big project."

Actually, "big" hardly covers it. Especially the second portion of the work, which promises to create an unprecedented amount of concussion-related data. The CARE Consortium plans to fit out a select group of approximately 270 athletes in high-concussion sports (men's and women's soccer, men's and women's lacrosse, and football) at four universities with small, behind-the-ear accelerometers to wear during games and practices. If the player sustains so much as a tap on the noggin, the machines will note it. Over the course of the season the devices will measure every cranial impact and its severity. Players who actually sustain full-blown concussions will be monitored intensely during recovery, undergoing everything from MRIs to blood draws.

It's an almost unimaginable amount of information, made more complex by the fact that there's very little in the way of "junk" to discard. Even athletes who don't sustain full-blown concussions are of great potential interest, because





MORE THAN 60 RESEARCHERS, SPORTS MEDICINE SPECIALISTS AND EXPERTS IN CONCUSSION GATHERED IN INDIANAPOLIS TO OFFICIALLY KICK OFF ONE OF THE LARGEST INITIATIVES TO STUDY AND PREVENT CONCUSSIONS.

researchers would like to learn if taking routine, sub-concussion knocks causes cumulative damage.

“Even in people who have never had a head injury that left them even momentarily confused, the fact is that these athletes – football players, for example – may hit their heads 600, 700, 800 times per season,” McAllister said. “If they play football throughout their youth and then in high school and college, they’re absorbing tens of thousands of impacts. We’re trying to ascertain whether or not that kind of repetitive head impact is bad for the brain.”

It falls to Katz to oversee this raging data stream.

“This is going to be a lot of data and a lot of intense data collection,” McAllister said. “Thank God for Barry Katz. I think he’s got the hardest task of anyone in the outfit.”

The data could help produce some solid figures on the rate of concussion among athletes. That’s very much a matter of conjecture right now.

“The CDC estimates there are probably 1 ½ to 3 ½ million sports concussions in the US each year, but that’s probably an understatement, for a variety of reasons,” McAllister said.

For one thing, not every high school coach or school nurse knows a concussion when they see one. For another, many athletes conceal or minimize symptoms so they can keep playing. For instance, a college athlete may underperform on standard cognitive tests given at the beginning of the season. That way if they get a concussion, they’ll seem

better off when their compromised reflexes and cognition are compared to their bogus baseline numbers.

“If you’re an athlete who loves your sport, you know that if you report concussion symptoms you may get pulled from the game or practice,” McAllister said. “So people tend to underreport and to hide symptoms.”

Still, even if the CDC’s estimations are on the low end of the scale, that’s still a lot of concussions.

“For some of the contact sports, people report that anywhere from five to 10 percent of a particular team will suffer concussions over a given season,” McAllister said. “It gives you some idea of the prevalence.”

It also provides a bit of insight into the depth of the general public’s ignorance about the insidious dangers of this type of injury – and why a large portion of the DoD/NCAA effort is focused on educating the public about the importance of concussion reporting.

“As a person who went to public high school, it’s just horrible to me that these kids would risk their future for the opportunity to get back to playing a little sooner,” Katz said. “But kids don’t think about the long term.”

Katz and McAllister, on the other hand, are all about long-term thinking. The CARE study is funded for three years, but they (along with the DoD and NCAA) would ideally like to continue examining the problem for longer. Maybe a lot longer.

“I think what we add to the concussion literature would be extremely valuable,” McAllister said. “But some of the questions we’d like to answer are very, very long term. We would like to look at some of these athletes with and without concussions five, 10, even 20 years down the road. Although that probably won’t be done by me.” ■





# Extra Credit

STUDENTS FROM IUPUI AND BEYOND BRING MEDICAL, DENTAL, PHYSICAL THERAPY, SOCIAL WORK, AND LEGAL SERVICES TO AN UNDERSERVED INDIANAPOLIS NEIGHBORHOOD.

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The IU Student Outreach Clinic was created half a decade ago to bring medical services to Indianapolis's poor and underserved. But it's hard to say who's gotten the most out of the arrangement – the near-eastside neighborhood that receives everything from free medical checkups to physical therapy to dental work, or the Indiana University students who provide them.

"Some of the students have written in their evaluations that this has been the most meaningful service experience during their years in medical school, and that without it they would not feel that they were complete," said Dr. Javier Sevilla-Mártir, Clinical Director and Advisor for the IUSOC.

The IU Student Outreach Clinic is headquartered at the Neighborhood Fellowship Church on the Indianapolis near eastside, offering free primary care to the area's underserved and

uninsured. The surrounding community contains approximately 15,000 homes, with 50 percent of residents living at or below the poverty level. Not surprisingly medical services can be spotty, due to everything from lack of insurance to lack of transportation. The IUSOC, sponsored by the IU School of Medicine Office of Medical Service-Learning, sees patients every Saturday from 10 a.m. to 2 p.m. Medical care is provided by student and faculty volunteers from the IU School of Medicine.

The seed for the facility was planted in 2008, during the darkest days of the Great Recession. Sevilla-Mártir, Clinical Associate Professor of Family Medicine and Director for Hispanic Health and Global Health in the IU Department of Family Medicine, struck up a friendship with James Strietelmeier, pastor of the Neighborhood Fellowship Church. The activist minister had already turned his place of worship

into a de facto community center, offering everything from a clothing bank to free Sunday dinners.

Sevilla-Mártir was impressed. He volunteered to help with the Sunday dinner, and received a tour of the church. He asked if it might have room for one more community project.

"I said, 'Hey Jim, what do you think about having a student-run free clinic in this church?'" Sevilla-Mártir recalled. "He couldn't believe it. He said, 'We have been praying for this for 12 years.'"

Shortly thereafter, in January of 2009, Sevilla-Mártir and a cadre of medical students met at Starbucks on one of the snowiest days of the year to get the ball rolling. In August of 2009 the IUSOC held its first open house at the church. Sevilla-Mártir was moved by the reception it received from area residents, some of whom asked to contribute



money to the effort, even though they lived in one of the city's poorest areas and had little to spare.

"They were giving one dollar, or asking where they could donate something because the clinic meant so much to them," he said.

Actual treatment is overseen by IU faculty, but most of the clinic's day-to-day operations are handled by boards composed of student volunteers. There's quite a bit to handle, given the myriad university departments and outside agencies contributing to the project.

Medical care is provided by IU School of Medicine student and faculty volunteers, plus students from the Butler University College of Pharmacy and Health Sciences (who manage the on-site pharmacy). Other contributors include the IU School of Dentistry (which sees patients a few blocks away at the People's Health Center, 2340 E. 10th St.). Physical therapy is offered by the IU School of Health and Rehabilitation Science Department of Physical Therapy, and the University of Indianapolis Krannert School of Physical Therapy. Occupational therapy is conducted by the IU School of Health and Rehabilitation Services, Department of Occupational Therapy.

Free legal services are furnished by students from the IU Robert H. McKinney School of Law, in partnership with Indiana Legal Services; and students from the IU School of Social Work identify social needs, provide information on resources and offer referrals.

Jason W. White, fourth-year medical student and 2014 Medical Board Chair of the IU Student Outreach Clinic, says

→ Physical Therapy students work with patients to educate patients on how to take care of themselves.



← The IU Student Outreach Clinic is housed in the Neighborhood Fellowship Church in the near eastside of Indianapolis.

he "got hooked" by the project as a first-year student. The early years of medical school are mostly filled with book learning, but he longed for a chance to help patients. His personal mentor, Sevilla-Mártir, suggested he try the clinic. His experience there, and his association with Sevilla-Mártir, caused him to choose family medicine as his specialty.

"He put the bug in my ear," White said. "I volunteered and I really loved it and I kept going back. I'd love to continue working with the underserved. I could even see myself working in a clinic like this, where I could really do some good."

Much of his administrative work involves coordinating the School of Medicine's activities with the clinic's other medical providers. The IUSOC is all about collaboration. Or rather, interprofessionalism.

"It's no longer a top-down thing where the physician tells everyone what to

do," White said. "Instead, physicians sit down with a team that may consist of a social worker, pharmacist and therapist, and everyone collaborates on what they can provide for their patients. We really do that here. Everybody has a seat at the table, and we're always looking to add more partners."

On a typical Saturday clinic day, student managers and volunteers arrive between 8:30 and 9 a.m., unlock the rooms, break out supplies and set up their workspaces. They quickly convert a big room near the church's main entrance into a waiting room, and a nursery and back office into workspaces.

"We start letting patients in once we arrive," White said. "Usually they're lined up outside the door."

First- and second-year medical students take vitals and get histories, while third- and fourth-year students lead physical exams, with the younger students observing. They then present





the case to the attending physician and help formulate a plan of action. After the attending physician meets the patient and makes any last-minute checks he thinks necessary, the plan is explained to the patient and any necessary prescriptions written.

The process continues until – and often past – the clinic’s official 2 p.m. closing time. The students process approximately three dozen patients in one day.

The IU School of Health and Rehabilitation Science Department of Physical Therapy is a relatively recent addition to the IUSOC, having joined in October of 2012.

“We see a variety of patient conditions, such as back pain, knee pain, neck pain,” said Dr. Terry Loghmani, Associate Professor, IU School of Health and Rehabilitation Sciences, Department of Physical Therapy, and Faculty Advisor to the Indiana University Student Outreach Clinic. “Some have been dealing with difficulty with ambulation and balance. They’re fall risks.”

IU students share the clinic’s physical therapy duties with volunteers from the University of Indianapolis Krannert School of Physical Therapy by working on alternating Saturdays. Naturally this demands a different approach than the usual PT regimen, which might call for regular visits with a therapist. Since the clinic is only open one day a week, that’s an impossibility.

“The focus is on examining the patient, finding out what their most important needs are and what we can do to educate the patient to take care of themselves,” Loghmani said. “That might include a

home exercise prescription as well as self-care activities, such as how to get in a position of rest that would alleviate pain, or other different pain-relieving mechanisms.”

Pretty much every student in the IU physical therapy department is involved at some point with IUSOC, because first-year students, as part of their Integrated Clinical Education course, are required to participate.

“We worked with the Center for Service & Learning and found that sometimes the best way students can value that sense of social responsibility and community is to partake in it,” Loghmani said.

She thinks the students get a lot more out of the experience than course credits. Professionally, it’s a great chance – often the students’ first – to try out their training on patients. And also to experience some of that much-coveted interprofessional collaboration.

“That’s the change agent of the future,” Loghmani said. “You cannot prepare individuals to practice in an interprofessional, collaborative manner unless you educate them in this way. For instance, there was a patient that came up to physical therapy, and one of our students evaluated the patient and found the person had a likely fracture. We collaborated with medicine and they agreed and the person was referred on to get appropriate imaging and care.”

Dental work also plays a big part in the clinic – so big, in fact, that dentistry students operate from a separate location a few blocks from the Neighborhood Fellowship Church.

The IU School of Dentistry has participated in the IUSOC since its inception, but because they initially lacked their own facility students could only provide oral health instruction. That changed in 2011, when they found the 12-chair People’s Health and Dental Center, just three blocks away. Dr. Don Trainor, MD, Chief Medical Officer of HealthNet, made it possible for students to use the dental treatment facility. Its every-other-Saturday sessions offer, among other things, free cleanings, fillings and extractions for roughly two-dozen patients.

“I feel that we’re really developing a dental home for the community,” said Virginia Young, fourth-year dental student and the clinic’s Student Chair. “We’re seeing a lot of patients come back for continued care. One of the most rewarding aspects is relieving people of pain, either with a filling or a tooth extraction. Relieving pain is wonderful.”

Two-person teams consisting of a first- or second-year student and a third- or fourth-year student (who actually provides patient care) staff the facility’s chairs. The clinic is organized and staffed by dental students under volunteer IU School of Dentistry faculty supervision.

“We’ve got rock star faculty members that come and volunteer,” Young said. “We’ve got a really fantastic team of passionate people.”

She thinks the chief benefit for students, besides early exposure to patient care, is the chance to give back to the community.

“It’s very rewarding to the volunteers and the patients are very appreciative,” Young said. “I think the students feel that, and it’s very encouraging to





← IU School of Medicine students learn a computer program to generate patient charts to facilitate and streamline patient direction at the Saturday Clinic.

them to have this as one of their first clinical experiences.”

One of the Dental School’s most high-profile efforts is its Healthy Smiles for Employability program, which helps job candidates improve their smiles using everything from cleanings to fillings to full dentures. It also provides job training via the John H. Boner Community Center.

“I remember following one patient through the process, seeing what an impact it made on her smile and her confidence and her ability to communicate,” Young said. “We were able to provide her with full dentures. It’s extremely rewarding to be able to do that.”

There’s already anecdotal evidence that IUSOC care is both improving community health and cutting medical expenses. Pastor Strietelmeier reported that before the clinic opened he found himself shuttling parishioners needing urgent medical attention to the emergency room almost weekly. But since the clinic arrived he’s done it no more than two or three times.

“There is some evidence in the surveillance system of ER visits that this area has the deepest decline in ER visits in central Indiana,” Sevilla-Mártir said.

White says the clinic can also serve as a conduit for getting people into the formal health care system. The most common condition the students see is high blood pressure, followed by diabetes, followed by “acute” problems such as colds and infected bug bites. Ideally those last couple of items are what they’re optimized for. When people present with long-term problems, the plan is to help them find long-term solutions.

“We want to be an acute care clinic,” White said. “We work to move patients to better care if possible.”

In that vein, the IUSOC is constantly looking for better ways to provide long-term help. On-site IU School of Social Work students help patients find better care options, often by assisting them with securing Affordable Care Act coverage.

“It’s always better if they have a doctor they’ve seen for years,” White said. “It will help them have better control of their health.”

For the community, the benefits of the clinic go far beyond affordable medical care. Sevilla-Mártir thinks it also reassures residents that they have a lifeline to get help, and gives them

a chance to build relationships and friendships with the young professionals staffing the facility.

That roster of neighborhood helpers keeps growing. The IU School of Nursing recently joined the IUSOC. Next, Sevilla-Mártir would like to see the facility increase its hours – perhaps by adding a Wednesday afternoon session.

“We see an average of 35 patients every Saturday,” he said. “We see patients for five hours but still we don’t finish on time. So it’s a way to decongest Saturdays but also a way to provide more comprehensive care to patients with chronic illnesses.”

Sevilla-Mártir would also like to see the clinic concept expand its geographic reach by opening other Indianapolis facilities. And why stop there? The South Bend and Terre Haute satellite IU campuses have already set up their own, and Bloomington is looking into the idea. Sevilla-Mártir would like to see one at every IU-affiliated campus around the state.

“So now we just wish and hope that one day all nine campuses will have a student clinic,” Sevilla-Mártir said. “Expansion is the main plan for the future.” ■



# HAPPY CAMPERS



An innovative summer day camp helps Latino youth cope with culture clash.

Summer camps are mostly just for fun. But one new program, launched last summer on the IUPUI campus, could be a real lifesaver.

The pilot edition, called Your Life. Your Story. (YLYS), kicked off last June with a one-week day camp at the Herron School of Art and Design, followed by once-a-month booster sessions and concluding with another week of camp next summer. It's less about hiking and crafts and more about giving kids – or more specifically, 30 Indianapolis-area Latino teens – the life skills needed to cope with the stress of straddling two cultures.

Assembling the ambitious effort required input from across the Indy Latino community, as well as knowhow from throughout IUPUI.

“We went out to the community to find partners and we turned to IUPUI for both funding and expertise,” said Silvia Bigatti, Associate Professor at the IU Fairbanks School of Public Health and the project’s principal academic investigator. “We got a lot of partners from IUPUI and Indianapolis involved.”

Interest was so high because the need is so great. Data shows that Indiana Latino high school students face a 65 percent higher rate of suicide attempts and a 24 percent higher

rate of depression than their non-Hispanic white peers. In 2012-13 Bigatti, along with Katrina Conrad, Community Research and Outreach Coordinator at the Fairbanks School, and Tess Weathers, Research Associate, partnered with the Latino Health Organization on an Indiana Minority Health Coalition-funded examination of the cultural stresses faced by local Latino kids.

The results, gleaned from surveys of 86 adolescents and interviews with their parents, proved sobering. Almost 60 percent of the study’s participants showed symptoms of depression – symptoms that were seven times more likely to appear if the subject suffered from “acculturative stress” – the stress of coping with two cultures at once.

“Parents offered anecdotes of teens having trouble fitting in at home versus school, and they weren’t sure how to deal with it,” Bigatti said.

Interestingly, while some of the tension came from dealing with the outside world, plenty was also generated by kids’ interactions with their parents. Both age groups struggled to adapt to American society, but the teens usually moved faster, opening up not just a generational but a cultural rift at home. Sometimes the issues were as elemental as the kids losing Spanish proficiency while their parents struggled to learn English, creating a language barrier around the dinner table.





← Latino youth participated in a number of activities during summer camp that helped them to express their feelings and experiences.





Other issues were more specific but potentially just as problematic. For instance, Latino parents generally opposed overnight stays at friends' houses, which pretty much nixed the American tradition of sleepovers and slumber parties.

"They're very apprehensive about sleepovers," Bigatti said. "And kids feel that if they miss out on sleepovers they're missing out on opportunities to bond with friends."

On the bright side, the data also revealed that teens with good self-mastery (the ability to martial their inner strength to roll with life's punches) were six times less likely to suffer from moderate amounts of acculturative stress. With this revelation in hand, the team decided to develop an intervention program to help Latino kids increase their resilience.

The project's original executive team consisted of Bigatti, Conrad and Weathers from IUPUI, along with Virna Diaz, Executive Director of the Latino Health Organization, and Magdy Mirabal, a consultant with the Latino Health Organization. They hit upon the summer camp concept while sitting around a table at Starbucks, discussing the fact that Latino parents often lament their kids' lack of opportunities to do things "normal" American teens do.

Like, for instance, go to camp.

59 "We thought of a summer camp where we could increase their levels of resilience in hopes that they could better cope with the acculturative stress and see a decrease in depressive symptoms in the long run," Conrad said. "But we also felt that we couldn't just offer a one week summer camp and be done with it."

Instead, after searching the literature for evidence-based programs, followed by extensive consultations with community organizations and Latino parents and kids, the group crafted something far more comprehensive: A one-week day camp focused on building up the resilience of the campers, followed by once-a-month booster sessions for an entire year.

Then the hard work of turning the concept into reality commenced.

"Once we had the general skeleton of the idea, we reached out to people here on campus and in the community to find out who was interested," Conrad said.



That input added meat to the skeleton's bones and helped shape and focus the initial concept. For instance, the idea of a sleepover camp never made it off the drawing board because research reinforced the fact that Latino parents aren't fond of overnight excursions.

"That came up a lot in focus groups," Bigatti said. "Parents are much less likely to be interested if the kids have to spend the night away from home."

Eventually the YLYS team grew to include 21 professionals plus 13 student volunteers. The project's name, Your Life. Your Story., was developed by a Herron School of Art and Design class, led by one of the program's first official partners, Herron Associate Professor Youngbok Hong.

She and Monica Medina from the School of Education were the first contributors to join the team, but definitely not the last.

"We recruited partners from October of 2013 to May of 2014," Conrad said. "And the camp started in June. We used every resource the university has to offer. It grew into a huge team and it's still growing."

During the camp some 30 Latino teens, divided roughly equally between girls and boys, began each morning with





a resilience-building program called WhyTry. This was followed by a selection of art, music, dance, technology and storytelling activities designed to help them develop goals and identify barriers and opportunities in their lives. Each participant was also paired with an IUPUI student who served as their mentor.

Not surprisingly for a program called Your Life. Your Story., participants were asked to express their feelings and share their own experiences in media ranging from song lyrics to essays to a class called yoga dance. Bigatti worried that that last one might put off the boys, but it was enthusiastically accepted by both sexes – as was pretty much everything else on the menu. Especially storytelling.

“I think it’s because these teens have never really had the chance to express themselves and tell their story,” Conrad said. “And now they’re feeling empowered and learning how to write it and how to tell it. That was great.”

The kids didn’t just go their separate ways at the end of the week, either. They stay connected via social media, keep in touch with their camp mentors, meet for monthly booster sessions and gather for study tables. Conrad even roped her cousin into assisting one of the campers with geometry.

Taking this long view helps the kids continue to grow throughout the year. One young man, who along with his brother was initially considered strongly in need of intervention, has blossomed into a fervent supporter of the program. Recently on the group’s website he sagely posted, “If you don’t build your dreams, you’ll be hired to build somebody else’s.”

The team is already presenting very encouraging data on the first edition of the project, and plans to gather more by offering a second 30-person camp this summer. But though the program’s enthusiastic supporters, including Indianapolis’s Mexican Consulate, are already asking them to think bigger, Bigatti and Conrad counsel against making any sudden moves until the research data shows that what they’re doing works. And that can only happen if they repeat the experiment, hopefully with significant funding.

“Everybody’s pushing us to ramp up,” Bigatti said. “But we remind people that while it worked pretty well this time, let’s make sure it works really well by doing it several times. Then we can take it to other groups and other places and let it get adopted by others.”

The YLYS program certainly won’t have to struggle for traction in the Latino community, which from the beginning has given extensive input. That practical advice both increased the chances of success and secured “buy in” from the people it was designed to help.

“When it’s built by and for the community, there’s no struggle for acceptance,” Bigatti said. “It’s already up and running. The next step is building sustainability so the community continues it after you’re done with your research.”

Putting on a summer camp and supplying yearlong support work costs around \$20,000 – more if you factor in the research component. In the coming years the YLYS program will be further refined, so that it can serve as a template for any number of at-risk communities. Several of these, including groups that work with foster kids, are already showing interest.

“All adolescents want to tell their story and talk about their lives,” Bigatti said. “And they can do that, along with the resilience training, no matter their background. It can be generalized to many other groups. We see it growing and serving many communities.” ■





## Alumni Updates

### 1960s

#### Dr. Alvin Cohn

*IU School of Social Work, MA, 1960*

Dr. Alvin Cohn recently received the Indiana University School of Social Work Alumni Association Distinguished Alumnus Award. Dr. Cohn has spent over 50 years working in the field of criminal justice administration. His resume includes the training of over 75,000 persons in the field of criminology and criminal justice. He served as the Director of Training for the National Council on Crime and Delinquency. He has worked in numerous community based organizations, mental health care, military corrections, to name just a few. He is the author or co-author of six books and has published approximately 75 journal articles.

Dr. Cohn graduated from the IU School of Social Work with an MA in 1960. In addition, he received a BA from the University of Cincinnati and his PhD in Criminology from the University of California-Berkley in 1972.

### 1970s

#### Margaret Robb

*IU McKinney School of Law, J.D. 1978*

A 1978 magna cum laude graduate of IU Robert H. McKinney School of Law, Judge Margaret Robb's received a Distinguished Alumni Award from the law school's alumni association. The first woman to serve as Chief Judge of the Indiana Court of Appeals, she was appointed to the state's intermediate appellate court in 1998 by Governor Frank O'Bannon. She has been an officer of the Indiana State Bar Association (ISBA), a Fellow of the Indiana State Bar Foundation, Tippecanoe County Bar Association, National Association of Women Judges, and the Bankruptcy Section of the ISBA. She also serves on the board of the IU McKinney Alumni Association. Among the honors she has received, Robb was a recipient of a 1993 ISBA "Celebrating 100 years of Women in the Legal Profession Award," the Maynard K. Hine Distinguished Alumni Award for service to IUPUI and IU in 2001, the ISBA's Women in the Law award in 2005, the IU Alumni Association's President's Award in 2010, the IBA's Women and the Law Committee's Antoinette Dakin Leach award in 2011, and the Indiana Commission for Women's Torchbearer Award for 2014; she was also honored as a Trailblazer for her contributions to Indiana and the law.

### 1980s

#### Dr. Jeffrey B. Dalin

*IU School of Dentistry, DDS, 1980*

Much honored and widely respected within his profession, Dr. Jeffrey B. Dalin has been an unwavering champion of better access to dental care, pioneering a program of free dental care for children for more than a decade. Born and raised in St. Louis, he received a bachelor's degree in chemistry from Emory University and a DDS degree from the IU School of Dentistry in 1980.



Dalin started a free dental program for children in his home city of St. Louis in 2002. Working closely with the American Dental Association, he took the program nationwide in 2003. The ADA's annual "Give Kids a Smile" program—the centerpiece of National Children's Dental Health Month—takes place every February and has spawned many year-round programs. It has inspired thousands of dentists to open their doors to help improve the lives of kids suffering from dental disease. Each year, close to a half a million children in the United States receive care at more than 1,500 sites managed by more than 40,000 dental team members and volunteers.

#### Lacy Johnson

*IU Robert H. McKinney School of Law, J.D. 1981*  
Lacy Johnson recently received the Indiana University Distinguished Alumni Service Award, IU's highest award given only to alumni. A partner at the Ice Miller law firm, Johnson focuses his practice in the areas of procurement; sports and entertainment; public affairs and lobbying; and certified business enterprises. He has helped increase minority participation in business enterprises; was listed in "The Best Lawyers in America" under the gaming law category in 2009 and "Who's Who in Black Indianapolis"; and has been named an "Indiana Super Lawyer." Johnson is a member of the Congressional Black Caucus Political Education and Leadership Institute board, Dean's Advisory Council of the Krannert School of Management at Purdue University, and various other charity and political activities. A 33rd degree Scottish Rite Mason, Johnson is also a lieutenant commander in the U.S. Naval Intelligence Reserve.

## 1990s

#### Mindy Lankenau, OTR

*IU School of Health and Rehabilitation Services, BS, 1993*

Mrs. Lankenau has built her career in occupational therapy with over 20 years of experience in OT practice and leadership. After graduating with honors in 1993, she cultivated her

leadership in roles such as rehabilitation manager to OT director in a hospital setting. Her current position as Vice President of Clinical Services with Paragon Rehabilitation allows her to expertly advocate for OT legislation and compliance, broadly supporting the profession, while facilitating continued training and education for OTs at Paragon. Mrs. Lankenau holds memberships in the American OT Association, Indiana OT Association, National Rehabilitation Association, and National Association for Female Executives. In addition, she is passionate about addressing domestic violence, and is a member of the Indiana and National Coalitions Against Domestic Violence. In her personal time, Mrs. Lankenau enjoys the outdoors at her family's lake home in northern Indiana, and spending time with her husband, daughters, and most especially, her four grandchildren.

## 2000s

#### Siva Prasad Kumpatla, PhD

*IU School of Informatics and Computing, MS, 2004*

Siva Prasad Kumpatla is the Global Leader for Biotechnology Regulatory Sciences at DowAgroSciences LLC (DAS). He received his BS in Agricultural Sciences and MS in Genetics & Plant Breeding from Acharya NG Ranga Agricultural University (India), MS in Bioinformatics from IU School of Informatics and a Ph.D in Plant Molecular Biology from Texas A&M University. He has 20+ years of research experience that includes work in top academic and industrial laboratories in three continents. He worked on several model systems, agricultural crops and human molecular genetics and he leverages this diverse background in contributing to both basic and applied research in life sciences. Siva started his professional career as a Research Superintendent at ITC Limited (India) and later as Research Fellow at Leiden University, The Netherlands. His pioneering doctoral work on transgene silencing and postdoctoral work on the development of molecular tools earned him international recognition. At Dow AgroSciences (DAS), Siva led a technology

development program and developed improved/novel molecular and bioinformatics methods for the development of molecular tools for crop improvement. To further accelerate the development of molecular tools Siva joined the IU Bioinformatics program at IUPUI and the tools learned through this program enabled him to develop strategies and programs to generate large number of markers for application in molecular breeding of crops. His thesis work, published in the journal *Genome*, explored 50+ dicotyledonous genomes for markers. He received several top honors for scientific excellence at DAS and externally. His thesis work was published in the journal *Genome*.

## 2010s

#### Lee Christenson

*IU School of Public and Environmental Affairs, MS 2013*

As the director of the Public Health Preparedness and Emergency Response division at the Indiana State Department of Health, Lee Christenson spends about 95 percent of his time preparing Indiana for catastrophic emergencies and about 5 percent of his time actually responding to them. Christenson is currently preparing the state for potential cases of Ebola, a rare disease that originated in West Africa earlier this year.

Christenson credits his ability to stay calm in crises to his courses at the School of Public and Environmental Affairs. Christenson earned his bachelor's degree in Public Affairs from SPEA at IU Bloomington and a Graduate Certificate in Homeland Security and Emergency Management and later a Master of Science in Criminal Justice and Public Safety from SPEA Indianapolis.

When it comes to preparing for the worst, Christenson said having the right procedures in place is the best course of action. "We have plans, we have processes, we have training, and we have resources, but when the time comes to use them, if we don't have a clear understanding of what is happening and why, none of those things do us very much good."





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