

THE HEALTH & LIFE SCIENCES ISSUE

IUPUI

Magazine

INDIANA UNIVERSITY-PURDUE UNIVERSITY **INDIANAPOLIS**

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IUPUI

Magazine



FEATURES

LIFE SCIENCES

*The IUPUI campus has emerged as a key part of Indiana's growing life sciences sector, offering research and academic support for a state effort that could make Indiana an international leader in health-care and life science-related organizations. For more on IUPUI's role in the Life Sciences Initiative, see the story beginning on **page 3**.*

10 Engineering health

Ed Berbari has spent much of his academic career spanning the fields of engineering and medicine, but it wasn't until IUPUI launched its new biomedical engineering program that the veteran educator got a chance to share his dream.

12 Forgotten heroes

Mark Sothmann and Daniel Vreeman are spearheading a research project linking IUPUI with Ohio State in an effort to learn from—and provide help for—often-overlooked Vietnam veterans.

14 Android science

Karl MacDorman is blazing new trails in the study of how humans respond to one another. But in his groundbreaking field, the most instructive responses often come with a twist: one of the “humans” is an android!

16 Picture this

IU School of Liberal Arts alumna Elizabeth Moore has turned her college work into a career path, teaming with one of her IUPUI mentors to explore the devastating impact of a mother's alcohol abuse on her children before their birth.

18 Exploring the brain

IU School of Medicine researcher Tatiana Foroud is fighting an ongoing battle against diseases of the mind, using her own and her team's expertise to unlock the mysteries of neurological diseases like Alzheimer's, Parkinson's and Huntington's.



ABOUT THE COVER

The only former IUPUI student ever to take a stroll in space, IU School of Medicine graduate David Wolf spacewalks during a 2002 space flight. For more on Wolf's career in NASA and as a practitioner of the life sciences, see his feature story on page 7.

IUPUI TWO WORLD-RENOWNED UNIVERSITIES. ONE DYNAMIC CAMPUS.

IUPUI Magazine

A publication for more than 125,000 IUPUI alumni worldwide

IUPUI Magazine is published twice each year for alumni of the schools of Indiana University-Purdue University Indianapolis. The IU Alumni Association, the Indiana University Foundation and the IUPUI Office of External Affairs support the magazine.

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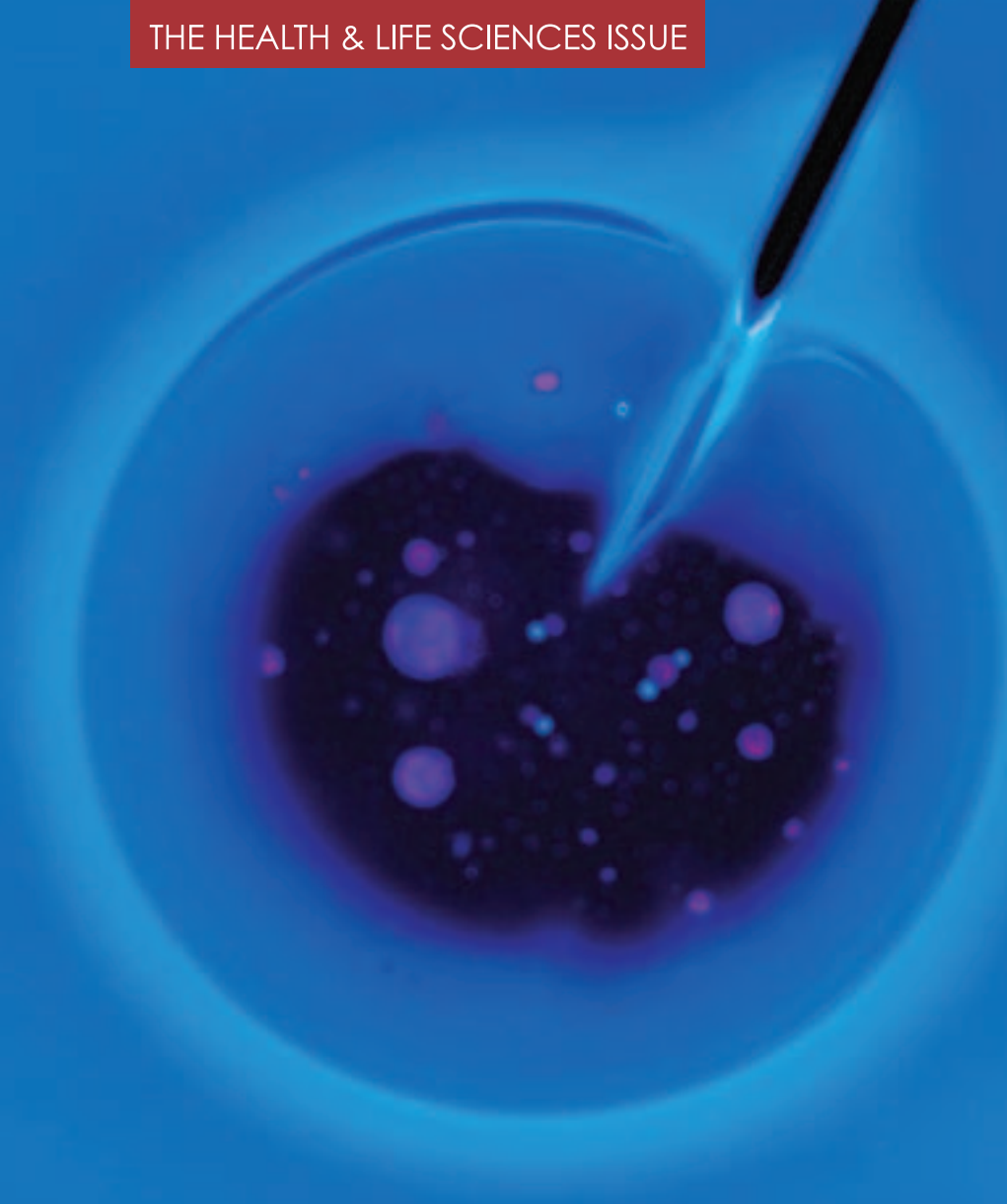
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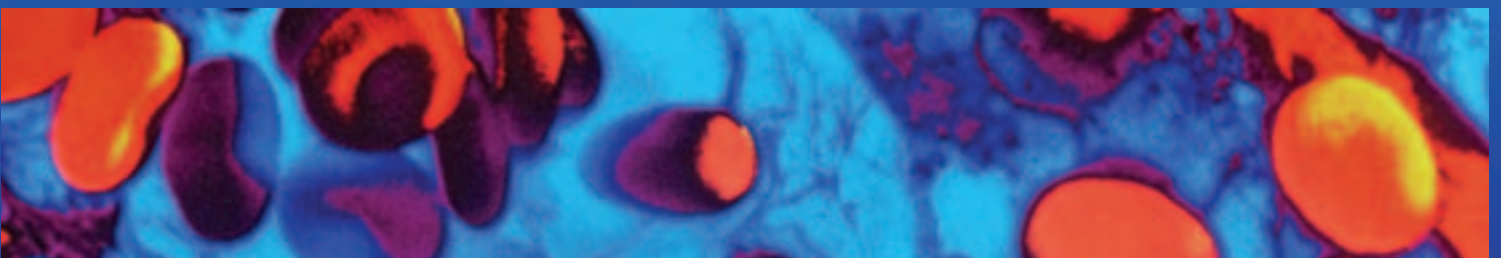
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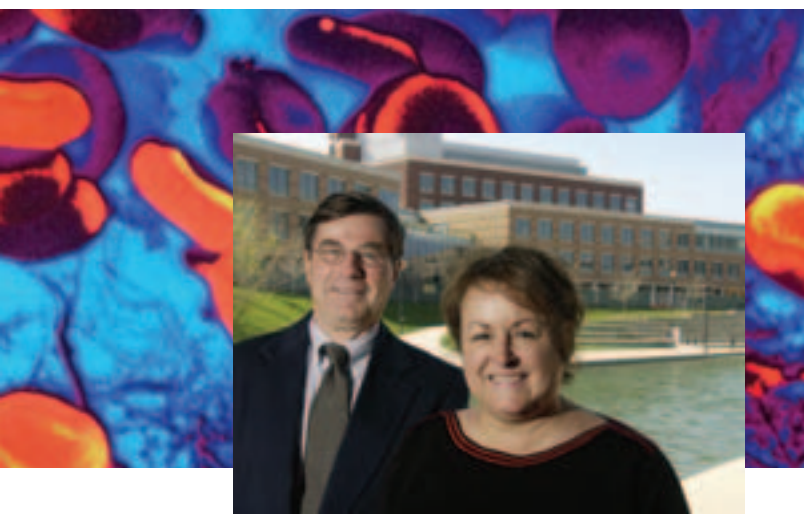
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In the heart of the IUPUI campus, RESEARCHERS EXPLORE THE NOOKS AND CRANNIES OF THE HUMAN GENOME, SEEKING CLUES ABOUT THE BODY AND ITS EXTRAORDINARY ABILITY TO SURVIVE AND THRIVE. OTHER TEAMS OF INVESTIGATORS WRESTLE WITH THE COMPLEXITIES OF THE MIND, AND HOW DISEASES CAN UNRAVEL HUMAN BEHAVIOR. STILL ANOTHER ENTERPRISING RESEARCHER TEACHES INDIANA PRISON INMATES TO TRAIN DOGS TO HELP PEOPLE WITH PARKINSON'S DISEASE AND OTHER NEUROLOGICAL PROBLEMS COPE WITH DAILY LIFE. ROOM BY ROOM, BUILDING BY BUILDING, SCHOOL BY SCHOOL, IUPUI RESEARCHERS—SOMETIMES INDIVIDUALLY, MORE OFTEN COLLABORATIVELY—TACKLE SOME OF THE WORLD'S MOST VEXING HEALTH CONCERNS IN A NEVER-ENDING EXPLORATION OF THE SCIENCE OF LIFE.



Exploring *the* Science of



Craig Brater (L) and Jan Froehlich are key IUPUI figures in the Life Sciences Initiative.

IUPUI researchers and teachers are a key part of the quest to make the life sciences industry the foundation of Indiana's public health and economic future. A new multi-campus Life Sciences Initiative, featuring a large number of IUPUI schools, centers and programs, was launched recently to achieve Indiana's goals.

Rapid advances are already being made because the state has harnessed the power of academia (IU, Purdue, IUPUI and more) with the private sector (Eli Lilly and Company, Roche Diagnostics,

Cook Group and others), the non-profit sector (Lilly Endowment Inc.) the resources of the state and city of Indianapolis.

Craig Brater, dean of the IU School of Medicine on the IUPUI campus, will oversee the project as IU's vice president with responsibility for the life sciences. The veteran administrator, part of the medical school faculty since 1986 and dean since 2000, is an experienced researcher and clinical pharmacologist who believes the unified approach "is the best road" to success.

"To accomplish something on the scale of what we've envisioned, we need the strengths of all of us," he says. "Philanthropists rarely have a taste for building facilities; they prefer to build on human talents. Governments have the resources to create the working spaces we need for our work. The private sector has research capabilities to offer through partnerships, and often will be the vehicle to put our work into action. And our university partners have the capability to attract top-notch minds, foster the research collaborations, and manage the creative process. We all have our interlocking roles."

Jan Froehlich, IUPUI's interim vice chancellor for research, believes the state's commitment to the life sciences offers campus-based researchers "a golden opportunity" to expand collaborations with major private entities like Lilly, Cook and Clarian Health Partners, which includes University Hospital and Riley Hospital for Children, both on the IUPUI campus.

"These well-established and thriving collaborations create a firm basis for continued growth of the life sciences enterprises on the IUPUI campus," says Froehlich, adding that the effort "will position Indiana to become a world-class center for the life sciences industry."

These types of partnerships will create many new jobs and stimulate economic activity, both Brater and Froehlich believe, and also will improve public health care throughout the state—delivered by doctors, nurses, dentists and other health professionals, many trained on the IUPUI campus.

Life

by Ric Burrous

IUPUI ready for future

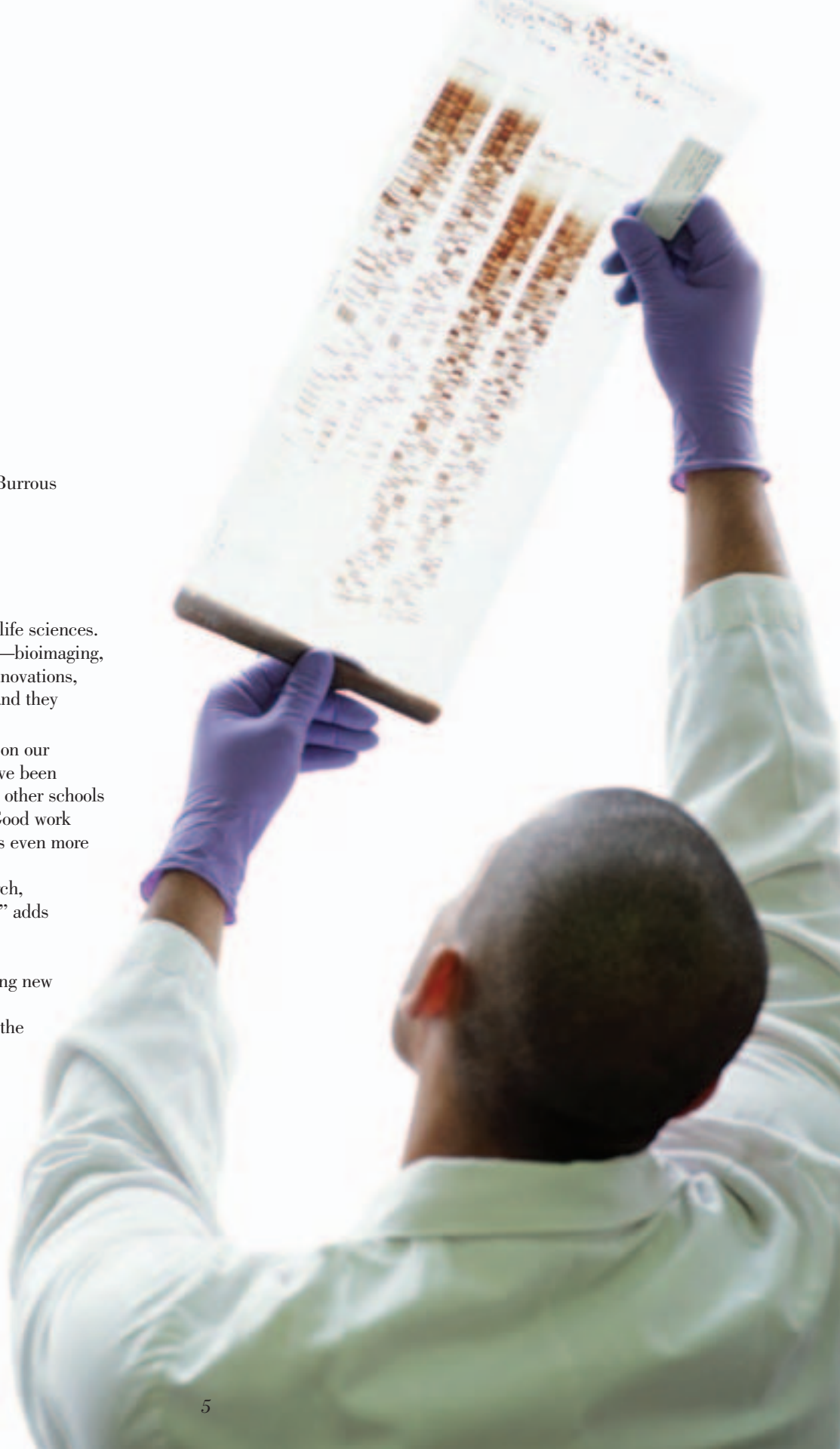
The campus is well positioned to advance the life sciences. Seven major focal points have been identified—bioimaging, cancer, diabetes, genes and proteins, health innovations, medical informatics and the neurosciences—and they weren't chosen at random, Brater says.

"We knew going in that we wanted to build on our strengths," he says. "Several of these areas have been emphasized at the School of Medicine and our other schools at IUPUI for the past 15 years, maybe more. Good work already has been done; we just wanted to focus even more on those areas."

"IUPUI is at the core of life sciences research, technology transfer and education in the state," adds Froehlich. "The strength of our campus is its entrepreneurial faculty—our research centers, institutes and the core programs all are breaking new ground in all areas of the life sciences."

Just as importantly, the two leaders believe the focus on life sciences has ignited a fire and passion among campus researchers that will drive them to surpass prior renowned achievements.

"You see it in their eyes and hear it in their voices," says Froehlich, an experienced researcher who also serves as a scientific co-director of the IUPUI-based Indiana Alcohol Research Center. "IUPUI has recruited top people from some of the most prestigious institutions in the world, and they're coming because they recognize what is happening here."



IUPUI has been able to recruit people from Harvard, Johns Hopkins, Duke, North Carolina and others who are well aware of the burgeoning reputation offered by the IU system and the IUPUI campus; “they want to be a part of that,” Brater notes.

“A lot of medical schools, including some of the most renowned in the country, are silo oriented,” he adds. “In those places, researchers only talk to others in their areas; it’s very difficult to collaborate outside those boundaries. But on the IUPUI campus and throughout IU, we have something very, very different—here, we constantly reach out to others in different disciplines.”

New ideas, perspectives

The “new way of working” has opened up entirely new approaches to ongoing projects, and created other possibilities, the dean says.

“We seek new ideas and new perspectives, different ways to understand and solve the problems we all face,” Brater says. “When bright people from engineering, science, physical education, dentistry, nursing or any of our other partners start talking with each other, you feel a new energy growing.”

NASA astronaut David Wolf, a 1982 graduate of the School of Medicine and a man who works daily in the life sciences, isn’t surprised at the revolutionary impact the field has had on the campus he once called home.

“At NASA, the disciplines of health and sciences, like engineering, have meshed in a lot of vital ways,” Wolf says. “The power of the combined knowledge of two or more fields gives us an energy and an enthusiasm that sparks new perspectives for all of us” who have made practical science their life’s work.

The collaborative atmosphere at IUPUI, combined with new facilities and available expertise in such “key areas as imaging, microscopy, proteomics, genomics and animal models is allowing all scientists on the campus to advance life sciences research in ways not previously possible,” Froehlich says.

“Expertise and assistance in areas such as informatics, biostatistics, ethics, technology transfer and community outreach facilitate research efforts by investigators in all scientific disciplines campus-wide,” the vice chancellor adds.

“It’s a time of unparalleled opportunity for IUPUI schools,” Froehlich says, “and not surprisingly, the campus is flourishing.”

Statistics illustrate her point: from 2003 through 2005, IUPUI averaged more than \$250 million in research and instruction awards per year; in the first six months of 2006, the number of awards to IUPUI investigators climbed by 6.5 percent and the award dollars grew by more than \$5 million.

Campus immersed in life sciences

Those numbers make Froehlich and Brater smile, but what makes both of them—and other campus administrators—even happier is how well integrated the Life Sciences Initiative has become among IUPUI’s schools and centers.

“More than 80 percent of the research we do here at IUPUI is life-science related,” Froehlich says. “Many of these projects have grown from ties to the School of Medicine, but a surprising number have emerged outside the traditional health-related schools—and that number is growing every year!

“Many projects were not begun as part of the Life Sciences Initiative, but are life-science related and complement the new projects being undertaken,” she adds. “The potential impact of these projects is considerable: longer, healthier, happier and more productive lives.”

Add in the entrepreneurial impact—companies launched by research-based ideas—and Indiana already is showing the potential state leaders had hoped would emerge.

The biggest step for the Life Sciences Initiative was a \$105 million Lilly Endowment Inc. grant that launched INGEN (the Indiana Genomics Initiative) in 2000. Another \$50 million Lilly gift in 2003 provided the resources to recruit talented new researchers, build state-of-the-art facilities, get dozens of new grant programs started and to launch a plethora of dreams, including the initiative itself.

“INGEN was a huge piece of the puzzle for us,” says Brater. “The benefits of that gift continue to ripple throughout our campus, our schools and the whole region. It governs where all the other pieces we’ve been able to assemble will fit.”

Impact on education

For Brater and Froehlich, the initiative is having another profound impact: health-related education.

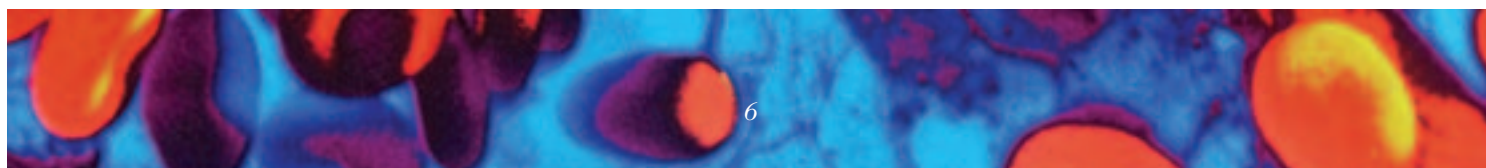
“We offer more than 130 life sciences-related degrees in a dozen schools and more are on the way,” Froehlich says. “Each year, more than 1,300 students graduate from IUPUI prepared for careers in the life sciences. IUPUI is becoming the place to go for life sciences education, training and job opportunities.”

The work begins early—well before graduation—for IUPUI students. Students like those in the Cox Scholarship Program roll up their sleeves as undergraduates and plunge into research life. They get hands-on experience under the direction of world-renowned scientists working on the edge of tomorrow’s discoveries. “Those opportunities have become a powerful lure for high-ability students,” Froehlich says, noting the campus has additional programs to increase research opportunities for undergraduates.

The education and training aspect of the initiative is vital for Indiana to achieve its goals, according to the vice chancellor.

“Programs like these at IUPUI ensure that the state has the trained workforce it needs to become a world-class center for the life sciences industry,” Froehlich says.

“The life sciences present new educational opportunities, to be sure,” adds Wolf. “And the partnerships between diverse fields and disciplines will prepare young people for entry into the multi-disciplinary careers that already are emerging, and that will continue to grow in importance in the years to come.”



Making dreams come true

by Ric Burrous

On a late spring night in 1967, an Indianapolis boy couldn't tear his eyes from a TV screen that took him along on Ed White's 23-minute, 6,500-mile "walk in space," making him the first American to achieve that feat.

AND DAVID WOLF'S LIFE WAS CHANGED — FOREVER. IN THOSE PRECIOUS FEW MINUTES, THAT 9-YEAR-OLD BOY TOOK HIS FIRST STEPS TOWARD HIS OWN STROLL TOWARD OUTER SPACE, AND HISTORY.

"Ed White's space walk intrigued me because he was part of this big team, an integral part of this grand system," says Wolf, a 1982 graduate of the IU School of Medicine at IUPUI. "I knew that night that I wanted to do what he had done."

Less than a decade after leaving medical school behind, Wolf had earned his astronaut's stripes; just 11 years after leaving IUPUI, Wolf was orbiting Earth as part of a Spacelab life sciences mission. And by January of 1998, Ed White had company in the list of Americans who have walked the heavens: David Wolf had reached his dream.

Eight years later, the Hoosier astronaut has walked in space three more times, spent the equivalent of five months in various spacecraft, practiced both his professions—engineer and physician—in orbit, and risen to become the chief of NASA's Astronaut Office Extravehicular Activity Branch, supervising the team that develops, tests and supports spacewalks.

Following a different path

Even as a child with a dream, Wolf knew his passion wouldn't come easily. The son of Dr. Harry Wolf—himself a School of Medicine graduate—wanted to follow his father's medical legacy, but apply those skills in new and very different ways. So he earned a Purdue University degree in electrical engineering, shifted to IUPUI and then Methodist Hospital to get his medical training, then set off for NASA as a biomedical engineer.

After his 1993 Spacelab mission, Wolf was chosen by NASA to train as a cosmonaut and fly on the Russian space station Mir in 1997. During that 128-day mission, Wolf got his chance to follow in White's steps.

"Of course, it was a bit ironic for someone who idolized the first American in space to make his first walk in space on a Russian space craft, wearing a Russian space suit," laughs the 49-year-old Wolf.

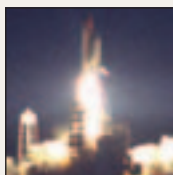
"It's a bit of a leap of faith that first time out the hatch," he admits with a chuckle as he recalls his first "step" into the emptiness of space. "Let's just say you check your tethers—twice!"

It was also ironic that the very thing that launched his dream very nearly proved to be the end of his career. On that walk, Wolf and cosmonaut Anatoly Solovyov were trapped outside the orbiting station by an airlock malfunction.

"That will focus your attention in a hurry," laughs Wolf, though he admits it wasn't amusing at the time. The two men cut short their work to solve the problem, but even with their combined expertise, they still came perilously close to running out of life support.

Wolf's walk toward space

HIGHLIGHTS FROM THE CAREER OF DAVID WOLF, THE IU SCHOOL OF MEDICINE GRADUATE WHO HAS MADE THE PENULTIMATE "HOUSE CALL"—TREKS INTO OUTER SPACE.



- He holds 13 U.S. patents.
- He has received more than 20 Space Act Awards.
- While aboard the space shuttle, he became the first American to cast a ballot from outer space.
- He has worked—and been honored—for his work in tissue engineering.
- During his numerous public speaking engagements, he highlights what he considers four critical components of NASA's public mission:



Fettman on the SLS-2 shuttle mission.

Teamwork is essential

Though he admits that getting stuck in the void of space still makes him “look back and shudder at times,” Wolf says the event drove home a point that NASA considers gospel; teamwork is essential, and everyone—everyone!—is on the team.

“When Anatoly and I were stuck, we had to improvise a solution,” he says. “Alone, neither of us would have been able to get back in; together, we were able to succeed.”

It also strengthened the bond between two men from very different cultures and

backgrounds, but a passion for exploration that unites them.

“We still look at each other with a gleam in our eyes when we run into each other at work,” says Wolf. In fact, NASA and the Russian space program still work closely together, giving Wolf a chance to regularly use the language he learned for his mission on Mir, a mission conducted completely in Russian.

The largest project in both the American and Russian space programs is the International Space Station (ISS), which Wolf helped construct during his last space flight in 2002.

“The ISS relies heavily on the combined strengths of both the Mir program and ours,” Wolf says. “We found that the best answers often lay on different sides of the ocean.”

Similarities to the life sciences

That notion of two different cultures blending to form a stronger whole fits Wolf, a real-life example of how the interdisciplinary nature of the life sciences—in his case, engineering and medicine—can produce amazing results.

“When I went to medical school as an electrical engineer, it was extremely rare. I was considered an anomaly,” he chuckles. “Now, it’s considered an excellent background to prepare for medicine.”

The life sciences are critical to NASA’s missions in space, Wolf says.

“At NASA, we move seamlessly across the traditional boundaries between engineering and the life sciences,” he says. “It’s not just medicine and life support systems. We use chemistry, microbiology, physiology—all those related fields that make our missions possible.”

The unique conditions available in outer space hold great promise for medical and scientific research. The properties of zero gravity in outer space—a significant variable that cannot be replicated on earth—opens up almost limitless numbers of new hypotheses and the means to test them. Gravity masks many physiological phenomena and interferes with “pure” tests of many systems.

“We quickly realized the value of being able to manipulate gravity as a variable in our understanding of the way the world works, either in human biology, or in our other research, even Einstein’s theory of relativity,” he explains. “The work we’ve done to permit human access to the extremely unforgiving environment of space enables such research, while also energizing our inborn spirit for exploration.”

NASA life is exciting

The increasing overlap between the fields of engineering, technology and medicine “make life at NASA exciting” to the second-generation doctor.

“The multidisciplinary work we do is a key part of a rich work environment,” Wolf says. “Each of the fields involved has powerful tools to offer. It’s the ability to apply those different tools that permits us to solve the unique problems we face in spaceflight, as well as producing innovative technology that improves our quality of life on Earth.”

Those solutions NASA has developed have shaped modern medicine, technology and many other fields, as well. That’s a trend Wolf expects will continue for as long as mankind explores the heavens.

“As we head back to the moon or even longer-duration flights to places like Mars, we’ll be seeking solutions to the problems we face in space, but also for those on earth,” he says. “On a flight to Mars, for example, we’ll be leaving Earth’s magnetic field, which means we will have to improve our countermeasures against harmful radiation exposure. It’s crucial in space, but those same developments clearly benefit life on Earth, too.”

exploration, inspiration, stewardship of the Earth, and spin-off technology.

- Men walk in space at approximately 17,254 mph, or 10 times the speed of a bullet (or 7.7 kilometers per second).



- In orbit, a “day” lasts 45 minutes, and so does a “night”.
- In space, ships can encounter 500-degree ranges of temperatures in the space of a minute. And we complain about Indiana’s changing weather?

**“YOU DON’T KNOW
WHAT QUIET IS UNTIL
YOU LOSE ALL POWER
ON A SPACE STATION!”**

— David Wolf



Career has altered perceptions

Life at NASA, whether orbiting hundreds of miles above the earth or working in classrooms and laboratories on the ground, has changed Wolf in ways both practical and profound.

“I’m more patient now,” he admits. “There was a time when, as pilots used to say, ‘my hair was on fire to ride the rocket.’ Now, I’m much more concerned that we at NASA continue to improve the human spirit and our quality of life (on Earth). There are so many useful directions we can go that the problem is which to choose!”

“People are thrilled by single, spectacular events,” Wolf says. “It inspires young people—heck, all of us—when we walk on the moon or in space, or someday send humans to Mars. The flip side is that the long grind of complex research is made up of many (apparent) failures. The ‘Eureka’ moments are hard-earned and far apart. We have to accept those failures as essential steps toward ultimate success.

“The important results are often not as we anticipated and don’t occur on a convenient, planned schedule—but they do result from the alert eyes of well-prepared researchers,” he adds. “The kind produced by our fine Indiana schools.”

In the meantime, Wolf goes about his day-to-day tasks.

“I have nicely varied days,” he says. “I might instruct other astronauts in spacewalk systems in our underwater facility—we have a whole space station under water. I might spend another day in virtual reality or an engineering laboratory. On still another, I might set up a new tissue culture alongside our biologists, exploiting microgravity to study breast cancer tumors. In all cases, we bring to bear the best and broadest talents of an interdisciplinary team to solve problems.”

After two decades of intensely challenging work at NASA, the astronaut still loves his job.

“I’m really living a dream here,” he freely admits.

“There is a richness to the work we do and an endless series of important challenges to tackle. That is exciting. Innovation is fostered by the collaboration of a broad range of academic disciplines, industrial partners, personalities and disparate cultures, each bringing a unique perspective.

“And even better, we often get to work with the students and professors from IU and Purdue schools,” Wolf adds.

“That in itself makes it personally worthwhile, exactly how I dreamed it would be.”

“Launch is absolutely thrilling; you go from zero to 18,000 mph in eight minutes. It’s like being on a football punted into orbit.”

— David Wolf



Engineering *the* Future of Health

by Ric Burrous

“Steve Austin, astronaut. A man barely alive. Gentleman, we can rebuild him. We have the technology. We have the capability to build the world’s first bionic man. Steve Austin will be that man, better than he was before. Better, stronger, faster.” —**THE INTRODUCTION TO EACH EPISODE OF THE 1970s SCIENCE FICTION TV SERIES “THE SIX MILLION DOLLAR MAN.”**



For Ed Berbari, what once must have seemed like a fanciful line from science fiction is remarkably close to scientific fact—just three decades later.

But the director of IUPUI’s fledgling biomedical engineering (BME) program in the Purdue School of Engineering and Technology isn’t surprised. In fact, his own career—which saw him start as a BME intern at Carnegie Mellon University in Pittsburgh about the time the TV docs were repairing Steve Austin—has been built on the same set of assumptions.

The program he helped launch in 2004 blurs the lines between the engineering school and the IU School of Medicine, marrying the two disciplines in new and inventive ways that have opened the eyes of research funding organizations—and just as importantly, begun attracting a new breed of students eager for the challenges of a program that’s diving into an undefined future instead of being bound by traditions.

High-quality students

Berbari, who has been at IUPUI since 1994 and holds dual academic appointments in both E&T and Medicine, isn’t at all surprised by the high caliber of students who have enrolled in the BME program.

“High achievers like our kids love to test themselves,” he says. “They get to immerse themselves in research projects from the start, and thanks to our partnership with medicine, they get to work in hospital settings—something a lot of them would like to do—and also to get published in a new and exciting field.”

The four most prominent research areas in BME are orthopaedics, cardiovascular science, medical imaging and the neurosciences, Berbari says. The field is all about finding ways to help people adapt when their bodies have somehow failed.

"We think in engineering terms and use engineering's tools to study and solve medical problems," Berbari says. "And as medicine has moved into research on the molecular level, we've begun work on the cellular level, through fields like nanotechnology or tissue engineering."

The BME chairman expects some of his grads will migrate into medical school. Others may work in research and related fields. And he hopes all will build their careers around shaping the future.

One former IUPUI student who would have loved to be part of the BME program—and whose career revolves around biomedical engineering on a daily basis—is U.S. astronaut David Wolf (story, page 7), who shares Berbari's unbridled enthusiasm.

"Traditionally, biology has been so complex that it has been as much an art as a science," says Wolf, an Indianapolis native. "But because of our technological advances, we're on the verge of a significantly greater understanding of our biological systems. And that allows us to use engineering principles to build our knowledge about human performance, disease and many other fields of medical care."

Breathtaking possibilities

"Already, our (BME) tissue engineers are working on engineered bone, which opens up a new world of hope for people with non-healing bone fractures. We're just scratching the surface of what is possible," says Berbari, who admits that even after decades in the field, he still finds himself amazed by the possibilities his profession could offer.

"We're asking ourselves questions like 'can we grow ligaments, tendons, even bones that match what our bodies now do?' he adds. "Can we grow an entirely new kidney from a few cells? If that's possible, it dramatically reduces the problems of rejection!"

The field may completely revamp one of it's own greatest success stories: the cardiac pacemaker.

"They've been reduced in size, but the power source still takes up more space than we'd like," Berbari explains. "But what if we used a tissue-engineering approach, implanting cells which replace or alter the non-functioning diseased cells in the heart. Then it's not a question of if, but when, we make pacemakers out of a set of cells from the person being treated!"

The ongoing partnership between biomedical engineering and the schools of Medicine, Dentistry, Science and others has been a vital part of BME's growth from a collection of courses in the engineering school to a full-sized department, complete with bachelor's, master's and Ph.D. degrees.

"Those relationships are vital to our growth, but they also strengthen our partners, too," Berbari says. "Look at the work already underway and the quality of students we're attracting and one thing's clear: we have the potential to rank among the top 20 to 25 percent of biomedical engineering programs nationwide. And that's incredible for a program as young as ours!"

Reshaping two fields

One of the biggest challenges of building a strong program has been "finding worthwhile textbooks," sighs Berbari, who headed the University of Oklahoma's BME program in the early 1990s. The flip side of that coin? Berbari and his staff can unleash their creative juices and teach their students the principles—and wonders—of a field that could reshape both its parents: medicine and engineering.

"Because the medical school has been so receptive to us, our students have gotten a chance to see the human side of health care, and have had the chance to imagine how their work could make things better for others," says Berbari. "In engineering, we tend to think in terms of objects and systems. Working with medicine so closely makes things more real for our students."

Those advantages affect the outlook of BME's students—and, Berbari admits, the faculty, too.

"There is an energy, an excitement, in our program," he says. "Our kids have always been high achievers, good at pretty much everything they do. But here, they're exposed to challenges that require them to go further, to use their skills in several fields and do it all at the same time!"

It was that same "humanistic" motivation that pulled Berbari himself into a field that barely had a name and virtually no heritage when he started at Carnegie Mellon in 1971.

"Mostly, they thought I was there to fix the hospital's electrical systems," the BME director laughs. "But I was a library rat; I read anything I could find on ways to use engineering in health care. I even made some of my own instruments to study electrical safety in the catheterization labs and intensive care units, to find ways to make things work better."

His experiences have made Berbari an unapologetic cheerleader for BME.

"I think biomedical engineering will help us apply the lessons we're learning from human genomic studies and put them into practice, helping people stay healthier, be stronger and live longer," he says.

He calls the concept "individualized medicine."

"In the 1970s, an IBM executive said that in a year or so, we'd have maybe 300 computers in the world, and that'd be all we'd ever need," Berbari laughs. "Of course, that's when one computer filled a room. But things change. The care we get now and what we have in years to come could be just as different as those old room-sized computers were from the ones we wear on our wrists or hold in our hands.

"Those changes are coming, and it's kids like those in our program now that will make them happen," Berbari says. "It's a thrill to be part of that!"

Helping *forgotten* Heroes

by Ric Burrous

America has resolved to “Remember the Alamo,” but done its best to forget Khe Sanh and the Tonkin Gulf. We easily recall the attack on Pearl Harbor, but have tried hard to ignore the Tet Offensive and the fall of Saigon.



Daniel Vreeman (L), Mark Sothmann (C) and Craig Robbins (R) are key figures in the research project pairing IUPUI and Ohio State.

When it comes to Vietnam,

forgetting has become a national reflex. What remains most vivid about the conflict in our collective mind are war movies and the dramatic Vietnam Memorial in Washington, D.C., containing the more than 58,000 names of those who died on the far side of the world.

But to Mark Sothmann and his team of IUPUI researchers, it's time to remember—and provide help for—America's other victims of that conflict, the men who suffered traumatic amputation in battle.

Information is incomplete

“Army hospitals do an exceptional job of healing the bodies of soldiers who suffer traumatic amputations,” says Sothmann, dean of the School of Health and Rehabilitative Services. “But nobody has much information about the long-term health outcomes for these men, and that makes follow-up and long-term support difficult to provide.”

That gap is at the heart of the Indiana-Ohio Collaboration for Traumatic Amputee Rehabilitation Research project that links Sothmann and his IUPUI team with counterparts from Ohio State University in a \$1 million grant project that could run up to five years. Locally, the grant will be administered by the Indiana Center for Rehabilitation Sciences and Engineering Research (ICRSER).

“The records the armed services kept in the war only listed loss of limbs and amputation as ‘major injuries,’ and didn’t specify what those injuries were,” says Sothmann, whose team includes Daniel Vreeman and Craig Robbins from his school, plus School of Medicine researcher and faculty member Brad Doebbeling, representing the Roudebush Veterans Administration Hospital on the IUPUI campus.

The project's first phase will create a Web site and a national registry of Vietnam veterans with traumatic amputations. The second phase will use focus groups to determine the most accurate indicators of the health and quality of life of those veterans. The third phase will



feature a nationwide survey of the veterans in the databank.

The database also will help the Department of Defense (DOD) and the Veterans Administration (VA) communicate more effectively.

“One of the big factors that contributed to the problems we face is that both the DOD and the VA have very different information systems and different coding,” says Sothmann.

The IUPUI and Ohio State research teams are eagerly pursuing help from veterans’ groups as key resources.

“We need their (veterans) help as partners in conducting our research,” says Sothmann. “With their partnership, we can reach a larger segment of the veteran population and our project can reach its full potential.”

The groups could help in several ways: by providing links to the project’s Web site on their own home pages; by publicizing the project in their newsletters; by inviting research team members to speak at national and regional conventions, conferences and meetings; and by networking among themselves.

Long-term perspective needed

Using Vietnam veterans instead of servicemen from either of the Gulf wars was a conscious choice for the IUPUI-Ohio State research teams.

“Soldiers who have suffered these types of injuries in the Gulf wars have had access to more current, effective equipment and treatments,” says Sothmann. “But Vietnam-era vets didn’t, and they also have had 30 years of life experiences with amputation affecting everyday life.”

Those men are likely to have critical insights researchers need to assess and that might help the government provide more effective treatments and support.

“We have two critical questions we need to consider,” says Sothmann. “The first: how can we help the Vietnam-era traumatic amputees and others from past wars as they age? And the second: what information on the outcomes from Vietnam-era amputees will help us develop better long-term rehabilitation practices for amputees in present and future wars?”

The defense department supports the project and “is very interested in what information we can gather,” the dean says. “Building an accurate database will be a big step. But imagine if we are able to provide the DOD with up-to-date information about problems these men have encountered with prosthetics, access to health care and psychosocial issues.

“Our work may help the Army improve its current care, provide more help for both older and current troops, and develop new methods

to meet their needs,” Sothmann adds.

Sothmann believes the Web site could prove even more vital than the database.

“Right now, we have no easy means of communication with the men who belong on this list,” he says. “An interactive web site could provide them with the means to keep up with our work, to know their participation is valued and that the results will make a difference.”

IUPUI a ‘good fit’

Sothmann believes the IUPUI campus is a “good fit” for projects like this one.

“We have a wide variety of people and talents here that a lot of other campuses don’t,” he says. “Our school knows the rehabilitation side, but we also have experts in technology to gather this information and manage it, medical people to help us assess the soldiers’ health concerns, even the biomedical engineering experts to help us test new equipment and techniques to help our soldiers live fuller, richer lives.”

The combined expertise of IUPUI schools and their Ohio State counterparts is likely to help defense department and VA officials develop new approaches to health care for American soldiers.

“I think the information we gather from veterans could give the biomedical experts here and at Ohio State ideas on how to create better prosthetics, and give our surgeons and therapists ideas on how to improve field care,” says Sothmann. “The potential benefits are enormous.”

The benefits of the partnership—the largest grant in Health and Rehabilitation Services’ history—extend to the school’s future, as well.

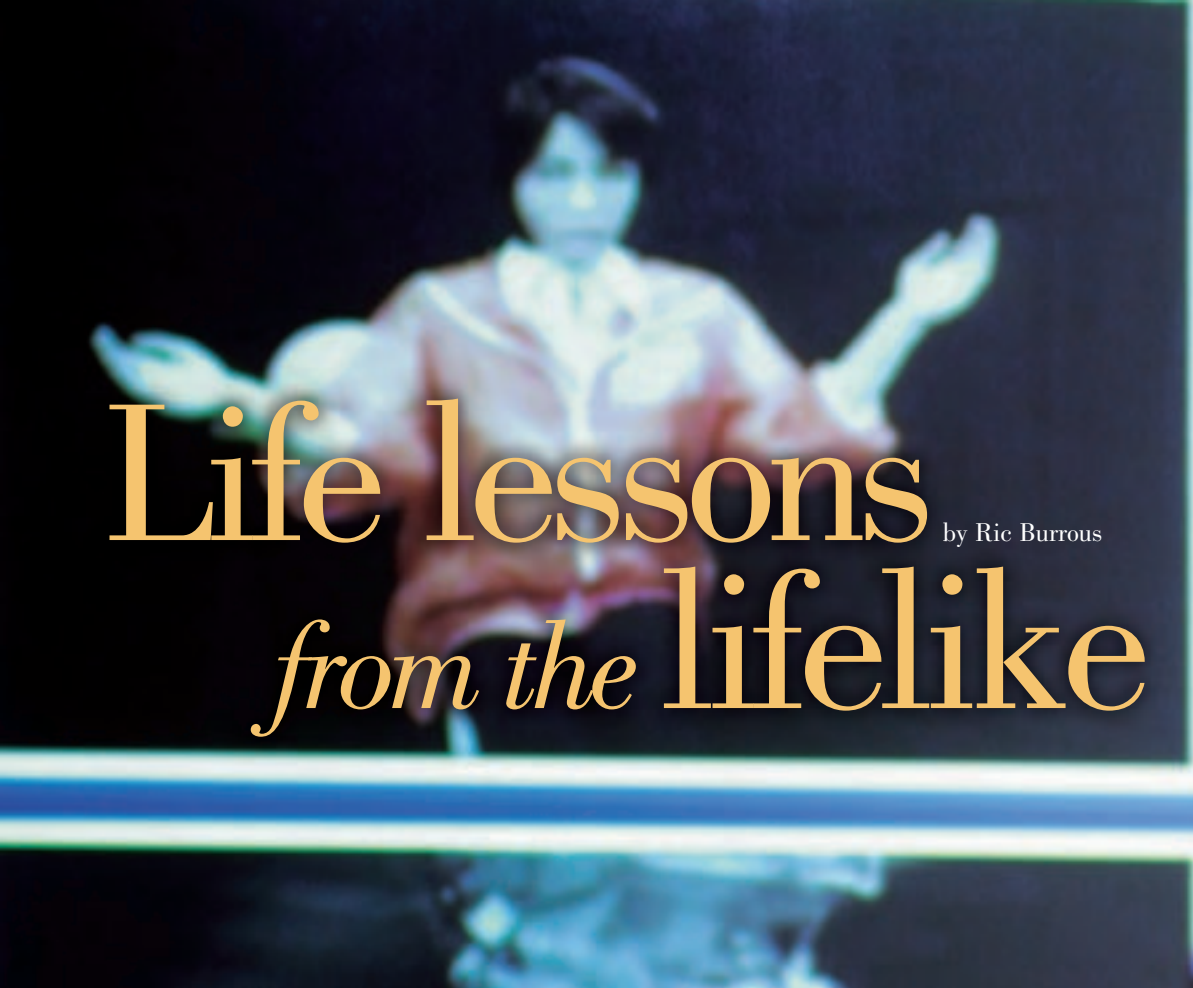
“The project establishes ICRSER as our school’s portal to the outside world,” says Sothmann. “It will give us the infrastructure we need to tap into about \$600 million in national funding that has gone untapped previously by the state of Indiana.”

The center also has become a major recruiting tool for Sothmann and his staff.

“Thanks to this grant we have a story to tell to talented young Ph.D. candidates who are being recruited by some of the top schools in the nation,” the dean adds. “This grant and the whole Life Sciences Initiative makes it clear to them: this is a climate where they can flourish!”

For more information, visit the Indiana-Ohio Collaboration for Traumatic Amputee Rehabilitation Research Web site at: www.vietnamwaramputee.org

“Army hospitals do an exceptional job of healing the bodies of soldiers who suffer traumatic amputations, but nobody has much information about the long-term health outcomes for these men, and that makes follow-up and long-term support difficult to provide.” — Mark Sothmann



Life lessons from the lifelike

by Ric Burrous

*Authors for years have used artificial beings to tell us stories of action (*The Terminator*), adventure (*Star Wars*), science fiction (*Blade Runner*) or comedy (*Making Mr. Right*).*

But a new breed of scientific researchers

like Karl MacDorman of the IU School of Informatics at IUPUI is using androids to tell us something different: a story about ourselves.

In the future, androids will serve as patient simulators to help doctors, nurses and dentists better learn human responses and better care for patients. Teachers will learn how their students learn, and will help equip those students with the communication skills they will need in their professional careers. Even police officers will learn how to better “read” the people they question, to discover the truth.

“Our work starts with building lifelike androids, but what we’re really studying are human beings—what motivates us, how we communicate—or fail to,” says MacDorman, who just completed his first year on the informatics faculty.

Processing information

MacDorman calls android science “part of learning how the human brain processes information.

“It’s a platform for unifying the cognitive sciences,” he adds. It can open a dialog between fields such as the cognitive neurosciences and social psychology. “Each of those disciplines will be able to test new views in their fields by using androids in their research.”

Those sciences study from different viewpoints how people perceive the world around them and interact with it. The problem, MacDorman says, is that the cues we use to acquire and process information are so varied—and often subconscious—that it is all but impossible to know what we learn from, say, a conversation.

Does the meaning lie in the words we speak, or in our gestures or tone of voice? Or does eye contact tell us whether—and what—the other person was thinking when she gazed off into space? Examining these variables is at the heart of understanding people, but they are impossible to control when you study one person interacting with another.

“But when we use an android, we can control the factor under study,” says MacDorman. “We isolate the android’s appearance, or a specific motion, and see how varying it alters human response.”

Greater knowledge of how people communicate will help health-care workers better understand a patient’s non-verbal cues, give teachers greater insights into students, and so forth.

“The future isn’t something we can predict, it’s something we have to make.” — Karl MacDorman



MacDorman also believes that such knowledge may help people in positions of responsibility understand the importance of their own body language and mannerisms. It doesn’t help a patient’s mental outlook, for example, if a doctor’s words of encouragement are contradicted with the slumped shoulders of hopelessness.

Non-research functions possible

Android science may have other long-term benefits: technological advances have made it conceivable that robots or androids could serve work functions, at such places as information booths or in home health-care settings. Japan, the world leader in the field and a place where MacDorman has worked extensively, already is well down the road toward those functions.

“Japanese people often feel more comfortable asking for assistance from an android or a robot than from another person,” MacDorman says, noting they feel especially reluctant to trouble a stranger for help. “That’s why Japanese people who are lost would rather ask an android for directions than another person—they don’t have to be overly polite to a robot, or feel embarrassed by a faux pas, the way they might in front of another person!”

MacDorman is well acquainted with Japanese social customs, having taught robotics and machine learning at Osaka University for five years. He also attended Cambridge University for his Ph.D., and has worked as a software engineer and chief technology officer in the private sector.

His work in android science is the culmination of a life built around technology. He got hooked on computers early in life—“I saw computers as an art form, but one you can interact with”—and got into robotics in college. “I saw it as an ideal testing ground for my ideas about human cognition.”

Building partnerships

Eventually, MacDorman’s work brought him to the still-young School of Informatics, a school still marking its turf while it builds partnerships with such diverse schools as medicine, science, engineering and technology, health and rehabilitation services, nursing and more.

“The school is new enough that I feel like I can have an influence on the direction it takes,” says the California native. “And people here are excited about the possibilities of working with androids—people in a large number of disciplines.”

Because of the expense of building an effective android, much of MacDorman’s work relies on external collaboration. But he and others hope the options offered by androids lead to the development of one or more at IUPUI.

“The field will really take off when we find the means to mass-produce androids and get them in the hands of the various research teams in the social and cognitive sciences,” MacDorman says.

In the meantime, MacDorman considers himself fortunate that his time in Japan gave him hands-on experience, and first-hand exposure to how participants responded to the androids. The work in which he participated, coupled with photography and video of androids in action, give him tools to expand his knowledge base.

Future is open

The future of android science is a story still unfolding, the informatics professor says, in large part because it is so far on the cutting edge that nobody—not deans, not research directors, and especially not those who decide who receives research grants—really knows what lies ahead.

“The future isn’t something we can predict, it’s something we have to make,” MacDorman says. “I believe that androids have much to tell us about being human, but we have to show what we can do in research with androids that we could not do without them.”

“As for what the role of androids will be in society at large, that’s not something a few experts can anticipate—or decide,” he adds. “Just as with the development of the Internet, everyone will get a say.”

Turning Pictures *into* Progress

by Ric Burrous

For most families, children's pictures are a way to fondly recall the past. But if an IUPUI research team headed by Liberal Arts alumna Elizabeth Moore has its way, a unique type of child photos won't be found in family albums—they will help make the future a little brighter for youngsters adversely affected by alcohol during their mother's pregnancy.

Sparked by Moore's graduate school dissertation, the team is tackling one of the major challenges of fetal alcohol syndrome (FAS), a less-well-known version called fetal alcohol spectrum disorders (FASD), by using cutting-edge technology with a potential low-tech application.

The goal is to use a 3-dimensional laser camera to provide a detailed "map" of a child's face, usually on youngsters ages 3 and up. The 'map' would then be used to develop a standard series of measurements that family doctors and pediatricians can use to compare figures gathered with a regular tape measure and determine whether a child may need to be tested in depth for the potential of FASD.

The multi-disciplinary IUPUI team includes: Moore; Richard Ward, her mentor from the School of Liberal Arts; principal investigator Tatiana Foroud of the School of Medicine (see separate story, page 18); Shiaofen Fang and Jeff Huang of the School of Science; and Eric Wernert and Jeff Rogers of the School of Informatics.

"Most FAS cases are fairly easily identified by pediatricians and family doctors," says Ward, the associate dean for student affairs in Liberal Arts. FASD, though, is more insidious.

"A child may look perfectly normal, with no visible signs of FAS," adds Ward, a physical anthropologist. "But when we compare the facial patterns of children with FASD, their results correlate strongly with FAS—only these kids often go undiagnosed. They don't get the support for learning problems, behavioral problems, or any of the other circumstances that affect FAS kids."

For the members of the IUPUI team, that's unacceptable.

A student's perspective

The project, one of the dozens of alcohol-related research efforts that have made IUPUI a leader in the field, grew out of Moore's own interest in the work she did with Ward while both a student and a teacher at IUPUI. She refined that interest while earning a master's degree from Purdue and a Ph.D. from IU-Bloomington while preparing for her health-care career.

"Pediatricians and family doctors don't have time to do

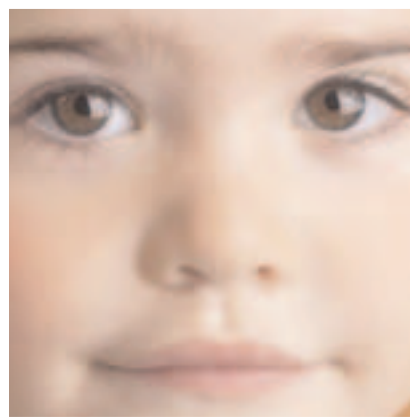
sophisticated, time-consuming evaluations, especially when they don't know for sure there even is a problem," says Moore, who earned her undergraduate degree from Liberal Arts in 1984, sharing her graduation ceremonies with her mother, who earned a business degree that same year. "If we're successful, we'll give them standard measurements to use as a tool to quickly see if more detailed testing is necessary."

The research team is testing a variety of measurements, seeking standards that will be effective in doctor's offices across the country. If the approach works, doctors will be able to use simple tape measures to see if more tests are needed.

"We've taken Elizabeth's original research and using 3-D laser technology to develop the exact measurements that are accurate," Ward says. "We take three separate shots of an infant's head, then 'weld' them together with CAD-CAM technology. Once that's done, we use electronic 'calipers' to take the exact measurements we need."

"Ultimately, we'd like to refine the technology to take four or five measurements," Ward adds. "The data gained could tell a parent whether a child was in the normal range, or suffered from either FAS or FASD."

If the 3-D technology proves valid, it could become one of the second round of tests in determining whether a child needs extra help. The 3-D approach has been tested in other places around the world, including Buffalo and San Diego in the U.S. plus Finland and South Africa, "making it truly global research," Ward says.



Pupil makes teacher proud

Now an applied research scientist at St. Vincent's Hospital in Indianapolis, Moore works on the project as a consultant, but Ward is convinced the project never would have been launched were it not for her dedication to the subject—something that “makes the teacher in me very proud.”

“Elizabeth’s dissertation found that there are a distinct pattern of facial measurements in children with FAS,” Ward says. “But she also found that children who weren’t obvious victims of FAS often mimicked the same pattern as FAS kids—just not to the same degree.”

Because the team is using multiple approaches, it crosses significant school and discipline lines. Moore and Ward have worked in the fetal alcohol field extensively, while Foroud officially heads the team because of the genetic component of the inquiry: FAS and FASD both inhibit the development of an infant’s brain and neurological function.

Wernert and Rogers provide the technological expertise in the 3-D camera and the advanced visualization laboratory, including CAD-CAM technology, which make it possible to develop the measurements the team needs to establish effective standards. Fang and Huang, specialists in facial recognition, are using their expertise to test alternative methods of assessing facial measurements that will trigger appropriate testing.

“We also are using brain imaging now, as well as psychometry and anthropometry to deal with the terrible consequences of alcohol abuse,” Moore says. “These tools and techniques give us a chance to collect data on the different ways alcohol affects people’s lives, particularly children.”

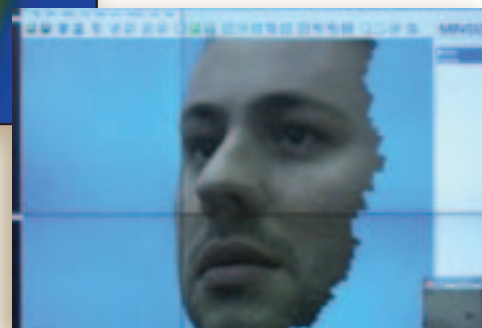
Those “different ways” include Foroud’s area of expertise, the genetics of the brain.

“We’re trying to understand fully how the brain grows and develops, including in unborn children,” says Foroud, who specializes in exploring the genetic functions of such diseases as alcoholism, Alzheimer’s, Parkinson’s and other neurobiological disorders. “What the fetal alcohol team is learning is part of that larger picture, but with the potential of a very specific—and beneficial—outcome.”



Elizabeth Moore and a “green” version of her face (left) show the versatility of the 3-D technology an IUPUI research team uses in its fetal alcohol spectrum disorder project.

Faces on the “wall” in the IUPUI laboratory can be displayed in full and normal color, and rotated to allow more accurate readings. Images also can be displayed in other colors, in wire-like views, or other methods.



Benefits for Graduates

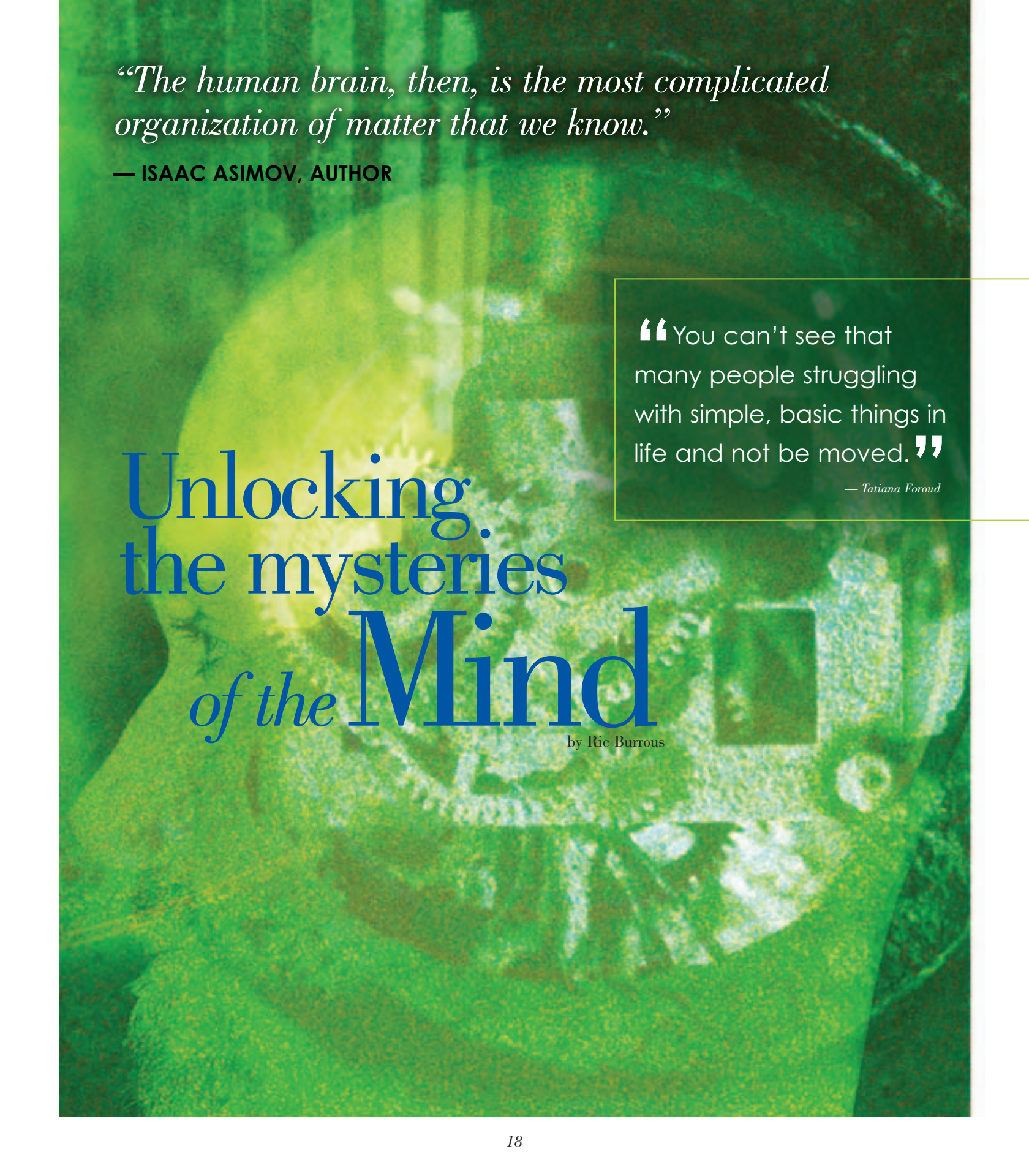
Moore appreciates the opportunity she’s had through IUPUI to work on a project so near and dear to her heart. But it’s almost as big a kick to the “old student in me” to work with Ward, a man “who has really had an impact on my life.

“If it wasn’t for Rick, I might never have found my way to the work I love to do, was meant to do,” she says. “It’s an awesome feeling, being part of the ‘inner circle.’ It can be intimidating at times; sometimes I still feel like I’m a student who’s going to get tested on what we’re discussing. But Rick always sees the bigger picture, and I feel like he’s letting me see it, too!”

“Elizabeth is so typical of the different types of students we have at IUPUI,” says Ward. “She came here as a non-traditional student in one field, but found her passion in another and was able to make a career out of it!”

The fetal alcohol project is helping Moore achieve her biggest professional goal: “to do a project that matters.

“For all of us on the team, it’s an opportunity to apply our skills to help young families and their children,” Moore adds. “Even if we’re successful, we know it won’t reverse any damage alcohol caused to an infant during pregnancy. But if we can help a doctor intervene just a little bit earlier, maybe there can be enough improvement to give that child a richer, more fulfilling life.”



“The human brain, then, is the most complicated organization of matter that we know.”

— ISAAC ASIMOV, AUTHOR

“You can’t see that many people struggling with simple, basic things in life and not be moved.”

— Tatiana Foroud

Unlocking the mysteries of the Mind

by Ric Burrous

Tatiana Foroud may not come equipped with ships of wood and hardy crews of sailors, but she harbors a spiritual connection to historic figures like Columbus and Magellan: she's out to redraw the maps of the known universe.

Only Foroud and her research teams on the IUPUI campus aren't charting shipping lanes, discovering continents or greeting new civilizations. Their realm is the human brain, and more specifically, how the brain misfires and contributes to such debilitating diseases as Alzheimer's, Parkinson's, Huntington's and more.

"Our research is mainly in mapping genes that contribute to a person's susceptibility to common—but complex—genetic disorders," says the School of Medicine researcher, one of the world's leading authorities in the genetic implications of those and other diseases. "We do statistical genetic analysis of molecular data, hoping

to identify the variables which may predispose one individual to those diseases, while protecting another."

Foroud is the director of the medical school's hereditary genomics division, a part of the medical and molecular genetics department in the School of Medicine. The division's research, based at the genetic level, is interwoven with the school's emerging strengths in such fields as computational biology and bioinformatics, as well as ethical issues that relate to gene discovery and its applications—all fields at the heart of the Life Sciences Initiative at IUPUI.

Perfect place, perfect time

Foroud believes the IUPUI campus "is perfectly suited" to the research work her teams pursue, in large part because of explosive growth in interdisciplinary work that she favors.

"In some campuses, researchers are far more limited by the culture that surrounds them," she says. "Here, we cross lines between departments, disciplines and schools, and nobody blinks an eye. In fact, it's expected in order to explore the world of possibilities that exist."

The collaborations aren't without challenges, though.

"Sometimes we have to spend the first 15 minutes of a meeting getting our jargon down so we can talk to one another," Foroud laughs. "But once we get the communication thing down, the ideas start to flow, and things get interesting."

The Connecticut native finds collaboration compelling because her fellow researchers share her passion for discovery.

"I've always found that you can do much more work—and better work—in a group than alone," Foroud says. "That's particularly true in today's medical research, because all our fields are converging. People with backgrounds in engineering, the humanities or other areas have different perspectives; when I'm in a group, I start to see things through their eyes. And I hope they can see things through mine—and you can't help but be positively influenced by those relationships."

Destined for research

For Foroud, scientific inquiry appears to be—not surprisingly—genetic.

"I've always been curious, always wanted to know why things developed as they did," she says. "The more I delved into the world of genetics, the more I realized we had to learn. And I wanted to know it!"

That eagerness to learn has made Foroud a popular choice as principal investigator on a wide range of grants, including major awards in Parkinson's and Alzheimer's. As her body of work in mapping the genetic make-up of the brain grew, so did her reputation, which helped make her an obvious choice as the first P. Michael Conneally Professor of Medical and Molecular Genetics, named for the medical school's internationally recognized leader in genetics. The honor was special for Foroud, because Conneally—still active—was her mentor.

"When I came here in 1990, I worked on Dr. Conneally's Huntington's Disease project for my Ph.D.," she says. "It was great for a struggling graduate student to work with a man like him and a team like that, to see how they studied problems and came up with ideas to resolve them."

It was heady stuff for a newcomer to campus, a feeling she tries to pass on to her young researchers, particularly undergraduates.

"It's a great testing ground for those who think they are interested in medicine or research as a career choice," Foroud says. "We let 'em dive right in—it's the best way to learn if it's the life for you."

Guiding force

Rubbing elbows with topflight researchers was a rush for Foroud, but working with patients suffering from Huntington's Disease—for which there is no treatment—made an even bigger impression.

"You can't see that many people struggling with simple, basic things in life and not be moved," Foroud says. "Since those days, I've begun to work with Alzheimer's and Parkinson's patients, who face similar problems. But no matter which group I'm working with, or which disease I'm working on, knowing how hard they have to work to do things the rest of us take for granted keeps me motivated!"

Because there are no cures for any of the diseases on which she works, she and her partners are in on the ground floor, seeking clues to cures or effective treatments.

"The search for genes that increase or decrease the risk for Alzheimer's—or any other neurological disease—is a vital area of scientific research," says Foroud. "We hope that identifying these genes will guide us in developing drugs to counteract their negative effects."

While her team focuses on the genetic components, other research teams work on treatments to delay the symptoms of such diseases, while still others battle to improve the quality of life for those suffering from the neurological disorders.

"None of us know which secret will unlock the solution to any of these neurological diseases," Foroud says. "One day, we may find out which gene controls things, and develop a way to make the gene work properly. Until then, we keep looking."



helping those Serving time train those Serving others

by Ric Burrous



Put “prison” in the same sentence with “dog” and for most people, images arise of snarling guard dogs making sure prisoners remain

locked up. But for scores of people with disabilities an unusual program that uses Indiana prisoners to train Labrador retrievers, golden retrievers, Labradoodles and other breeds to serve as assistance dogs can mean a better way of life.

One of the people deeply involved in the Indiana Canine Assistant & Adolescent Network (ICAAAN) is Eileen Udry, a faculty member in the School of Physical Education and Tourism Management at IUPUI.

ICAAAN, founded in 2001 by Sally Irvin, was launched at the Pendleton Juvenile Correctional Facility with two incarcerated adolescents. With each success story, the program has grown and now includes three central Indiana locations.

“What is so remarkable about the program is that it has benefits in two very significant ways,” says Udry, who helps develop the training methods used by the prisoners. “A well-trained dog can be such a tremendous benefit to a person who otherwise would have a much

harder time getting around and doing things the rest of us take for granted.

“But it also offers help—and hope—to the men and women who are in prison, who find something worthwhile to do with their time,” she adds. “And they learn a marketable skill while giving others hope, too.”

IUPUI at work

For Udry, ICAAN is a good example of IUPUI in action: it blends education (training the inmates to train the dogs) with public service (assisting Hoosiers who need service dogs) and public policy (giving inmates an opportunity to contribute to society and—perhaps—to their own futures).

The multiple missions attracted Udry, who has training in sports psychology.

“I got into the program because of the opportunity to work with dogs, which I’ve always enjoyed,” she says. “But the longer I was involved, the more I realized there was a bigger picture,” she says. “There are some stunning lessons to be learned.”

Among those lessons? That the dogs have an impact in their prison training grounds. Studies show that offender-trainers improve their positive communication skills and increase their empathy, and have fewer instances of depression. And Udry and ICAAN are intrigued by correctional staff reports of decreases in overall offender misbehavior—not just among the handlers—in the dorms in which the dogs live during training.

“Many of the other inmates seem to be drawn to the dogs,” Udry says. “They seem to have a calming effect in the dorms.”

The IUPUI researcher has spent the past four-plus years gathering such information as part of her work with Indiana prisons involved with the ICAAN program.

Fits personal interests

Udry says her work with ICAAN “is a nice synthesis of my professional work and my personal interests,” particularly her work with the psychology of high-performance athletes in training.

“In many respects, the dogs we train through ICAAN are themselves

high-performance athletes,” she says. “They go through rigorous training and have to learn how to deal with a wide range of situations, just like athletes do.”

She’s found lots of commonalities, for instance, between those who train service dogs and those who coach high-level athletes.

“Both are held to really high standards,” she notes. “Athletes have to be able to compete against top-flight competition regardless of circumstances, while assistance dogs have to behave in ways that aren’t always natural to animals. They can’t eat food off the floor, for example, and they can’t be distracted by the world around them like other pets can be.”

An NFL coach, for example, “succeeds by making a Super Bowl atmosphere feel familiar to his players during preparation,” Udry says. “For assistance dogs, our biggest challenge is making the real world as familiar as possible, so the dogs can do their jobs well.”

The payoff is worth it.

“What’s best about this work is the feeling you get when you see a dog working with its new partner,” says Udry. “Usually, the dogs make such a major change in the people’s lives that you can see it right away.”

The physical assistance is vital. It might be as simple as retrieving an item that the person has dropped or has difficulty picking up. Or it might be as major as providing a solid base for someone with Parkinson’s disease; such people have problems with balance, and often need the dog to steady them. In extreme cases, the dogs are taught to remain still, allowing the person to use the solid base to pull himself or herself off the floor.

But the psychological impact can be just as important. “There is such a connection that grows between the human being and the dog when things go right,” Udry says. “We’re only now beginning to be able to assess the emotional benefits to the people who now have the animal.”

“Usually, the dogs make such a major change in the people’s lives that you can see it right away.”

— Eileen Udry

Different type of teaching

Although Udry is teaching in both facets of her professional life—whether it’s students in her IUPUI classrooms or offenders in one of Indiana’s prisons—the “feel of things is very different to me,” she says.

“At IUPUI, I’m working with students trying to figure out what they want to do with their lives, what career paths they want to choose,” she says. “With ICAAN, though, it’s more about giving people a second chance. For the recipients, it’s a chance to lead a richer, more productive life. For the offender-trainers, it’s an opportunity to remake themselves and their lives.”

That makes ICAAN different from other prison-based training programs across the U.S., Udry believes.

“ICAAN’s mission is first to train assistance dogs,” the sports psychologist explains. “But the program also is designed to help the personal and psychological growth of the offenders who do the training. Both goals are vital if the program is to work.”

To learn more about the ICAAN program, visit the organization’s Web site at www.icaan.net.



by Ric Burrous

Breaking Down Barriers



With her quick smile,

comfortable voice and easy-going manner, Kathleen Russell doesn't look much like a TV cop kicking down a door to stop the villain.

But don't be fooled. To a growing number of women in Indianapolis' African-American neighborhoods, Russell's fight against the deadly effects of breast cancer makes her a hero in their eyes.

The IU School of Nursing researcher and faculty member works hard both on the IUPUI campus and off it to fight the threat of breast cancer, training a group of lay health advisors to act as surrogates to encourage women—especially minority women—to get regular mammograms.

Testing is key

"It's vital that we convince women to get themselves tested, and often," says Russell, who graduated from the IUPUI-based nursing school in 1973. "Studies show that African-American women are more likely to die from breast cancer, even though Caucasian women are more likely to get the disease."

One of the biggest reasons for that mortality rate is that minority women "don't find the disease early enough to get effective treatment," Russell says. And mammograms are still the best method for early detection and treatment.

Russell and her group of lay advisors have several barriers they have to overcome to reach their goal of full—and early—testing.

"Part of our problem is that the neighborhoods these women live in are more likely to be medically underserved," the nursing expert says. "Another is that many are uninsured or underinsured, and therefore can't afford regular health care."

"Some are deterred by medical beliefs ("I don't want a mammogram because the x-ray can cause cancer"), others by health practices ("I only see my doctor when I am sick"), still others by cultural beliefs ("It's better not to know if you have breast cancer")," Russell adds.

Other concerns: clinics are so busy that getting an appointment is problematic, especially when it is difficult to take time off from work. Transportation to and from medical centers and clinics likewise is a barrier. And having no one to help with dependent care responsibilities can deter women from getting much-needed mammograms.

"In a way, it almost doesn't matter what the specific problem or barrier is," Russell says. "It's our job (as health advisors) to try to find solutions, to break down those barriers, to help women navigate the health-care system."

Battle is personal

Russell's battle against cancer is built on personal experience.

"It is definitely personal," she says. "My children's godmother was diagnosed with breast cancer. So was my mother's sister. I know how much pain and heartache breast cancer can cause, and in whole families. That's one of the reasons why I work so hard to find answers."

Russell is a realist, aware that advice from researchers on college campuses and doctors in major hospitals often is lost in neighborhood life. That's why she's built her program on lay health advisors who are the community connections for Russell's project.

"The women who are part of this program know how important they can be, and they are motivated," she says. "The women they talk with each week are friends and neighbors. They go to the same churches and schools and stores. They are the human component of our work."

The design of Russell's lay-based program is no accident.

"I'm a community-oriented person," Russell says. "I love working with people on their home ground. It means that I'm off campus most of the time, but that's OK; I like being out where life is going on."

Next step

Training lay workers is a vital first step, but Russell isn't stopping there.

"I'm working on an intervention that will fit into the lives of the people we need to reach," she says. "It doesn't do any good to create something that people won't use. It has to be something they are comfortable with, something they can believe in."

Russell has built her program out of her own experience, but also the work of fellow researchers in the nursing school, experts such as renowned cancer researcher Victoria Champion and others from the IU School of Medicine.

"A lot of the work I do is based on behavior, so it's natural to stay in touch with the work of behavioral scientists," says Russell. "I want to learn as much as I can about the things that affect the way people behave; otherwise, it will be hard to develop effective messages."

Ultimately, Russell hopes to blend the personal approach of her project with technological findings from Champion's research to move community health to a higher level.

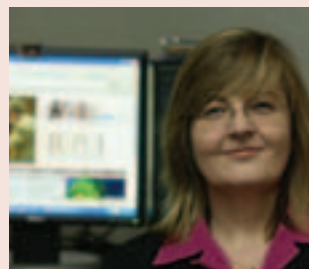
"We also need to develop similar programs that address the needs of Latino communities, to see whether the problems they face are similar or different to African-Americans," Russell says. "In the long run, we'll need a multi-disciplinary approach to make sure we get to know all the populations we want to serve, and tailor what we offer to each group's needs."

Race for the Cure

More than 35,000 people came to the IUPUI campus April 22 for the 15th annual Indianapolis Susan G. Komen Race for the Cure, helping raise both public awareness of breast cancer and funds for research into the disease. The field of entrants included more than 7,800 men and approximately 2,000 breast cancer survivors; those figures, coupled with the family members and friends who came to the event to watch their loved ones take part, make the event one of the most vibrant parts of the city's annual calendar.



HELPING FAMILIES FACE CANCER



For most researchers, cancer-related projects focus on the patient: developing treatments, seeking cures, identifying risk factors. But for Silvia Bigatti and her research team, those inquiries overlook another element of a cancer

patient's circumstances—family.

The Purdue School of Science researcher heads a group that is exploring the impact of caring for family members with breast cancer on spouses (almost always husbands), whose lives are turned inside-out and upside-down by the demanding role of caregiver, coupled with the natural fear of long-term illness or even the possible death of their wives.

The research team is gathering information from a wide range of family members, seeking common circumstances that might lead to steps or tactics that would help cancer victims and their families cope with life a bit more easily.

Bigatti's work earned the veteran faculty member a place in IU's prestigious FACET (Faculty Colloquium on Excellence in Teaching) honor organization this past academic year.

Connected to Life in the City

IUPUI is making a major contribution to the growth of the world of health and life sciences in Indiana, but the campus also is heavily involved in other facets of economic, societal and academic life, as well.



Roger Schmenner



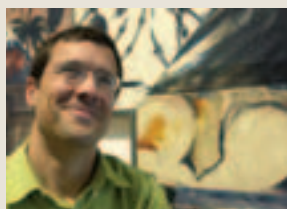
Stephen Downs



Yaobin Chen



Gene Tempel



David Russick

Roger Schmenner of the IU Kelley School of Business is an internationally recognized leader in the field of **21st century logistics**, which explores how industry creates and delivers its goods and services.

Stephen Downs of the IU School of Medicine and the Regenstrief Institute is one of the many researchers at the heart of the emerging field of **information and communication technology**, managing the explosion of information available in all fields of human life.

Yaobin Chen of the Purdue School of Engineering & Technology heads a team of IUPUI faculty, staff, researchers and students working on hybrid vehicle technology with private sector partners, part of IUPUI's exploration of the world of **advanced manufacturing**.

Led by the IU Center on Philanthropy and its executive director **Gene Tempel**, IUPUI has become an internationally recognized leader in **philanthropy and nonprofit organizations**, exploring the impact of the nonprofit sector on American life.

David Russick, curator of the renowned Herron Gallery in the Herron School of Art and Design's dazzling Eskenazi Hall, has helped put the IUPUI campus at the heart of **arts, culture and tourism** in the city of Indianapolis.

IUPUI connects its resources in all these areas—and more—to cities, towns and private organizations through the IUPUI Solution Center. To learn more about how to take advantage of IUPUI and its resources, visit the Web site www.iupui.edu/~soletr/.

What do “gerbil tubes,” two-story outhouses and Eve have in common?

ALL ARE PART OF MORE THAN A CENTURY OF HISTORY, MYTHOLOGY AND FOLKLORE FOR THE COLLEGE CAMPUS THAT HAS GROWN INTO IUPUI—AND ALL ARE FEATURED “STARS” ON IUPUI’S NEW “SPIRIT, PRIDE AND TRADITION” WEB SITE.

The site is a cyber sampler of the people, places and traditions that have made IUPUI such a vibrant part of the city of Indianapolis, and a key to its emergence as a top-flight midwestern city.

The Web site offers dozens of pages of pictures, stories and remembrances of the campus, which may be just 37 years old as IUPUI, but is built on the history of schools and programs that reach back into the 19th century.

You’ll find stories and pictures covering the evolution of the campus, facts about its rich academic and cultural achievements, notable alumni, significant public events and famed visitors. You’ll learn about IUPUI’s annual events, “Jag Jargon,” traditional student and employee hangouts, myths and legends about the campus, and IUPUI’s role in the Indianapolis community. And you’ll meet the people and experience the spirit of campus life, from athletics to volunteerism to social activities to academic life—all the things that make college years a special part of life.

The web site is meant to be interactive: all pages in the site offer a button inviting alumni, students and friends of the university to “contribute to this page.” We’re looking for stories, tips, photos and more that will make the “Spirit, Pride and Tradition” web site a virtual archive of campus life.

To visit IUPUI’s past—perhaps including your own—join the fun at www.iupui.edu/spirit. For those who attended IUPUI, enjoy your walk down memory lane. And for those who haven’t, sample a bit of what our campus has to offer.

And for those who don’t know: “gerbil tubes” are IUPUI’s renowned elevated and enclosed street crosswalks; the two-story outhouse was a unique campus landmark from the mid-20th century; and Eve is a statue that graced Ball Gardens and became a touchstone for thousands of nursing students attending ceremonial events hosted by the IUPUI-based IU School of Nursing.

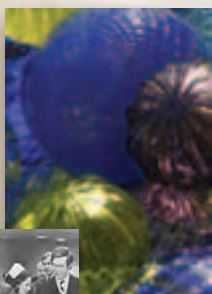
1934

1971

1980

1984

1997



Life *on the* Rebound by Ric Burrous

For most people, the phrase “R and R” means “rest and relaxation,” fun in the sun. For Maushae Byles, it has a slightly different meaning.



REDEMPTION AND RESOLVE. OVERCOME THE PAST. KEEP BUILDING FOR THE FUTURE.

How does a 23-year-old IUPUI basketball standout redeem a past as an 11-year-old drug seller? By being resolute: be a 23-year-old bone marrow donor who is the only match for a Minnesota woman dying of leukemia, and be ready—and willing—to risk your last season of college ball to maybe save her life.

But to the well-built, 6-foot-5, 200-pound Byles, it's the least he can do to honor the people whose helping hands pulled him out of desperate times, and gave him a fighting chance to succeed—people like his foster parents and his eighth-grade basketball coach. Thanks to them, he's a college graduate with a degree in general studies and an open road to wherever his dreams—and his resolve—take him.

Bleak days of youth

In some respects, that early brush with the law, selling crack on the mean streets of Racine, Wis., seems like another life to Byles.

Mean streets? Racine? In America's dairy land? It's not exactly Scorsese country. DeNiro'd fly over it and never look back. Tony Soprano couldn't find it if you spotted him an atlas and flipped it to the “Ws.”

But to an 11-year-old whose father has long since hit the road and whose mother is addicted to crack, sitting in jail under arrest for selling the drug himself to keep the family in food and clothes, Racine can be a cold and lonely place. It may not be the end of the world, but as the old saying goes, you can sure see it from there.

“A lot of people think it's crazy to think about Racine that way,” says Byles, one of 12 children in his family. “But it's rough. There's lots of violence, lots of drugs. It's a trap for a young black man. Even the guys with jobs hang with the dope boys.”

The memory of life on those streets never really goes away, he says. A lot of childhood friends and buddies are dead. Others are in jail.

“What worries me is that my 4-year-old son, Sadarien, lives there,” says Byles, a single father. “I really want to get him away from all that, to give him a better chance.” The kind of chance the Smiths, his foster family, gave him while his mother, Sherry McGlorn, began the difficult task of kicking her addiction.

“ I couldn’t not do it. After everything so many other folks have done for me, to help me, how could I say no... ” — Maushae Byles



“She’s been clean for 10 years, and I’m so proud of her for doing that,” he says with a smile. “She even made it to our Senior Night, which meant a lot to both of us!”

Winding path

For Byles, the path from Racine to the IUPUI campus was a long and winding one. He spent time in Mississippi, reconnecting with his father and learning about his basketball ability. Back to his mother in Racine, he became a star football and basketball player, helping his high school win a state championship. But a major ACL injury in football his senior season cost him his entire basketball season.

It was just another chance at redemption, this time rebuilding his standing as a basketball prospect. He made his way to Howard College in Texas, then to Kennedy-King Junior College in Chicago.

He didn’t know it at the time, but his life began to change in Texas. While watching the college post-season conference tournaments in 2003, he watched the end of the Mid-Continent Conference title game. He saw Jaguar guard Matt Crenshaw hit the game-winning shot to beat Valparaiso, then saw head coach Ron Hunter celebrating with the “floor dance” that CBS, ESPN and other networks replayed on end.

“I was laughing at the time, but I knew that I wanted to play for a coach that had that kind of passion,” Byles says. “A couple of years later, I was talking to recruiters up in Chicago, and suddenly realized that one of the guys I was talking to was the guy from the floor.”

One signature later, Byles was on his way to IUPUI. His first year, he played a key role in the Jaguars’ winning season; this year, he earned the Mid-Continent Conference award as the Sixth Man of the Year and helped lead Hunter’s team to a share of the league’s regular-season championship.

More obstacles

But even in the glow of accomplishment, Byles confronted obstacles that had to be overcome. The first was the discovery that his blood type matched that of a woman with leukemia; the second was another knee injury that required early-season surgery.

The first event drew Byles into the national spotlight. A blood donation he made while in Chicago led to a nationwide search that led back to him. When asked, he never hesitated, despite the fact that the procedure can be painful and would almost certainly require him to miss games during his last college season—perhaps the last of his competitive career.

“I couldn’t not do it,” he says quietly. “After everything so many other folks have done for me, to help me, how could I say no. My mom and I talked about it, and she said it was a blessing to be able to do something like that.”

Ironically, the issue of missing games because of the donation never came up during the season, due to changes in the health status of the prospective recipient. But the second issue—the injury—did force him out of the Jags’ lineup for seven games.

“I never really did get all the way back,” he says, a tad philosophically. “I was never as quick or as explosive as I usually am. Toward the end of the year, I wore down; I just wasn’t quite on my game in the (conference) tourney.”

The road ahead

Byles has yet to line up a job for his post-college career, but he knows where he wants to do it: in Indianapolis.

“I love it here,” he says. “I feel close to the people who are here, and I’d like to see how things go for the guys who will still be here next year.” Besides, he adds with a grin, where else would he have had a chance to play pickup games against NBA players like Ron Artest and David Harrison of the Indiana Pacers.

He’d like to coach and teach, hoping to have the same kind of impact on young lives as the eighth-grade coach who helped him on the road of life.

“I coached a middle school team a while back and had a ball,” he says. “My kids won the championship, even though it took ‘em awhile to figure out what I wanted them to do. Once they did that, they were out there laughing, having fun, enjoying the game. It was such a great thing to see, and made me feel great.”

And that may be the greatest redemption of all.

Courting Success

by Ric Burrous



In tennis, a good first serve comes in hard, fast and full of life.

NOT A BAD PHILOSOPHY TO LIVE BY, AS FAR AS MALLORY STEMLE IS CONCERNED.

After all, it's been her playing style since she first started watching tennis heroes like Jimmy Connors. And it has generated the kind of passion she's used to fuel her record-smashing career as leader of the IUPUI women's tennis team.

The French call it *joie de vivre*, "the joy of life." And Stemle, whose young life has already been marked by choosing unexpected directions, is experiencing that French expression first-hand this summer on a backpacking trip to Europe—a graduation present from her parents.

Stemle flew to Greece in late May and planned to hook up with her brother and other friends at various times in her travels across Europe, before reaching Paris in late June to return home.

"I've always looked forward to different experiences, and this (trip) is going to be really cool," she says. "Planning it has been a lot of fun, although I've tried not to plan too many things. I want to do as many things as possible on the spur of the moment. And the anticipation has been killing me!"

Moving to 'big city'

On the tennis court, anticipation has always been a big part of Stemle's hard-charging playing style. But she wasn't sure what awaited her at IUPUI when she left her hometown of Jasper, Ind., a small southern Indiana city with a population of a little over 12,000—less than half the size of IUPUI's enrollment.

She chose the campus because "it was in state, it was a big school and it was in a big city, all of which I wanted," says Stemle, who took up tennis at age 7 and began lessons at 9. She enjoyed playing softball and volleyball as much as wielding the racquet that eventually became her trademark tool.

"It didn't take me long to learn to love the game, though," she says. It helped that her mother also played.

Stemle was a well-regarded player at Jasper, one of the better high school programs in southern Indiana. "But coming up here put



me back in my place,” she laughs. “I had to establish myself all over again.”

Making her mark

It didn’t take her long to reach that goal. Stemle quickly moved into the number-two singles slot thanks to the hard-charging style she admired in Connors, a Hall of Famer. Perhaps not surprisingly, he too was left-handed.

“I was always taught to be aggressive, to get on top of the ball and go after shots,” she says. “You can’t play with fear. And taking a risk can be fun—if you make the shot, it’s like “Wow, what a

feeling!” And if you don’t make the shot, it’s ‘next point?’”

It also didn’t take her long to help the Jaguars’ program reach new heights.

“We kind of surprised ourselves and won the (Mid-Continent) conference championship, which got us a spot in the NCAA Tournament,” Mallory says. “Playing UCLA on its own courts was really exciting, but the time at the beach wasn’t bad, either!”

The team repeated as Mid-Con champs during her sophomore season, earning another NCAA berth, and lost tough conference tournament matches in each of the past two seasons. During her four-year career, the Jaguars won more than 70 matches, the best four-year stretch in IUPUI history. She was the league’s Player of the Year for 2006, earned her fourth first-team All-Conference nod, and finished with 10 selections as the Mid-Continent Conference’s “player of the week.”

Although Stemle is well known for her achievements in singles play (see accompanying box), she has been even more successful in playing doubles with the Jags. She holds the career records for doubles matches, wins and winning percentage, and particularly enjoyed her matches paired with former teammate Michelle Cunningham, one of her best friends from the team.

“When Michelle and I were playing together, we were so, so aggressive,” Stemle recalls with a smile. “We’d be all up in everybody’s faces, smashing the ball; it was intense! We had a lot of success because our games complemented each other’s, and that’s the key to a good doubles team.”

Stemle and Cunningham are linked in another way: both were honored as seniors with IUPUI’s prestigious Mel Garland Award as the university’s top female student-athlete.

Enjoyable time

Stemle has enjoyed her time at IUPUI, though she admits that the atmosphere around the Jaguars’ tennis program was a bit different than the slender 6-foot left-hander expected when she left home.

“To be honest, I thought it would be a little more intense,” she laughs. “I didn’t expect it to be as fun socially as it’s been. There is a big family atmosphere around the tennis programs—in fact, all of IUPUI’s athletes—that I really like.”

Stemle also has made the most of life in the big city, too. She has taken full advantage of the downtown shopping, the restaurants, the entertainment venues and amenities such as White River State Park, where she often roller-blades along the scenic downtown canal. “It’s been a great place to spend the past four years,” she laughs. “There is so much to do, and never enough time to do it all.”

Stemle’s made her mark off the tennis court, as well. Three times she’s been named to the Mid-Continent Conference’s all-academic team. She’s earned a place on IUPUI’s academic advisors’ honors list four times.

She is all business on and off the court, and all business in her career choices, too. She graduated this spring from the Kelley School of Business at IUPUI, and plans to attend graduate school with an eye toward an MBA and a career in the pharmaceutical industry.

As the days of her college career wound down, Stemle found herself looking back almost as much as forward—except for the European vacation, that is.

“It’s all gone by so fast,” she says. “It seems like I came here for the first time just a day or two ago. It’s hard to believe it’s almost behind me.”

On the other hand, Stemle is excited about what lies ahead, especially that European vacation.

“Skydiving in the mountains of Switzerland would be cool,” she says with a grin. “Really cool!”

STEMLE’S STATS



CAREER SINGLES RECORD:
67-50

CAREER DOUBLES RECORD:
86-22

IUPUI records held or shared:

Most singles matches played, career	117
Most doubles matches played, career	108
Most doubles victories, career	86
Highest doubles winning percentage, career	.796
Most wins by doubles team, season	19
Highest winning percentage, doubles team, season	.850
Most consecutive wins by doubles team	16
Most wins by doubles team, career	48

(All marks through the end of the 2006 season)

Banner Year on Court



JAGUARS BASKETBALL REACHES NEW HEIGHTS

Excitement and thrills, record-setting crowds, team and individual glory—the 2005-06 basketball season had it all for the Jaguars' men's and women's programs.

On the men's side, the Jaguars earned their first regular-season conference championship, sharing first place with Oral Roberts, and racked up a nine-game winning streak, the longest for IUPUI since it

moved to NCAA Division I play.

Along the way, the team packed The Jungle, turned the IUPUI Gymnasium into one of the Mid-Continent Conference's most intimidating venues, attracted more media attention than ever before and created a plethora of new fans—including such notable figures as Jermaine O'Neal and Stephen Jackson of the

Indiana Pacers.

Men's coach

Ron Hunter earned Coach of the Year honors in the league, while senior Brandon Cole and sophomore George Hill were first-team all-Mid-Con performers. Senior Maushae Byles was the Sixth Man of the Year.

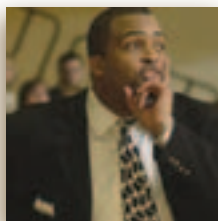
The women's program exploded onto the scene with a record-smashing season of its own, finished second in the Mid-Continent Conference standings and posted the most overall and league wins in a season since joining D-1 competition. IUPUI shared the fourth-best improvement in the nation in terms of won-loss record under coach Shann Hart, earning her Coach of the Year honors from both the league and the National Black Coaches Association.

Senior Brooke McAfee led the nation in blocked shots for a second time and moved into second place all-time in career blocks in women's NCAA D-1 history.

Kia Hayes earned first-team all-league honors, and freshman Jernisha Cann was the Sixth Woman of the Year. Cann and fellow freshman Tanika Mays were both on the All-Newcomer team for the Mid-Con.



Brooke McAfee



Ron Hunter



Shann Hart



Brandon Cole

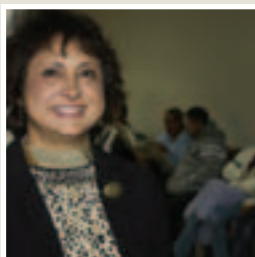


Kia Hayes

George Hill

Catching Up

News about alumni from IUPUI's schools



Juana Watson

For Juana Watson, an interest in making life a little better for those in her community has become a passion that has reached Indiana's borders—and gone far beyond.

Watson (featured in IUPUI Magazine's Summer 2000 issue) is now Gov. Mitch Daniels' senior adviser for Latino affairs,

traveling the state to help communities and neighborhoods with roots in one country adapt to life in a new one.

Watson knows her subject: she was born in the village of Calnali, high in the mountains of Mexico. She came to Columbus, Ind., after falling in love with and marrying an American businessman. After graduating from IUPUI's restaurant, hotel, institutional and event management program—now part of the School of Physical Education and Tourism Management—she founded Su Casa Center, a community resource in Columbus that helps workers from Mexico and other Central and Southern American countries adapt to life in the U.S. When her native land wanted to open a consulate in the Midwest, she worked hard to help bring it to Indianapolis, and helped find it a home in Union Station, where it helps people from at least three states (Indiana, Ohio and Kentucky) handle the problems of day-to-day life in America.

Watson maintains her ties to the campus, annually leading a group of students, faculty and staff—most from IUPUI's health schools like Medicine, Dentistry and Nursing—into the mountains and to her native village to provide much-needed health screenings and basic health care to Mexican citizens who have little or no access to such care in their lives.

“Indiana has a lot of talent, resources and facilities that are the envy of our neighbors—and very appealing to countries around the world who want to become part of the American economy!” — Steve Akard



Steve Akard

Steve Akard just can't shake those international connections.

One of IUPUI's rare three-degree recipients (he holds degrees from Liberal Arts, Business and Law), Akard is now the director of international development in the Indiana Economic Development Corporation, part of Gov. Mitch

Daniels' administration. The former student government leader—featured in IUPUI Magazine's Winter 2000 issue—returned to Indiana to take the job after spending two years on the advance staff for former U.S. Secretary of State Colin Powell when Akard worked for the State Department.

“Returning home to be part of a new state administration had a big appeal for my wife (IUPUI alumna Kay Stephens Akard) and I,” says Akard, who worked for the State Department in such far-flung sites as India and Belgium. His familiarity with the international scene has him excited about Indiana's future in the global economy. “Indiana has a lot of talent, resources and facilities that are the envy of our neighbors—and very appealing to countries around the world who want to become part of the American economy!”



Reginald McGregor

Reginald McGregor, a graduate of the School of Engineering & Technology, recently earned a Special Recognition Award as part of the Rolls-Royce 2006 Black Engineer of the Year Awards program.

The Special Recognition Award goes to candidates whose qualifications and performance

rank them among the nation's highest achievers in science and technology. McGregor received his award during the 20th annual Black Engineer of the Year Awards Conference in Baltimore.

Alumni News

Distinguished Alumni



School of Nursing alumni reunion weekend
School of Nursing graduate F. Patrick Robinson "Distinguished Alumni" at this spring's school reunion weekend. Flanking Robinson are Dean Marion Broome (left) and Roselle Patridge, president of the school's alumni association (right).



School of Law alumni celebration
Interim dean Susanah Mead of the IU School of Law-Indianapolis presents Judge Carr Darden (right) with the school's "Distinguished Alumni" award during this spring's reunion weekend.



School of Medicine alumni celebration
School of Medicine Dean Craig Brater (left) and IU President Adam Herbert (right) pose with the alumni honored during this year's spring celebration, including (from left): Mike Meneghini, Clarence Boone, Phyllis Irwin and Merrill Grayson. Boone and Irwin received "Distinguished Alumni" awards, Meneghini was the first recipient of the "Early Career Achievement" award and Grayson received the "Glenn W. Irwin Distinguished Faculty" award.

Leadership



The Hine Medal
The IUPUI Alumni Leadership Dinner annually honors service to the campus, and is capped by the presentation of the prestigious Maynard K. Hine Medals for exceptional contributions to IUPUI. This year's Hine Medal recipients included (from left) Carolyn Cunningham, Owen "Bud" Melton and Phyllis Lewis.



Fun (and Learning) In the Sun

Alumni from the IU system, including IUPUI schools, who live in Florida—or those living in Indiana who wouldn't mind combining education with a winter weekend getaway—will have an opportunity Feb. 9-11, 2007 at the luxurious Sanibel Harbour Resort and Spa in Sanibel, Fla.

The getaway will help winter-weary alumni from the Hoosier state experience the golf, water sports and elegant surroundings of a first-rate resort facility with a chance to discuss equally “hot” topics with some of university's best and brightest faculty members.

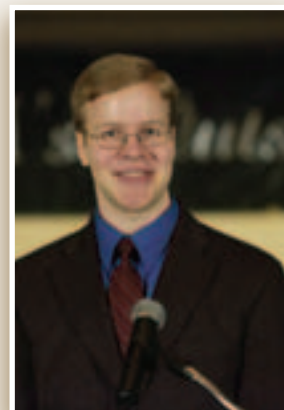
For more information about the unique opportunity, check back to the Alumni Relations Web site (<http://alumni.iupui.edu>) regularly.

Top 100 honored

Sarah Goss-Robertson of the School of Liberal Arts was named the “Most Outstanding Female Student” and Brian Deckard of the School of Engineering & Technology the “Most Outstanding Male Student” this spring during IUPUI's annual “Top 100” dinner celebration.

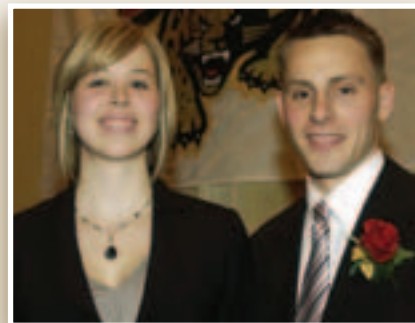


Sarah Goss-Robertson



Brian Deckard

Hall of Fame



Former Jaguar stars Ariane Mongeau and Thies Hermann became the latest members of the IUPUI Athletics Hall of Fame this winter during the 2006 induction celebration. Mongeau holds six individual or relay school records in women's swimming, while Hermann is the Jag's career record holder in points and goals scored.

Lending a Helping Hand

When people whose lives were turned upside down by Hurricane Katrina last fall, they found some unexpected partners to help rebuild their homes, communities and lives: the IUPUI family.

In the days following the horrific damage caused by the category 5 hurricane, the campus rallied to raise funds and other resources to ease the suffering. But when students and staff found out that Katrina had struck the family and neighbors of one of their own—IUPUI director of housing Hayward Guenard—in the storm-ravaged town of Waveland, Miss., they went a few steps further.

During three separate trips to Waveland and its sister city of Bay St. Louis, including a special “alternative spring break” in March, the IUPUI family brought supplies to Mississippi residents, and manpower to help clean up and rebuild the Gulf towns.

Volunteerism is nothing new to IUPUI. Civic responsibility and community involvement are built into our schools, centers and even scholarship programs. But rarely has the spirit of volunteerism been of such urgent need, on such a large scale.

The IUPUI teams’ labor gave much-needed support—and hope—to the residents in Guenard’s hometown. But it also had a profound effect on the dozens of IUPUI volunteers who saw the devastation first-hand, but also saw how resilient people can be. The students were invited to join several events and moments that celebrated the joy of life and the spirit of renewal.

“It’s taken me a while to grasp how important we all are to the success of each other,” one volunteer wrote in an evaluation of the experience. “In the long run, we are all here together.”

For more on IUPUI’s involvement in hurricane relief efforts, visit the Web site: www.iupui.edu/~extaff/katrina/.



White House Visit

First Lady Laura Bush visited IUPUI in June to shine the national spotlight on efforts to support America’s young people.

She spoke at the two-day Helping America’s Youth Conference at University Place Conference Center and Hotel on the IUPUI campus, encouraging people to “get involved” in the lives of the country’s youngest citizens. Such involvement, she noted, would help counter the “negative influences” that too often shape the world around children of all ages, from gangs and drugs to Internet predators to violence on TV and in the movies.

Helping America’s Youth was formed in 2005, announced by President George W. Bush during his State of the Union address. He named his wife as leader of the effort, which is a collaboration of individuals, faith-based groups and other organizations created to help deal with problems affecting young people.

IUPUI honored for undergraduate support

IUPUI’s efforts to improve undergraduate learning have earned the campus two major awards this year.

Both awards—a Theodore M. Hesburgh Award and a Council for Higher Education Accreditation (CHEA) Award—honored IUPUI for its principles of undergraduate learning, the foundation of curriculum for all undergraduates.

IUPUI and the University of Michigan each



Members of the team behind IUPUI’s principles of undergraduate learning.

earned Certificates of Excellence in the highly competitive Hesburgh Awards process, named for the president emeritus of the University of Notre Dame. The University of Colorado-Boulder received the awards program's top prize. The awards, presented in February in Los Angeles, are sponsored by TIAA-CREF, the leading provider of retirement services in the academic, research, medical and cultural fields.

The CHEA award also was given to IUPUI for implementation of its principles of undergraduate learning, to help raise the overall standards of educational quality.

Armstrong Honors Physician



Reggie Miller and Lance Armstrong

Lawrence Einhorn, as the first recipient of the honor.

Armstrong and his foundation spokesmen hope the \$1.5 million endowed chair will further future innovations in cancer treatment. Einhorn combines treatment of about 100 patients a year with the type of research that could well lead to breakthroughs for other patients and their physicians. The IUPUI-based physician-researcher is a member of the renowned IU Cancer Center, one of 60 cancer-oriented research centers given elite status by the National Cancer Institute.

IUPUI-based schools nationally ranked

IUPUI's well-regarded health-care law program was tied for eighth nationally in the recent *U.S. News & World Report* graduate school rankings, one of several campus schools and programs to earn that recognition.

The IU School of Medicine moved up four places to 33rd nationally in primary care and remained among the top 50 in research, ranking 45th. The IU School of Law at IUPUI moved up 18 spots among the nation's top schools, climbing to 77th. The rankings are published annually as part of the *U.S. News & World Report*'s book, *America's Best Graduate Schools*.

Undergrad research bolstered

At many college campuses across the country, undergraduate research options are limited, at best. At IUPUI, they're expected—and about to grow again!

Seven-time Tour de France champion Lance Armstrong hasn't forgotten who not only helped him achieve that lofty status, but also may have helped save his life. That led the Texas native to establish the Lance Armstrong Foundation Chair in Oncology at the IU School of Medicine—and to select his treating oncologist,

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IUPUI To join, log on to: www.alumni.iupui.edu
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A new partnership between the IU School of Informatics and Purdue School of Engineering and Technology has created the new CyberInformatics Lab, a component of IUPUI's highly regarded CyberLab.

The new lab will offer undergraduate students unique opportunities they cannot get anywhere else, providing "our students extensive internship working experiences and making them ready for the new, challenging job market," says H. Oner Yurtseven, dean of the engineering school.

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“When you’re in orbit and look back toward earth, you realize that all of us on earth are spacemen, all traveling on this spaceship called Earth. It’s critical that we take care of this spacecraft like we would an artificial spacecraft like we fly at NASA. We’re all together on this exploration, learning how earth and humans fit in the universe. These are the most inspiring, sought-after questions we humans have.”— **NASA astronaut David Wolf, IU School of Medicine (Class of ‘82)**



WINGING TOWARDS THE HEAVENS

The NASA space shuttle Atlantis, carrying IU School of Medicine graduate David Wolf (Class of ‘82) lifts off from Cape Canaveral in 1997, bound for the Russian space station Mir.



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