

A Great (Lakes) Story

Through a \$300,000 grant from the U.S. Fish and Wildlife Service, a group of Ball State students spent much of the summer on Lake Michigan monitoring the perch population. Tom Lauer, professor of biology and director of Ball State's Aquatic Biology and Fisheries Center, has coordinated the project with the Indiana Department of Natural Resources (IDNR). For nearly 30 years, the partnership has allowed IDNR to save money yet reap the benefits of one of the largest data sets ever provided on the lake's perch population. For Ball State students, the project helps jump-start their careers by giving them coveted, hands-on fieldwork while deepening their ties to the state.



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RESEARCH
R

INNOVATION + CREATIVITY

Uncovering Historic Architecture

Second Life • Straw Bale Construction
• Fulbright Scholars • NASA Research





Celebrating Our Good Works

Welcome to the fall 2008 issue of *Ball State University Research: Innovation+Creativity*. I am pleased to introduce this newly named publication, formerly called *BeneFacta*. While we continue to celebrate the *good works* of our Ball State University faculty, staff, and students, we are also eager for the publication's title to communicate the multifaceted nature of intellectual effort—be it scholarly inquiry, creative endeavor, public outreach, or other area of innovative activity.

The following pages illustrate first-rate projects that can be seen throughout campus—and beyond—from the testing in our Biomechanics Laboratory that may lead to safer, less physically stressful car seats, to the digital modeling and virtual reconstruction of a fourth to ninth century church near the Roman Forum, to the creation of a broadcast documentary showcasing Hoosier miles on Thomas Jefferson's 1806 National Road.

We are also eager for the publication's title to communicate the multifaceted nature of intellectual effort—be it scholarly inquiry, creative endeavor, public outreach, or other area of innovative activity.

These projects, like the others featured in this publication, reflect what it takes to carry out a sponsored program. First, an appropriately targeted grant proposal must be prepared and submitted—requiring great energy, ingenuity, and dedication. After a proposal successfully navigates through intense competition to actual funding, the realities and challenges of project management and collaboration take hold—no small task for faculty and professional staff members pulled in many directions both professionally and personally!

But many in our midst do indeed succeed. The statistics of our most recent fiscal year illustrate a year of work well done. Fiscal year 2007–08 brought **\$20,387,798** in external funding to the Ball State campus, an increase from \$18,084,449 the previous year. Congratulations to the **303 faculty and professional staff** who submitted the **525 proposals** that made this level of funding possible. We extend warm congratulations to all, and we trust that the readers of *Ball State University Research: Innovation+Creativity* will discover the fruits of keen minds—groundbreaking achievements—depicted in these stories.

Robert J. Morris
Associate Provost for Research and Dean of the Graduate School
Professor of Chemistry



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On the Cover: A Ball State professor and his international colleagues are using digital technology to create 3-D models of an ancient religious site in Rome. Image courtesy of Michele Chiuini.

Digital Technology Meets Ancient Roman Architecture

In Rome, modern digital technology and ancient religious monuments are coming together at an archaeological site.

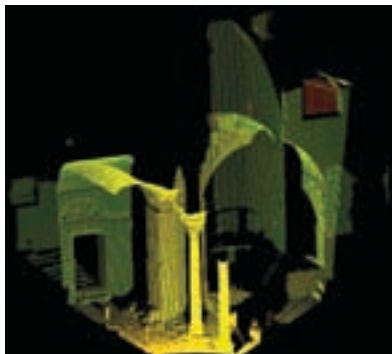
Michele Chiuini, professor of architecture in the College of Architecture and Planning, is part of an international team of researchers who received sponsorship from the Graham Foundation and Kacyra Family Foundation to use modern digital technology to document the excavation and restoration of the church of Santa Maria Antiqua in the Roman Forum.

Built in the fourth century, the structure was converted to a place of Christian worship in the sixth century. Following an earthquake in 847, it lay buried under the ruins of other buildings until it was rediscovered by researchers in 1900.

Using digital technology, including a laser scanner to survey the site, Chiuini and his team are creating digital 3-D models of the building's structure that allow them to digitally reconstruct the different layers. They



can then determine which parts of the site are original construction, which are results of the early Christian modifications, and which are restorations made after the structure's rediscovery. The digital media information can be archived in online databases.



Researchers are using laser scanners and other high-tech tools to digitally reconstruct the layers of an ancient religious site.

"The advantage of digital media is that it can connect a digital database to images for the general public or for scholars," says Chiuini. He hopes the information from the reconstruction can be combined with the information historians have gathered at the site so that the digital database can form a complete picture of the building and its history. Both the site and the other artifacts found at the site are then available to people around the world for educational purposes.

The House That No Wolf Could Blow Down

In the story of *The Three Little Pigs*, the big bad wolf huffs and puffs and blows down the house of straw. A Ball State professor, however, is proving that straw is not an inferior building component, but instead an eco-friendly alternative to more traditional materials.

Led by Timothy Gray, associate professor of architecture, students in the College of Architecture and Planning have built the first-ever load-bearing straw building in the region. The full-size, energy self-supporting structure was constructed using a variety of sustainable materials, including straw bales, laminated veneer lumber, and fly ash concrete. Solar collectors and a wind turbine, made possible by a grant from the Indiana Office of Energy and Defense Development, provide energy for lights and heat so that the building is "off the grid," independent of outside power.



The Eco Center, constructed from straw bales, is a hands-on laboratory where students can research and develop sustainable practices.

The Eco Center, as the structure is called, is unique to Indiana for its use of straw bales as a primary building material. The bales, acquired locally, provide support and insulation for the walls. Due to the climate of Indiana, with higher humidity and more moisture than other more arid regions typically associated with the use of straw bale construction, Gray and his team have had to adjust the building design to the specifics of the climate and must regularly monitor the moisture content of the straw bales.

While straw bale construction may not yet be practical for widespread application in today's marketplace, the technique does have implications for buildings in developing countries. And the other sustainable practices in place at the Eco Center can be used to create more environmentally friendly residential buildings in the United States. Overall, the structure, which was built through an initial grant from the Environmental Protection Agency, provides a hands-on laboratory where Ball State students and others from the community can research, develop, and model sustainable living.



Ball State students practice real-world cinematography techniques in the virtual world of *Second Life*.

Virtual Filmmaking

In the virtual world of *Second Life*, the Ball State University bell tower rings out the hours. The winged statue known as *Beneficence* is backlit by the sunset and the waves of the ocean. Avatars, virtual representations of real people, walk the campus and interact with everything from light paintings to laptops. They interact with each other, too, and they can even take a college class.

John Fillwalk, associate professor of electronic art and director of the Lilly Endowment-funded Institute for Digital Intermedia Arts and Animation (IDIAA), and others have been working for two years to bring virtual classrooms to life. IDIAA and its professors and students had already received national honors for their work in emerging media and emerging media art forms, so it made sense to extend their efforts into *Second Life*, explains Fillwalk.

With support from the College of Fine Arts, the Office of the Provost, and the Office of Information Technology, IDIAA created *The Aesthetic Camera*, an award-winning digital cinematography course in *Second Life* that enables students to learn real-world cinematography techniques while making virtual movies in an online studio. Through their avatars, students can check out cameras, dollies, light systems, and more to create their own movies. They can also film in a *Star Trek*-inspired holodeck that allows them to select from a variety of virtual set locations.

“All of the equipment has been virtualized and scripted. This means that the equipment has similar features to its real-world counterparts,” says Fillwalk. “Students learn concepts such as three-point lighting and then immediately apply the concept in a virtual hands-on mode.”

Second Life is just one example of Ball State’s innovation in emerging media. The university recently created the Digital Corps, an award-winning program that trains students for industry-standard software certifications, providing the Ball State community with a cadre of digital media experts.

Self-Adjusting Car Seats Create a Smooth Ride

Driving may soon become much more comfortable—and good for you. Researchers at the Biomechanics Laboratory are studying the effects of a new technology that makes driving less physically stressful and may even benefit a driver’s overall health.

Led by Eric Dugan, director of the Biomechanics Laboratory, Ball State researchers are testing software technology that automatically adjusts a car’s seat to minimize stress on the body and make the driver more comfortable. Based on the driver’s initial position, the software moves the seat, which has up to 18 adjustment configurations, to increase blood flow to the legs and reduce pressure on the tissues of the legs, hips, and lower back.

“We’re examining how different seats with different levels of available movement affect the pressure on the parts of the body,” says Dugan.

Paul Nagelkirk, a professor in the School of Physical Education, Sport, and Exercise Science, consults with the team on the effects of blood clotting from prolonged sitting. By automatically adjusting while the driver sits, the newly designed car seats may prevent blood clots, decreasing the driver’s risk of heart attack or stroke. This could be especially important for people in professions that require long periods of time in an automobile, such as police officers, truck drivers, and delivery persons.

Ball State’s reputation for research on the applications of technology to improve human function led Paul Phipps, president of Comfort Motion Technologies and inventor of the software, to seek out the expertise of Ball State’s Biomechanics Laboratory.

In the first phase of the project, which began in spring 2008 and was funded by Comfort Motion Technologies, Dugan and his team of faculty and graduate students used pressure sensing mats to measure the subjective and biomechanical responses of sitting in a traditional car seat compared to the self-adjusting seat. The second phase of the project will track the eye movements of drivers and look for possible improvements in attentiveness and reaction time, as well as use musculoskeletal modeling to examine how the seats affect load and stress in the pelvis and lumbar spine.

Their efforts may just help to make your next cross-country trip much more comfortable.

TRADITION + INNOVATION

Bridging Two Cultures

Becoming familiar with a new community can be difficult even if the new city is just a few miles away. Imagine if the new community is more than 6,000 miles from home.

This past year, Ball State students and faculty worked with citizens of Greensburg, a city of about 10,500 people in southeastern Indiana, to help the community welcome some new residents from Japan. With the opening of a new Honda automobile plant in the area, community leaders wanted to ensure that the Japanese employees and their families could easily integrate into the community. In turn, they wanted to help current Greensburg residents learn about Japanese customs and traditions.

“The idea was to make some useful materials for Greensburg residents to learn about the Japanese culture and to learn the language, and also for the newcomers—Japanese workers—to learn something about Indiana,” says Sadatoshi Tomizawa, professor of Japanese.

Tomizawa along with Maria Williams-Hawkins, associate professor of telecommunications, and students from the Departments of Modern Languages and Classics and Telecommunications traveled to Greensburg to meet with the

community leaders. Based on their input, the students wrote and produced a booklet containing 25 Japanese-English language skits with cultural notes for the skits and information about the cultural and communication differences between Japanese and American people. They also filmed the skits for a DVD. The communication pieces—funded by Indiana Campus Compact; the Office of the Provost; the College of Sciences and Humanities; the College of Communication, Information, and Media; and the School of Extended Education—will help the new and current community members better understand and communicate with one another.

Students and faculty also spent time working with the local elementary schools. The Ball State team taught workshops that raised awareness about Japanese customs and culture. They held festivals to celebrate Japanese foods, dancing, and martial arts. One of these festivals, Japan Day, included more than 1,000 elementary school students.

“We had great success helping educators understand the things they need to know in order to work effectively with the Japanese families,” says Williams-Hawkins.

The residents of Greensburg were not the only ones to benefit from the project. The students’ immersive learning experiences will give them a broad perspective as they enter the global workforce.

Telling the Stories of the National Road

The Historic National Road—the first federally funded highway—holds an important place in Indiana’s history. Thousands of Hoosiers have grown up in towns along or near the road, known officially as U.S. Highway 40, and thousands more from all over the country have traveled it.

“Many travel guides have been written about the National Road,” says Nancy Carlson, associate professor of telecommunications. “But no one has told the many human stories of building, living along, or traveling across it.”

Until now, that is. Carlson and a group of Ball State students are researching and producing a documentary about the road’s history, stories, and famous landmarks.

As the first major gateway to the West, the National Road provided a direct route for Americans on the move. Commissioned by Thomas Jefferson in 1806, the road stretches from Cumberland, Maryland, to Vandalia, Illinois. Indiana’s 156-mile segment from Richmond to Terre Haute was completed in 1834 and paid for with local dollars, since federal

money for the project had run out. *Stories along the Indiana National Road* will tell the stories that unfolded on, around, or because of the road. The documentary will feature personal recollections and memorabilia. Hoosiers will narrate stories,

letters, and journals and perform music that celebrates the road.

Carlson’s team, which includes both undergraduate and graduate students, has been involved in every aspect of this immersive learning project—from scouting and research to running the cameras and editing film. The group has worked closely with the Indiana National Road Association to identify the people and stories that best tell the remarkable history of the road.

Stories along the Indiana National Road, which is funded by a National Scenic Byways Program grant from the Federal Highway Administration, will begin

airing on PBS television stations in Indiana, Ohio, and Illinois in 2009. The documentary will also be used in visitor centers, museums, and classrooms across the state.



Telecommunications students prepare to film a segment for a documentary about Indiana’s stretch of the Historic National Road, which will air on PBS stations in 2009.



The Indiana Ready Schools Initiative offers activities and workshops to help children and families prepare for kindergarten.

Bringing Schools and Kindergarteners Together

Recognizing that the transition to kindergarten can be a stressful time for families and schools, Ball State's Department of Elementary Education is helping students get off to a bright start. Working with schools, families, and the community, Ball State faculty and students are preparing children for kindergarten and the schools to receive them.

"We focused on strengthening early education programs, improving the connections between these programs and the Muncie Community Schools, and making sure the families were involved," says Patricia Clark, associate professor of elementary education, who led the project with Eva Zygmunt-Fillwalk, assistant professor of elementary education.

Ball State faculty worked with Huffer Child Care Resource and Referral, a local child center, to identify and assess early childhood education programs in the area and to develop a series of workshops for parents of children preparing for kindergarten. These workshops provided families with knowledge about the importance and benefits of quality child care and encouraged the involvement of families in leadership roles and decision-making within the schools.

Additionally, Ball State faculty helped form a community transition team that collaborated with child care centers and elementary schools. The group planned activities such as "Popsicle night" the week before school started to help kindergarteners and their families become familiar with the school, principal, and teachers.

Vital to the success of these projects were Ball State's connections within the Muncie-Delaware County community. Muncie was chosen by the Indiana Department of Education as the site to pilot the program, called the Indiana Ready Schools Initiative, due in large part to the presence of Ball State University and the role its elementary education department plays in Muncie Community Schools and local early childhood development programs. A grant from the Indiana Family and Social Services Administration further aided the Ready Schools Initiative with a Ready to Learn project.

Due to the success of the program, the Ready Schools Initiative has since spread to 14 other communities across Indiana and will expand further to help more children around the state have an easier time during the first few days of kindergarten.

CREATE + COLLABORATE



Scott Trappe

Houston,
Can
You
Feel the
Burn?

By Claire Arbogast

For more than a decade, Ball State's Human Performance Lab has been working with NASA to fight muscle atrophy in astronauts.

Feel the burn in your calves as you bicycle up a hill. Lift yet another gargantuan bag of mulch and groan while your cheek pushes against the pungent plastic. It's gravity that makes it hard to get up the hill and each bag of mulch seem heavier. Everything on Earth, including every muscle and molecule in your body, is dragged toward the center of the Earth by gravity's force. Just standing makes your muscles push against gravity.

Even though there's enough gravity near our planet to keep an immense space station and our moon orbiting nicely, space is pretty much weightless. Those legendary clips of astronauts tumbling buoyantly with hair sticking up belie the significance of what weightlessness does to the human body. Astronauts turn into serious couch potatoes as their muscles shrink and lose performance without the resistance of gravity.

A Leader in the Exercise Prescription

Since 1995, the Human Performance Laboratory (HPL) at Ball State University has been working with the National Aeronautics and Space Administration (NASA) to understand the underpinning molecular biology and muscle mechanisms and to develop an exercise regimen to help astronauts fight off muscle atrophy.

"Our group is at the forefront of the exercise prescription," says Scott Trappe, director of HPL. "We know that what they are doing up in space is not optimal. So we're trying to find the answer: the optimized prescription, the best bang for the buck."

NASA believes exercise is the best way to protect skeletal muscles. Over the years, the HPL team of faculty, students, and staff has been pushing to minimize the exercise time and maximize the benefit with the right combination of exercise and equipment. "We've been whittling it down, getting it to the minimum possible—down to less than 2 percent of the total time they are in space—about 30 minutes a day," says Trappe.

The years of discovery are paying off. NASA is working right now to put this exercise prescription into practice in the International Space Station exercise program.

Intensity is Key

The prescription protocol is an intense combination of resistance exercise and aerobic exercise. HPL researchers have been working to find a balance between the two types of activity. It's their trademark work, and they've found that when balanced appropriately, the exercise regimens complement one another and are effective at protecting skeletal muscle. The key is to do resistance exercise only on the third day with aerobic exercise in the intervening days. And the secret to this seemingly simple prescription is intensity.

Research at HPL into the underlying genetics of how muscles operate revealed that certain levels of exercise trigger muscle

remodeling, impacting muscle health for days. Trappe and his colleagues have focused their research on the dose-response relationship. They've found that light exercise does not stimulate the system adequately, while intense exercise for a short period of time stimulates the system for a longer period of time.

"Intensity wins," says Trappe. "We can actually turn on the body's machinery to be effective for the muscle to close to three days. Our exercise is fairly challenging but short in duration."

'Mistake' Leads to Long-Term Relationship

Like many great ideas, the exercise prescription arose from an early surprise in the initial mid-1990s HPL study of muscle loss in astronauts while in space.

"We kind of made a mistake," admits Trappe. "We thought there would be such a rapid, major loss of muscle that we developed and built a special device to assess the crew members' strength early in the flight, middle in the flight, and late in the flight. Instead, we found that the exercise testing actually was protective."

Common thought at the time was that exercise must be massive and challenging to protect muscle. The study provided the first information that exercise intensity instead had the greatest impact on muscle mass. The results were controversial. Trappe argued that the exercise regimen was protective for the muscle. Another camp disagreed, saying the astronauts had hardly done anything.

While the data revealed that the astronauts had not lost any strength over the course of doing the exercise, other researchers were still not convinced.

"That really was an impetus for an entire series of research projects by us and others that extended our relationship with NASA. We used that initial study as pilot data to set the stage for the exercise prescription model that we've been working to define over the last decade with NASA," says Trappe.

A Common Thread with Aging Research

Along with solving questions that beget more questions for NASA, HPL has been doing research in aging and sports performance. In terms of muscle physiology, Trappe finds these areas strategically similar and complementary to the research he is leading on muscle atrophy in space. The common thread to this diverse approach is a focus on helping to improve or maintain muscle performance.

HPL's research with the National Institutes of Health (NIH) on aging's effects on muscles has had direct implications for fighting muscle atrophy in space. And since both NIH and NASA are collaborators with HPL, the findings flow back and forth. In fact, some of the NASA research was on the effects of bed rest because the adaptation to low-gravity space induced symptoms also seen in the inactivity that often comes with aging. Their sports performance research into muscle adaptation in hard-training athletes has deepened the understanding of how muscles adapt, remodel, and turn over.



Astronaut Peggy Whitson exercises at the International Space Station. HPL's researchers have found that intense exercise for a short period of time has a beneficial effect on muscle mass while in space. (Photo courtesy of NASA)

The research has begun to make an impact in the field of physical therapy. For older adults, as with astronauts, intense exercise sessions conducted a couple of times per week improved or maintained muscle performance.

"If you tell someone who is 70 years old, 'I can protect your muscles, but it will take you eight hours a day,' the odds of the person going to the gym eight hours a day are pretty much zero. We have it down to two to three times a week. Again, intensity has proven to be the key," says Trappe.

Optimizing the Exercise Prescription

HPL is continuing to optimize the exercise prescription for different muscles and is working toward doing in-flight assessment of performance—changing the prescription on the spot for each individual. Plus, they are on the edge of understanding the differences in how men's and women's muscles respond to the lessening of gravity.

"When I first got involved with NASA, I didn't envision I'd still be doing research with them 13 years later," says Trappe. "Same with NIH. There's plenty of work to be done, and we'll continue down these lines of research for quite some time."

And thanks to HPL's research, tomorrow's astronauts will return from space as physically fit as when they first left the Earth's atmosphere.



Claire Arbogast is a freelance writer from Bloomington, Indiana.

About the Human Performance Laboratory

- The Human Performance Laboratory (HPL) was founded in 1965 by Bud Getchell. Getchell wanted to answer the question: "What's going on in the body and how might we make it better?"
- Early research included studies on exercise and heart disease, the physiological attributes of long-distance runners, and the storage and use of glycogen in muscle.
- Current researchers continue to mesh the fundamental tools of exercise physiology with more recent innovation in cellular physiology and molecular biology. In addition to the studies with NASA and National Institutes of Health, researchers study topics such as exercise in children and adolescents, muscle mechanics with swimming and running, and the clinical benefits of exercise training and physical activity assessment for diseases such as diabetes, pulmonary disease, and cancer.
- Since 2001, HPL researchers have received more than \$6.4 million in research funding.
- Students pursuing master's degrees in adult/cardiac rehabilitation and exercise physiology or a doctoral degree in human bioenergetics study at HPL.

www.bsu.edu/hpl

FULBRIGHT SCHOLARS: CHANGING PERSPECTIVES

Ball State's **Fulbright Scholars** are a diverse lot in terms of specialty areas and countries of study. They are unified, however, in their undeniable ability to change the perspective of the world.

By Layne Cameron

At first blush, the phrase, “A diverse lot,” best describes Ball State University’s Fulbright Scholars.

Or does it?

Projects by recent participants span three colleges and run the gamut from forgotten people, places, and materials of Third World architecture to exploring South Africa as a center of musical theatre to the impact of East German philanthropic campaigns.

The breadth of the initiatives is indeed varied. The threads of commonality, however, are far more intriguing.

The scholars are unified within the fraternity of the United States’ largest international exchange program through their intense dedication to learning and teaching and their zealous commitment to their areas of expertise. But what the scholars are credited for, again and again, is changing the perspective of those touched by their projects.



In the last 20 years, more than 25 Ball State faculty members have been selected as Fulbright Scholars, including (left to right) Harold Mortimer, Greg Witkowski, and Nihal Perera. In spring 2009, Dom Caristi, associate professor of telecommunications, will continue the tradition when he travels to Greece to teach students at the University of Athens how to produce documentaries.

An **Architect** of Change

The word “architecture” usually stirs images of Frank Lloyd Wright homes and grandiose buildings such as the Eiffel Tower or the Taj Mahal. Few, if any, however, equate the word with the Third World, where people often reside in makeshift structures of pallets and sheet metal cobbled together with other discarded materials.

During the 2006-07 academic year, Nihal Perera, associate professor of urban planning in the College of Architecture and Planning (CAP), was selected as a Fulbright Scholar to join the faculty at Hong Kong Baptist University, one of Ball State’s sister institutions. His Fulbright was built on nearly a decade of dedication to CapAsia, an international immersive learning program he founded.



Nihal Perera teaches a class outdoors in South Asia during the 2008 CapAsia trip.

At the university, Perera's research and teaching centered on Hong Kong and the surrounding East and South Asia regions relating colonial and national discourses to construction of social spaces by regular people. His goal at Hong Kong, as it has always been at Ball State, was to teach students to be globally conscious and locally effective. "It's unfortunate, but we often talk about globalization as Westernization, as if there is nowhere else to look," he says. "I want to help students investigate the issue of what Asians use in their own cities to create their own spaces."

Ball State students learned this in dramatic fashion during the 2005 CapAsia trip. Already in Asia, the group changed its itinerary because of the December 2004 tsunami that killed more than 250,000 people. They spent two weeks in Perera's homeland of Sri Lanka at the fishing village of Kalametiya, which had been devastated. Working side-by-side with the villagers, Perera, his CAP colleagues Wes Janz and Tim Gray, and the 21 students helped with the creation of 30 single-story homes and a small playground.

Perera deepened the relationships of CapAsia's partners by returning to the tsunami-ravaged area this spring. The theme of this trip was "Post-Tsunami Developments in South Asia," which allowed students to compare the devastation and recovery of the tsunami with hurricane recoveries in the United States.

"By getting the community involved and participating in their processes, the students were able to have a great impact on the village," Perera says. "In turn, they developed a critical understanding of their own cultures and an ability to locate themselves within an increasingly globalized world."

A Stage for Learning

In our increasingly globalized world, is New York the center for musical theatre? Or is it simply *one* such center? What about South Africa? Harold Mortimer, musical theatre coordinator and assistant professor of voice in the College of Fine Arts, shed light on this question. During his assignment as a Fulbright scholar to Tshwane University of Technology (TUT) this past spring, he

balanced his time exporting traditional American techniques while absorbing the nuances of South African productions.

"I was there to roll up my sleeves and work," he says. "Seeing how hungry the students were to learn made it one of my greatest teaching experiences."

During his stay, Mortimer helped expand a three-year program into four. Working with his South African colleagues, he restructured much of the curriculum and created new classes in music theory and directing and a voice master class as well as launched an exchange program between TUT and Ball State.

Mortimer also made strong connections with the 60 students through classes, office hours, and by serving as the music director for the student production, *I Love You, You're Perfect, Now Change*.



Harold Mortimer works with students at Tshwane University of Technology in South Africa.

Yet, even a continent away immersed in activities at another university, Mortimer managed to keep close tabs on Ball State. Through the Facebook Web site, he stayed in regular communication with his students, many of whom he had recruited to come to Ball State four years ago and were preparing for graduation.

He even managed to surprise his students by flying to the Big Apple from South Africa to watch those who were participating in a showcase in New York, an annual event that connects Ball State students from the College of Fine Arts with professional agents and producers. "The jet lag was well worth seeing the astonishment—and some tears—on their faces," he says with a smile.

A Campaign for Change

Growing up, Greg Witkowski, assistant professor of history in the College of Sciences and Humanities, was fascinated with military history, which later evolved into an interest in both German history and peace and conflict studies. "The Berlin Wall came down when I was a freshman in college," he says. "And it set me on a path of learning about communism in East Germany and the Cold War."

Witkowski's passion led him to net a research-only Fulbright fellowship. For one year, he kept an office at the Free University of Berlin, attended the university's seminars, and scoured the country's church and state archives. He focused on how East Germans sought to change conditions of the poor through their

A Lens of Tragedy

philanthropic outreach to developing nations. This little-known charitable giving illustrates that Eastern European countries, often considered poor in the West, possessed the wealth and motivation to aid those less fortunate, he says.

Witkowski found that communist outreach, spurred in direct competition with West Germany's international initiatives, sought to build diplomatic bridges around the world. His examination posits that these donations are an important element both in terms of Cold War competition and in creating cultural understanding of the developing world. Breaking down the outreach efforts into three categories, Witkowski was able to identify patterns that aligned with those of their Western counterparts. East Germany's Solidarity Committee sent food and medicine as well as guns, trucks, and medical technologies to care for wounded soldiers.

Meanwhile, the church campaigns aligned with government initiatives, yet focused on humanitarian needs and exported traditional aid items such as clothes, food, books, and furniture. The grassroots initiatives, however, began to break away from government doctrine. "These collections tended to be carried out by younger people who rejected state policies and saw the churches too closely aligned with the communist regime," Witkowski says.

Witkowski's research found more similarities than differences between East Germany's efforts and those spearheaded by Western nations. "That's going to be the surprise to many students," he says. "These students may be more open to this than my generation, especially since they didn't grow up during the Cold War."

And that surprise will come soon. Witkowski is sharing much of what he's learned through a class on philanthropy, which is now being offered through the Honors College.

Mission Accomplished

Certainly these were the weighty pursuits Senator J. William Fulbright of Arkansas had in mind when he established his namesake program more than 60 years ago as a healing mechanism during the aftermath of World War II. These scholars have, no doubt, fulfilled his vision of fostering leadership, learning, and empathy between cultures—and so much more.



Layne Cameron is associate director of university communications at Ball State University.

Ball State professors are not the only ones changing perspectives through their Fulbright experiences. Omer Salih Mahdi, a graduate student from Iraq studying journalism through the Fulbright Scholarship program, is changing how Americans view what Iraqis face every day.



Most Americans' definition of Iraqis is gleaned from a steady diet of graphic media coverage. Images emanating from the region show men screaming and cursing as they pull bodies from charred wreckage; veiled women wail at the loss of yet another relative or carry bloodied children, desperately seeking medical attention.

In 2006, the medical doctor-turned-documentary-filmmaker took a camera where none had been before—into an emergency room in the heart of Baghdad—to create *Baghdad Hospital: Inside the Red Zone*. He saw busloads of children wheeled through the doors, all of them wounded from roadside bomb attacks. Often Salih Mahdi stood helplessly as many of them died because he, and other Iraqi doctors, did not have access to basic resources.

"My worst days were in the hospital as a doctor; it made me feel very weak that I couldn't do anything," Salih Mahdi says. "Making the film helped me change those feelings. Overcoming that feeling of weakness was what drove me through the process; it was very personal for me."

After the filming was complete, his older brother was shot and left for dead, two younger brothers were kidnapped and later released, and his father was kidnapped and killed. His family has since been moved to the safety of Syria. The accolades lavished upon the groundbreaking documentary, even in light of the personal sacrifices, have shown Salih Mahdi that his efforts were worthwhile. *Baghdad Hospital* aired on HBO earlier this year, won an International Emmy, and was broadcast on the BBC and in 23 other countries. On a more personal level, it earned him entry to study in the United States.

"I feel very fortunate to be at Ball State," Salih Mahdi says. "The awards the documentary has earned and what I am learning at Ball State have really made me feel that the risks and difficulties I went through were well worth it."



Fulbright Scholar Omer Salih Mahdi

Communicating in a Crisis

When catastrophe strikes, the Indiana Department of Homeland Security (IDHS) will grab a crisis communications protocol created by a group of Ball State University students.

The project was initiated when IDHS approached Robert “Pritch” Pritchard, associate professor of journalism and a longtime military public affairs officer. He recruited seven students from Cardinal Communications, Ball State’s full-service, student-run public relations and advertising firm that has been recognized as one of the top 10 student-run public relations agencies in the country by the Public Relations Student Society of America, to take on the challenge.



“People were glad we were writing this protocol because there really wasn’t a document prior to this one that existed,” says Jody Kress, a 2008 graduate and member of the crisis communication protocol team. “Learning that we were a part of something that could spread nationwide was pretty impressive.”

Long-term Relationship with IDHS

The communications protocol was not the first project Ball State had worked on with IDHS. Other projects have tapped into Ball State’s expertise in the areas of telecommunications and digital production, and future projects will highlight the university’s prowess in education and emergency management.

In 2007, a team of telecommunications and journalism students produced eight 30-second public service announcements to educate viewers about the precautionary steps to take before an emergency occurs. The students wrote, shot, and edited the segments of the *Take Responsibility* video series, which continue to air on broadcast and cable television channels statewide.

IDHS has also approached Ball State to develop curricula for high school students to raise awareness of careers in homeland security and motivate students to consider these careers. Education students will begin working on this immersive learning project in the spring.

Helping 911

In addition, Ball State has received a \$2.5 million grant from the federal Department of Homeland Security to improve the communication skills of the nation’s 911 dispatchers and other emergency public communications professionals. In this three-year project led by Thad Godish, professor of natural resources and environmental management, students will develop a communications training DVD, an online independent study module, and on-site hands-on training activities.

Thanks to the efforts of Ball State students and faculty, Indiana residents can rest easier, knowing that emergency planning officials are ready in case of a disaster.



Cardinal Communications member Leah Logan presents the crisis communications protocol to the Indiana Department of Homeland Security at the Indiana Statehouse Rotunda in April.

Before working on the protocol, the students took it upon themselves to complete the Federal Emergency Management Agency certification course on public information systems, which taught them the basics of incident management. They then contacted state public information officers around the country to determine what works and what doesn’t in crisis communication planning.

The result was a protocol that addresses how IDHS will communicate with the citizens of Indiana during an emergency, including the processes and responsibilities, with the goal of ensuring the most effective and efficient communication. The protocol covered emergencies—from natural disasters such as floods or tornados to disease outbreaks to terrorist attacks—and included a strong focus on communication procedures when typical channels are disrupted due to lack of electricity, downed satellites, or widespread loss of cellular towers.

Examining the Internet's Effects on Society

With computer and Internet technology increasing rapidly, one researcher is examining how new technology can impact the world at levels as large as the government and as small as individual security.

Sushil Sharma, chairperson of the Department of Information Systems and Operations Management and professor in the department, is researching community and social informatics and assessing the effects of technology on society.

"When any technology is used and applied to society as a whole, it has an impact on the community and on the social world," says Sharma, the 2007 Ball State University Researcher of the Year.



Sushil Sharma

His recent research includes studying the concept of e-government, which provides increased accessibility to the government through the use of the Internet, including making government documents available online and providing access to government officials. He is examining whether e-government will lead to a more direct democracy—an e-democracy.

"The real framework of e-government should change political organizations and democratic structures," says Sharma.

Sharma's study in this area looks at how the government culture might change with an e-government and how well the countries that are using the e-government model are actually following through with the structural changes in their government systems.

Additionally, he does research in information security. Sharma is currently working on a research project that looks at keystroke latency, which measures the details of the ways individuals use the computer keyboard. Each person has a unique pattern of typing on a keyboard, like a DNA profile, that is impossible to replicate. If that pattern could be incorporated into computer technology, it could be used to improve computer security and protect computers against information theft, he says.

Just as researchers continue to develop new ways to use the Internet in society, Sharma will continue to look at the impact this technology has on our safety and security.

Making the World a Less Violent Place

It should come as no surprise that social justice is a top concern for Larry Gerstein. In his third year as director of Ball State's Center for Peace and Conflict Studies, Gerstein is conducting research focused on making the world a less violent place.

"There's been a good deal of psychological research on aggression and violence but very little on nonviolence and nonviolent strategies," says Gerstein, the 2008 Ball State University Researcher of the Year.



Larry Gerstein

His research includes studies on ethno-political violence between Hindus and Muslims in India, where he and one of his doctoral students examined the reasoning behind the violent actions and looked for possible solutions to these conflicts. With another doctoral student, he has examined the trauma experienced by Tibetan women fleeing from persecution in China. His work also includes the further development of a research measure designed to analyze nonviolent tendencies and the nonviolent strategies that people use.

As a professor in the Department of Counseling Psychology and Guidance Services, Gerstein is concerned about how mental health professionals and their services are viewed in society. With Stefania Aegisdottir, associate professor in the department, he has studied the attitudes, behaviors, and expectations that people have of mental health professionals and their services. The colleagues have designed a measure that tests beliefs about psychological services, and they plan to use the knowledge gained through their studies to make recommendations on how to improve attitudes toward mental health services.

"I've been advocating for the recognition and respect of indigenous models of science and scientific practices worldwide," Gerstein says. He is completing a book, *International Handbook of Cross-Cultural Counseling*, that highlights such models.

At the Center for Peace and Conflict Studies, Gerstein has been working to improve the services the center delivers, such as reconciliation and mediation, and encouraging cross-disciplinary research, presentations, and grants.

He will continue to work to advance the cause of social justice for all individuals—both locally and around the world.