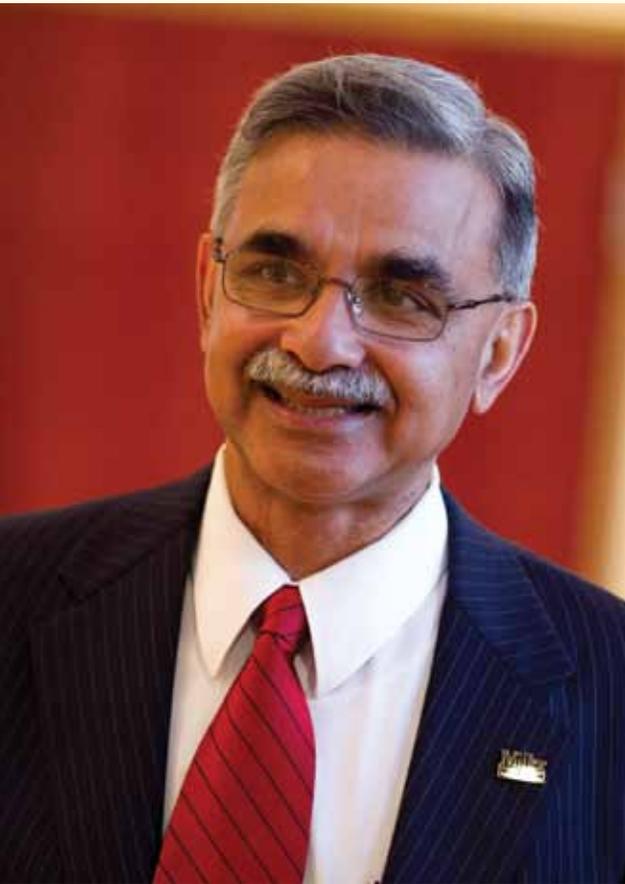


# Innovation as a Competitive Edge



Rajib Sanyal, Dean, Miller College of Business

Earned Excellence



The Best Business Schools  
In The World

On the cover: (top) Dawn Savidge, '11, wraps a prototype leg with simulated skin. (bottom) Matt McLocklin, '11, displays "black box" that can be used to share information on school buses to keep children safe.

Our entrepreneurship program has long been nationally lauded for its challenging curriculum (including the shirt-drenching, cold sweat capstone pass-fail course), symbiotic ties with the entrepreneurship community, and the outstanding successes of its graduates. We continue to imagine the possibilities, expanding into exciting and novel areas such as the **Military 2 Market** arena.

In our spring issue of *Ball State Business*, you will explore how, under the leadership of director Michael Goldsby, we have partnered with the U.S. military to transform some of its research inventions into civilian world applications. This innovative partnership has redefined the reach and scope of our entrepreneurship program and engaged our students in the most innovative and hands-on of ways.

That we are an acknowledged leader in entrepreneurship education has been further reinforced with the award of a **competitive \$1 million grant** by the U.S. Department of State to train faculty in business development and free enterprise at Kandahar University in Afghanistan. This and the Military 2 Market initiatives, together with expansion in faculty and staff at our center, continue our rich tradition of never resting on our laurels, recalling Malcolm Forbes' insightful observation, "When you cease to dream, you cease to live."

Miller College continues to flourish on every measure—new faculty, curriculum revisions and innovations, robust enrollments, enthusiastic alumni support, and the opening of new learning facilities—despite challenging economic circumstances. With resources in mind, we are experimenting with this issue of our *Ball State Business* magazine by creating a hybrid format—a shorter but focused print version to complement a more extensive presence online. So once you have read this piece, I invite you to go to [www.bsue.edu/business/magazine](http://www.bsue.edu/business/magazine) where you will find expanded stories as well as alumni and Miller College news including your favorite Connections section that we have always carried in the paper version.

Let us know what you think of this variation of your alumni magazine by e-mailing us at [www.bsue.edu/business/contactus](http://www.bsue.edu/business/contactus).

With warm regards and an ever-open invitation to drop in anytime you are in the neighborhood,

Rajib Sanyal  
Dean



## Innovation and Entrepreneurship



By Michael Goldsby

While the federal government contributes billions of dollars to research and patents, something is missing. Many of the patents and inventions that can benefit civilians do not make it off military bases and the battlefield. That's where

Ball State's entrepreneurship students come in.

The missing component is a focus on developing innovative talent to work with the research scientists, engineers, and technologists. Our entrepreneurship program has embraced this challenge by developing a curriculum based on design, innovation, and applied creativity. This new model of entrepreneurship education makes our award-winning program comprehensive, sustainable, and transferable.

Our Military 2 Market program has proven very successful. The Entrepreneurship Center has signed an educational partnership agreement with the Department of Defense, the Federal Laboratory Consortium, and the Crane (Indiana) Naval Base to create

opportunities and more for Miller College students to work with government research scientists and engineers on technology transfer.

Entrepreneurship students are given access to government patents and intellectual property and challenged to find commercial opportunities for the technologies such as simulated skin for future doctors and nurses to hone their skills, a "black box" for school buses to protect our children, and a laser to rescue trapped accident victims. Navy technology transfer officers, laboratory scientists, and entrepreneurship faculty provide coaching for the students.

We leverage this program to other partners across our campus and state. While we

hope that businesses start out of the initiative, our chief goals are to train our entrepreneurship students to be technology literate so that they can work with the technologies they will come across in their future careers and businesses and provide our communities with the human capital to adapt and thrive in the global marketplace. M2M is playing an important role in making that possible.

Learn more about how our entrepreneurship program is a national leader at [www.bsu.edu/business/magazine](http://www.bsu.edu/business/magazine).

*Michael Goldsby is the Stoops distinguished professor of entrepreneurship and the director of the Entrepreneurship Center.*

**BALL  
STATE**

# BUSINESS

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MILLER COLLEGE OF BUSINESS

**Bringing Military Technology  
to the Marketplace**

Entrepreneurship students  
market simulated skin,  
a black box for buses,  
and a laser to save lives



# Bringing Military Technology to the Marketplace

**The problem:** The U.S. Navy has more than 180 patented (or patent pending) inventions and a mandate to transfer the innovations to the private sector.

**The solution:** A partnership between Ball State entrepreneurship students and Navy researchers.

**The partnership:** Known as Military 2 Market (M2M), it began in October 2010 and has already taken major steps toward changing and saving lives.

“The students in the M2M program have shown incredible creativity in taking our patents and dreaming up new nonmilitary applications,” says John Dement, technology engagement officer at U.S. Naval Surface Warfare Center, Crane Division, which operates a research-centered facility about 70 miles southwest of Indianapolis. “This has distinguished them from any other programs I’ve seen. Ball State’s entrepreneurship program pushes them to dig in and talk to people outside the university on the technologies and the applications.”

Ongoing projects for the spring 2011 semester include commercializing simulated skin for doctors, nurses, and other health care professionals to practice their surgical skills, a “black box” unit for buses, and a laser device to quietly cut through steel in seconds and assist rescue personnel at automobile accidents. Learn more at [www.bsu.edu/business/magazine](http://www.bsu.edu/business/magazine).

“This partnership provides students the opportunity to work with some of the best scientists and engineers in the world,” says Michael Goldsby, the Entrepreneurship Center’s director and Stoops distinguished professor of entrepreneurship. “Students develop business ideas around existing applications that are currently being patented. Bridging military technology with entrepreneurship education creates a unique learning experience for our students.”



The students ultimately provide to Crane officials a business plan or marketing information that they can:

- license to the students if they chose to start a business
- provide to other entities to help license to another company
- assess that the technology has limited commercial potential.



## Discover More Miller College Advances

Explore how Miller College is touching the world! Read *Ball State Business* magazine online at [www.bsu.edu/business/magazine](http://www.bsu.edu/business/magazine).

See these stories and more:

- Miller College emphasizes free market principles and entrepreneurship in Afghanistan.
- Guest speakers from throughout the United States and around the world come to campus.
- Ball State surpasses \$200 million campaign goal.
- Read expanded coverage of students working with naval base and marketing products that may save lives.
- < • David Young (standing), business student, wins international information technology competition in Sweden.



“Our research has found nothing that comes as close to simulating human skin as our product,” **Dawn Savidge, '11**, says. “We talked to several respected people in the medical field, including one doctor who recalled he had practiced his suturing skills on a towel wrapped around a sponge.”

## An Aid to Perfect Surgical Skills

### Military-created simulated skin commercialized to meet medical need

Doctors, nurses, and others in the medical field will no longer have to practice their surgical skills on unrealistic plastic body parts or scarce human cadavers, thanks to a simulated skin product commercialized by two Ball State students.

Entrepreneurship majors **Sean Linehan, '11**, of Indianapolis and **Dawn Savidge, '11**, of Noblesville, Indiana, are working to bring a lifelike skin product to market by 2012.

Developed by a military engineer for use in ballistics testing, “sim skin” will come in several thicknesses to imitate skin that thins as people age. Produced in various hues, the product will be molded to layer upon artificial limbs more easily than current simulated skin.

A lifelike skin product has unlimited potential in the marketplace due to expansion of medical and health services, training, and education, Savidge says.

She indicates there are nearly 16,000 medical centers in the United States, and 19 colleges and universities in Indiana have some sort of nursing/medical program.

“Our research has found nothing that comes as close to simulating human skin as our product,” she says.

Linehan and Savidge have been assisted in their initial research by his parents, who work in medical facilities in the Indianapolis area. As a result, the pair spoke with a variety of medical personnel to get their insight on what type of products are most needed.

Learn more about simulated skin:  
[www.bsu.edu/entrepreneurship/simskin](http://www.bsu.edu/entrepreneurship/simskin).

## The Role of Entrepreneurship Education



Michael Hicks is the director of the Center for Business and Economic Research and associate professor of economics.

*By Michael Hicks*

Since the Enlightenment, the entrepreneur has been the central figure in the economic narrative of prosperity and growth. The notion of the entrepreneurial spark that guides investment, innovation, and growth dominates the expansion of free markets in the developing world and continues to capture our attention in the United States.

The idea of the entrepreneur is no longer novel, but it is still fresh. It is of great interest to taxpayers and policymakers who wish to see their economies improve in low cost, high value ways.

Today, the study, education, and deployment of entrepreneurs constitute a vital intellectual activity in universities across the country. A central mission in higher education is better understanding entrepreneurship, explaining its effect on economic performance, and most importantly teaching students how to become entrepreneurial. Learn more about the economic side of entrepreneurship at [www.bsu.edu/business/magazine](http://www.bsu.edu/business/magazine).

# Beam of Life



## Laser cuts steel in seconds, improving odds of surviving an accident

The anxiety of being trapped in a vehicle after a horrific accident can be made worse by the deafening noise of rescue equipment and the steel being pulled apart. Those days may be soon be over thanks to the **Beam of Life Device (BOLD)**, a laser system originally created by the military for use on the battlefield.

Entrepreneurship majors **John Benjamin, '11**, of Fortville, Indiana, and **Adam Odgaard, '11**, of Indianapolis, are working to bring the laser system to market by 2012. The project is among many innovative products in the Military 2 Market (M2M) program.

“It cuts through a few inches of steel in just seconds,” **John Benjamin, '11**, says. “Emergency personnel want to get victims to the hospital in the golden hour, or the first 60 minutes after an accident, in order to improve survival.”

BOLD promises to revolutionize extrication equipment and procedures by replacing cutting blades and piston-rod hydraulic tools currently used by the vast majority of emergency rescue teams around the world.

The device requires less space, weighs hundreds of pounds less, is easier to wield, and faster to step up and activate than current hydraulic systems, including the Jaws of Life.

Learn more about the Beam of Life Device:  
[www.bsu.edu/entrepreneurship/beamoflife](http://www.bsu.edu/entrepreneurship/beamoflife).

# Peace of Mind for Parents

## School bus “black box” could solve problem of overlooked kids

It's a sad story, made all the more troubling by its frequency. Schoolchildren and disabled adults left inadvertently on buses and vans, in frigid cold or sweltering heat, sometimes with tragic results. But a joint project between Ball State entrepreneurship student **Matt McLochlin** and researchers at the U.S. Naval Surface Warfare Center (NSWC), Crane Division, in Indiana could help put an end to such concerns forever.



Developing a concept that allows various battlefield units to share information—digital and/or analog—on a single communications network, McLochlin and his Navy mentors have produced a “black box” device combining global positioning system (GPS), radio frequency identification (RFID), and other technologies to enable school districts and similar large fleet operators to better monitor their vehicles and those they carry.

“It's kind of like OnStar, only it does a lot more,” says McLochlin, '11, from Carmel, Indiana, referring to General Motors' well known onboard car safety and vehicle security system.

In addition to providing two-way voice communication and occasional navigational or emergency assistance like OnStar, the Unified Communications System (UCS) unit devised by McLochlin and the NSWC team can, among other things, produce detailed time-in-motion information—including such factors as “idling time”—that could help transportation planners with more efficient school bus routes, potentially saving rural districts thousands of dollars in fuel costs.

But the unit's greatest promise, adds McLochlin, may be what it can do to give parents of school-age children greater peace of mind. The idea figures prominently in his sales pitch.

“Imagine you have a seventh-grade daughter, and it's the first day of school,” the budding entrepreneur says. “When do you send her off to the bus stop? When do you pick her up? Did the driver skip her stop that day? Did the driver know he or she was supposed to stop there? Did the child even get on the bus that day? Is she skipping school? What's going on?”

Learn more about the black box:  
[www.bsu.edu/entrepreneurship/blackbox](http://www.bsu.edu/entrepreneurship/blackbox).