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# NDWorks

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News for Notre Dame faculty and staff and their families

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## Getting to solutions, quickly

BY GAIL HINCHION MANCINI

*Editor's note: Further stories about Notre Dame's changing research profile are on pages 4-5.*

**B**rian M. Baker holds an official footnote in the annals of Notre Dame's efforts to expand its focus on research.

Baker, an associate professor of chemistry and biochemistry, is the University's first recipient of a grant from the Indiana Clinical and Translational Sciences Institute (ICTSI). The grant, which he shares with Indiana University School of Medicine biochemist Samy Meroueh, is itself a footnote in a shifting national and state research scene.

The grant is drawn from a \$25 million pool of funds allocated by the National Institutes of Health for "fast-lane" biomedical research projects, ones with the potential to go from an Indiana research laboratory to a hospital bedside as quickly as possible.

Baker's project builds on promising findings that some cells with strong immune functions can inhibit the growth of melanoma, and

that components of those cells can be transplanted into melanoma patients whose own immune systems cannot effectively fight cancer. Their research would take immune cells already proven to be effective combatants and engineer them to be even more forceful. "Our idea is to make well-working immune receptors work even better."

If all goes well, data from their initial experiments will help them earn major funding from NIH; the ICTSI grant provides seed money necessary to propose a larger-scale project. In the next iteration, the ND-IU partnership would expand to include Baker's collaborators at the National Cancer Institute, an NIH subsidiary where actual bedside experiments could help establish the idea's potential on living subjects.

Whether it's because he has carved a chapter of research history at Notre Dame, Baker frames his project from a historic perspective. He came to the University in part because he was inspired by the gathering momentum to take Notre Dame research to the next level. Fast-lane ideas like his are, he says, an example of translational research, "a

big buzz word in biomedicine."

Yet he is firmly rooted in a tradition that values the search for knowledge without immediate applications to real-world problems. In his research story, hard bench knowledge is integral to fast-lane projects. "We could not imagine translational research if we did not have years of basic research to back it up," say Baker.

ICTSI grants are available to researchers in areas such as the College of Engineering's biomechanics and biomaterials groups, the Eck Institute for Global Health, the Keck Center for Transgene Research and the new Mike and Josie Harper Cancer Research Institute to move their basic research into clinical settings.

Another observation Baker makes about his project is that it validates the University's commitment to strategic research investments, particularly those that support better research facilities for all. When Notre Dame faculty apply for large research grants, evaluators will ask, "is everything that person needs there? Is the environment strong enough for the research to succeed?"



Brian Baker's cancer research relies on traditional research, but also on a new state program to put potential cures on the fast track.

Matt Cashore

"For the University to continue to grow," Baker observes, "it needs to remain fully committed. Sufficient research space; top instrumentation; and, of course,

outstanding postdoctoral, graduate, and undergraduate researchers are all necessary for ideas to have their greatest impact."

## A successful exchange

BY MOLLIE ZUBEK  
AND GAIL HINCHION MANCINI

**M**arie Sanquer came from France this year to study French language and literature. For her effort, she found that the American education system truly can offer something about her native language that her native universities do not.

Sanquer, a master's degree student, is the first student to be part of an exchange program with the University of Rennes instituted by Julia Douthwaite, assistant provost for international studies and a faculty member of the French department.

In fall semester, Sanquer signed up for Douthwaite's class on "Revolution in Fiction." Douthwaite had decided to take her class in a fresh direction by assigning students to create a project that connects an aspect of the course they found particularly meaningful to their own experience of revolution.

"The goal in this project was to

allow students to engage creatively with historical material produced during or after the French Revolution," said Douthwaite, who credits anthropologist Dan Lende's work on blogs as her inspiration to try something different. "The students could create a poem, story, painting, collage, Internet site, film or an 'altered book.'"

The creative project, while educational, also served as a way to step away from the more challenging aspects of the course, such as it being taught entirely in French or writing a 10-12-page midterm paper in French. "The creative project leveled the playing field and empowered some students to show strengths that were invisible when we focused on oral/written proficiency alone," Douthwaite said.

Sanquer would have no problem in a class taught in French or writing in French. But she had not been exposed to the freedom of such creative expression. She chose to make a film, something for which she had great interest, but no experience.

To help students understand the concept, Douthwaite asked for help from Jean Dibble's associate professor of art and art history. Dibble's recent work embeds current and historic imagery as a way of challenging the viewer with the rich entanglement of the present and our remembered cultural past.

"The creative dimension allows each student to tap into his or her own way of engaging with material," said Douthwaite. "In fact, it demanded that they become personally invested in the material we learned about from reading books in a wholly different way."

Although not a filmmaker, Sanquer chose to make a film. "It's not a story. It's a movie showing me at Notre Dame trying to make a movie about the French Revolution. How to find a camera, how to find a set," Sanquer says. But the vision that inspired Sanquer was clear and

compelling.

"Revolution is personal and a question of identity. We have this little sparkle of revolt in us. What makes the revolution go on is if people feel this sparkle," she explains.

Glad to have had the chance to make a short film, Sanquer also was pleased to observe the creativity of her fellow students, whose works included

paintings, drawings and collages.

Sanquer's year here has served as a spark in general. She has returned to France and will defend her master's thesis at Rennes this summer. In fall, she will continue working on a Notre Dame master's while she prepares to apply to study for a doctorate, here in the United States.



Marie Sanquer, an exchange student from University of Rennes, will study at Notre Dame again next fall after a summer home in France.

Gail Hinchion Mancini

# Director named to Center for Research Computing

BY WILLIAM GILROY

Research computing, with a vocabulary featuring such terms as “geospatial information systems,” “interactive data language” and “gridsphere portal framework,” seems to represent the ultimate in specialized knowledge. However, the field is increasingly the broad platform that supports the multiple disciplines that are the hallmark of a world-class research university.

Notre Dame’s vision of becoming a pre-eminent research university depends, in part, on the creation of a research computing capability of national and international stature. That goal has moved closer to reality with the appointment of a new director for its Center for Research Computing (CRC). Jaroslaw (Jarek) Nabrzyski, formerly executive director of the Louisiana State University Center

for Computation and Technology, assumed that position May 1.

The center, which is housed on the first floor of the Information Technology Center, supports the research agenda of the University through high availability of managed computing assets and staff with expertise in the application of these resources to multidisciplinary research interests.

As director, Nabrzyski will lead the preparation, promotion and execution of a visionary roadmap for the growth, evolution and utilization of computational technologies in support of advancing research initiatives from all of Notre Dame’s colleges. He also will play a central role in shaping the University’s participation in the Northwest Indiana Computational Grid Initiative (NWICG), a federally supported, multimillion dollar effort to establish a world-class grid computing environment that involves Purdue University

(West Lafayette and Calumet campuses), Argonne National Laboratory and Notre Dame.

The NWICG will further research in many areas, including computational drug design, global environmental change and disaster mitigation and response.

The Center for Research Computing and its leadership helps shape the direction of research at Notre Dame and assists the University’s colleges in their understanding of how to shape their specific

research agendas. It provides a focal point for academic and industrial collaborative research on high performance computing at Notre Dame and serves the research community by helping researchers in a variety of disciplines to leverage high performance computing resources, tools and techniques.

The center’s areas of focus also include managing IT assets dedicated to the support of research, augmenting existing support models, promoting innovative approaches to solving research challenges with information technology, developing assistance programs and participating in efforts to strengthen the linkages between research activity and the teaching and learning environment at Notre Dame.

The CRC also will connect the Notre Dame campus network with StarLight Gigapop in Chicago with subsequent high-speed connections to other research networks like Intenet2’s Abilene backbone, the Department of Energy’s ESnet and other intercontinental optical networks.

Nabrzyski has a strong background in high-performance computing and significant research accomplishments that will serve him well in tackling these many challenges. As executive director of the Louisiana State University Center for Computation and Technology, he was responsible for overseeing its cyberinfrastructure research and development, HPC operations and support, economic development and research enablement.

Nabrzyski’s research interests have been focused on multi-objective project scheduling and resources management techniques for parallel and distributed computing. He has been working on tools and middleware technologies for computational grids and distributed systems. His primary goal is to develop tools and technologies enhancing cyber infrastructure and technologies.



Jaroslaw (Jarek) Nabrzyski joined the University May 1.

Matt Cashore

## Commencement update

BY GAIL HINCHION MANCINI

With President Barack Obama speaking at Commencement Sunday, May 17, many of the familiar patterns of the ceremony have been replaced with new protocols. And most of those changes require participants to arrive early at the Joyce Center.

Faculty who regularly attend Commencement will notice the greatest difference: To gain entry to the Joyce Center, you must have a faculty ticket, your University identification, and your academic regalia. Previous Commencements have not required the faculty to have a ticket, but demand for seats has resulted in lotteries in some colleges. College deans have notified the regular faculty members who have been allocated a ticket.

For the majority of faculty, participation begins with a procession from the north dome to the arena, where the ceremony takes place. Faculty and students all enter through Gate 3. The doors will open to the Joyce Center at 11:30 a.m. The student academic procession assembles in the north dome starting at 12:50 p.m.; the beginning of the procession leaves the north dome at 1:10 p.m.

All faculty, students, family and guests who attend the ceremony must pass through U.S. Secret Service security checkpoints where handbags will be checked. With so many thousands of participants needing to be checked, delays entering the Joyce Center can be anticipated. “So arriving early is advised,” says Harold Pace, University registrar.

It is a tradition that participating students pick up their diplomas before the procession and ceremony. Faculty from each department will be distributing diplomas in the north dome until

12:30 p.m. Again, to ensure there is time to clear the security checkpoint and to pick up diplomas, students are encouraged to arrive early.

Parents and guests traditionally have tickets, and each member of the audience will need one. All parents and guests may enter the Joyce, at Gate 10, beginning at 11 a.m. All are encouraged to leave plenty of time for security checks. Entering the Joyce early will prevent a bottleneck at security checkpoints.

One piece of advice members of the Commencement planning committee are offering: Since handbags are being checked, leave yours at home if you don’t need it. Cameras are welcome for faculty, students and guests.

### And for those not attending...

Those who are not attending the ceremony, but who would like to participate, have both on-campus and online options.

During Commencement, the University’s homepage, [nd.edu](http://nd.edu), will link viewers to a real-time stream of the Sunday ceremony. The event can be watched live from any computer on campus or off.

On campus, the University’s in-house cable television service will broadcast the event live. You may join others in watching the event on televisions in public areas such as LaFortune Student Center, the Eck Visitors Center and DeBartolo Hall (the classroom building, not the performing arts center).

Commencement Checklist  
J Bring ticket, ID  
J Arrive early

## Nobel Laureates



Three Nobel Laureates visited Notre Dame in April, two on one day. From left, Mario Capecchi, 2007 Nobel laureate in Physiology & Medicine, gave an academic lecture on modeling human cancer in the mouse. His public lecture, “The Making of a Scientist: An Unlikely Journey,” eluded to his World War II childhood, abandoned on the streets of Italy. 2003 Nobel Peace Prize winner Shiran Ebadi, center, spoke April 23, discussing “Human Rights in the Islamic World.” That evening, John C. Mather, 2006 Nobel Laureate in Physics, discussed the planned James Webb Space Telescope, a project planned for launch in 2013.

## From Old 2 Gold is May 23

As students prepare to leave campus for the summer, the University of Notre Dame is planning its fifth “From Old 2 Gold” year-end campus yard sale to benefit participating local charities.

The event will be held from 7 to 11 a.m. Saturday, May 23 in Notre Dame Stadium and will feature items left behind and donated by students, including electronics, clothing, computers, carpeting, furniture, appliances and sports equipment.

The sale is open to the public and admission is free between 9 and 11 a.m. A \$5 “early bird” admission will be charged for those over 12 years of age wishing to shop in the stadium between 7 and 9 a.m. There is no charge for children 12 and under. To alleviate “camping out” around the stadium, shoppers will be permitted to wait in line no earlier than 5 a.m.

This year’s goal is to again raise \$70,000. Last year, 38 local charities shared more than \$70,000 raised during the sale, which attracted some 5,700 shoppers. In addition,

more than 3,900 pounds of food were donated to the Food Bank of Northern Indiana, and an estimated 84 tons of items were diverted from area landfills. Since 2005, the sale has raised more than \$184,000 for local charities and diverted more than 300 tons from landfills.

Students will donate items in serviceable condition to be collected, organized, priced and sold. All net revenues, as well as any unsold items, will be donated to the participating charities.

The project is co-chaired this year by Frank Parker, associate director of warehouse and delivery, and Jack Woolley, manager of surplus property. Additional information is available at [old2gold.nd.edu](http://old2gold.nd.edu).

Each year, numerous Notre Dame departments offer support and resources for the program. This year’s sponsors include Notre Dame Federal Credit Union, Martin’s Supermarkets, Graphie-Tees, Waste Management, Midwest Waste Solutions and Catering by Design.

# How 'tweet' it is to teach at ND



BY JULIE FLORY

If you want to talk to this generation of young people, you've got to speak their language. That's why Carol Phillips, a marketing instructor in the undergraduate and MBA programs in the Mendoza College of Business, blogs, tweets and texts like a 20-something.

"The millennials are a passion of mine," says Phillips, referring to the term that has replaced "Generation Y" to describe the offspring of Baby Boomers. "This generation is so different. They're very civic-minded. Their values are not like ours; they are very team-oriented, social and cause-oriented. They are about making a difference and giving back. It is so admirable."

They also, of course, are quite tech-savvy, which is why Phillips stays almost constantly plugged in to social media via her own blog, Twitter (@Carol\_Phillips for those who tweet), Facebook and other new media as an avenue to reach the younger set.

How she came to teach millennials at Notre Dame was "a total accident," says Phillips, who has also kept her "day job" as president and owner of the Michigan-based brand strategy consulting firm Brand Amplitude, LLC. Her teaching career was launched in 2003 after she was asked by longtime Mendoza faculty member Jack Kennedy to serve as a judge for a project in one of his courses. The two

struck up a friendship and Kennedy suggested that she and Notre Dame might benefit from having her on the faculty.

"It's a lot harder than it looks," Phillips says of her work in the classroom, admitting that in the beginning she, the teacher, had a lot to learn. "I thought we were going to interact the way we interact in business."

Not so, especially, as she first found out, when it comes to the dress code.

"I learned very quickly that it's different. I was going to require business attire," she laughs. "That went by the wayside in the first class."

Phillips teaches two courses, an introduction to marketing for sophomores, and brand strategy for MBA students. She enjoys both, but for different reasons.

"With the MBAs, most of them have some work experience, so they give back to me in the sense of ideas and an exchange," she says of the graduate students. "With the sophomores, it's more the reward

of watching them get it. Most of them aren't going to be finance or accounting majors, but every semester a couple of them go, 'Wow, I had no idea; I thought marketing was just advertising,' and that's exciting."

For Phillips, teaching has very much been a two-way street. Her students benefit from her expertise as a businesswoman, as well as her connections. She's brought in such classroom speakers as the chief operating officers of Blockbuster and Orbitz, as well as higher-ups from such success stories as Facebook, thanks to her outside working relationships. In return, she has access to her own focus groups in the form of these Notre Dame millennials.

"I gain a line of sight into young people," she explains, "which is very beneficial in my work."

Acknowledging that Notre Dame students are somewhat uniquely talented and ambitious among young people, what she's learned here in the classroom gives her cause for optimism about this generation.

"I think it's going to just be fascinating to watch them," she says. "And I wouldn't have known any of this without teaching. It's a privilege to be here."

In the classroom, Carol Phillips draws from her experiences as president and owner of Brand Amplitude, LLC.

Photo provided

## He brings knowledge of a lifetime to journalism classes

BY MICHAEL O. GARVEY

You might expect a veteran opinion journalist to be, well, opinionated, or at least temperamentally argumentative, but in Jack Colwell's case, you'd be disappointed. The owlish set of his bespectacled features breaks easily and often into a broad smile, and his quiet half of even a serious conversation is frequently roiled with a belly laugh. He would be equally at home in the bustle of a newspaper city room and in the somber hush of an academic lecture hall.

Which is a good thing, or at least has been a good thing since the fall semester of the 2000 academic year, when Colwell began teaching courses in journalism at Notre Dame. The adjunct associate professor of American studies is also the political analyst familiar to readers of the South Bend Tribune and viewers of local public affairs television programs. He teaches two courses, "Persuasion Commentary and Criticism" and "Advanced Reporting" to students of a journalistic bent.

It turns out to be a fairly elite group, Colwell reports. "They have to apply for it," he says. "And I try to be sure they all have more than a mere curiosity about journalism."

He certainly does.

"Jack Colwell brings the knowledge of a lifetime in journalism into the classroom, and students become the beneficiaries

of that knowledge and experience," says Robert Schmuhl, Annenberg-Joyce Professor of American Studies and Journalism. "As with other adjunct faculty, Jack is able to explain potential approaches and techniques that will become significant in internships and future careers. He's been there himself—and he's able to help students find their own way in journalism."

During his college years Colwell worked as city editor of the University of Illinois' student newspaper, The Daily Illini, and during his subsequent two-year Army stint he was editor of the 5th Army Headquarters newspaper in Chicago. For 38 years, before retiring in 2003 from his full-time position at the South Bend Tribune, Colwell worked as a police

and general assignment reporter before becoming the paper's political writer, in which capacity he has covered countless sessions of the Indiana legislature, 19 national political conventions, and political campaigns ranging from city council races to presidential elections. He even reported briefly from the DMZ during the war in Vietnam.

These days, Colwell works at a deservedly more leisured pace. He continues to write the occasional column in the South Bend Tribune, to appear on the occasional public television program, and to meet with and mentor his students.

Classroom assignments, as in the real world of political writing, are generated by the news and issues of the day. "I have them read and critique each other's opinion pieces as I sort of look over their shoulders and comment from time to time," he says. "And I occasionally remind them that even their strongest opinions should be expressed with their readers in mind." His eyes twinkle behind the spectacles as he adds, "If they want their opinions to be read, that is."

His own careful expressions of political opinion have enabled Colwell to hold the attention of Michiana newspaper readers for some four decades now. A conversation over a cup of coffee with him leaves the distinct and agreeable impression that he could hold the attention of his students for a fair amount of time as well.



Familiar to members of the Michiana community, journalist Jack Colwell passes his wisdom to next-generation journalists through courses such as "Persuasion Commentary and Criticism" and "Advanced Reporting." Courtesy, South Bend Tribune

## Summer construction roundup

ND WORKS STAFF WRITER

Construction and renovations are an active part of the summer scene on campus, but there is no such thing as a typical year, says Doug Marsh, University architect.

Last summer saw a great deal of temporary fencing erected as part of underground utility projects. This summer's work is likely to be far less eye-catching.

One project already underway, a vestibule addition at the west entry of Galvin Hall, has rerouted faculty and students to other entries. The new glass entryway project will also correct a drainage problem.

Other projects planned involve academic and administrative building roof projects. Hesser Laboratory for Aerospace Research, the Hesburgh Center for International Peace Studies and the Mendoza College of Business will have part or all of the roofs replaced. Slate and flashing repairs and patching are planned for the roofs of Coleman-Morse Center,

Flanner, Grace, O'Shaughnessy, Riley and Washington Halls, the Knights of Columbus building, Mason Service Center, North Dining Hall, the Snite Museum of Art and Stepan Chemistry.

Masonry or sealant work is planned at Rockne Memorial, the Hammes Notre Dame Bookstore, Eck Visitors' Center, and several residence halls on the north and west quads.

Other projects at academic or administrative buildings include exterior window painting at Bond Hall, elevator updates at the Power Plant and Snite Museum of Art and courtyard drainage work at the Snite.

Moving days have been scheduled for Geddes Hall, the new headquarters for the Center for Social Concerns and the Institute for Church Life, in late July, and the new women's residence hall, Ryan Hall, in early August.

Construction has begun on Harper Hall, an expansion of the collaborative Indiana University School of Medicine-South Bend (IUSM-SB) and Notre Dame medical school and research facility that lies south of campus.



A new entryway for Galvin Hall will give the life sciences building a fresh look and eliminate a problem with drainage.

*A year after the first Strategic Research Investments (SRI) projects were announced, each project has taken important first steps.*

## Five projects, five paths of momentum

BY GAIL HINCHION MANCINI

Everyone agrees: The **Integrated Imaging Facility** is all about the cool new toys.

As irreverent as it may be to refer to expensive equipment as “toys,” you should meet the people who use them. They’re as excited as kids who just found a Wii under the Christmas tree.

In the basement of Galvin Life Sciences Center, Matt Leevy manages the operation of two new *in vivo* imaging stations that capture images of small animals. The data are so precise, the technology Leevy manages provides images of the veins inside of the heart of a mouse that weighs only 20 grams.

To name a few features, the *in vivo* equipment captures views of deep tissue, information at the molecular level, and tumor images so bright and colorful it looks like the mouse has swallowed a galaxy. All this can be derived from the small animal without any invasive techniques.

A single mouse with a health problem like a tumor can be imaged every day, providing volumes of

information about disease progression over time. “We perform non-invasive imaging,” says Leevy. “It vastly reduces the number of animals that need to be used in testing.”

Leevy’s resources represent one of three directions of the imaging facility. Project lead researcher Bradley Smith, Hofman Professor of Chemistry and Biochemistry, and colleagues also saw the potential for improved electron microscopy resources and for optical microscopy.

The optical resources are not completely in place, but this past year has seen the electron microscopy resource take shape under the direction of Alexander Mukasyan, a materials scientist and research professor who is as thrilled as Leevy with the potential of his new equipment.

Mukasyan oversees a new Field Emission Scanning Electron Microscope (FESEM). Notre Dame’s new FESEM provides the highest magnification possible of microscopic-sized subjects. He also oversees a new Focused Ion Beam (FIB), a scanning electron microscope that provides two types of images. It can provide three-dimensional images of a material, down to the nanoscale. Using an ion beam, it cuts cross-sections of the material to provide an internal view.

“It means you will cut the surface by ion beam, make an analysis. Make another slice, make an analysis. Then you have thousands of two-dimensional pictures of the elemental distribution,” he says.

Mukasyan’s instrumentation is temporarily housed, and functioning, in Cushing Hall. But when the new engineering building opens, a specially designed space will have been set aside for these two types of instrumentation and a third, a transmission electron microscope (TEM). The TEM will provide images at the atomic level “and even something smaller than that.” Although the TEM is not yet available, the slicing feature

of the FIB is allowing the University’s researchers to prepare nano samples.

Besides serving on-campus researchers, and establishing opportunities for cross-divisional exchanges and collaborations, the imaging facility can become a resource for other universities or commercial ventures.

“This will be a unique bundle. I don’t think anyone in the U.S. has this kind of bundle with this resolution and these properties,” says Mukasyan.

This is food for thought for Leevy, who had a postdoctoral appointment at Notre Dame, then worked for a while for one of the companies that makes *in vivo* imaging equipment. He has returned to a much more dynamic research environment, he says. “We have an amazing amount of momentum in developing our intellectual, research and physical infrastructure.”

The Integrated Imaging Facility, which will hire managers like Leevy as well as technicians, expects to attract customers from across campus as well as those from outside the campus.

### Up, running and taking all comers

Mosquitos. Malaria. Members of the University community who remember the earliest days of research in global health recall that it was about mosquitoes, vector analysis and curing such infectious tropical diseases as malaria.

This SRI project has broader aspirations, as indicated by the project title: **Genomics, Disease Ecology and Global Health**. Project leaders aspire to reposition this longstanding focus to engage faculty from the various University colleges and the Indiana

University School of Medicine-South Bend in the search for answers.

In support of those aspirations, the project proposed to establish onsite genomic and bioinformatic research capabilities that serve the global health initiative, but also support the work of researchers across campus. Toward that end, and only a year later, instrumentation has been purchased and installed and specialists hired to manage research requests.

“We’re up and running, and taking all comers,” says Michael Ferdig, associate professor of biological sciences, who directs the work of genomics core. In this two-core enterprise, Ferdig oversees the data-gathering side in the basement of Galvin. Over in Cushing Hall, Scott Emrich, assistant professor of computer science and engineering, oversees the bioinformatics side of the process.

“One of the main lines of attack on global health problems are these new tools of genomics,” says Ferdig. “But it’s really important to note that the core facility aspect of the project is really for campus-wide development of capability and capacity. We are developing protocols valuable to all phases for anyone doing biologic research.

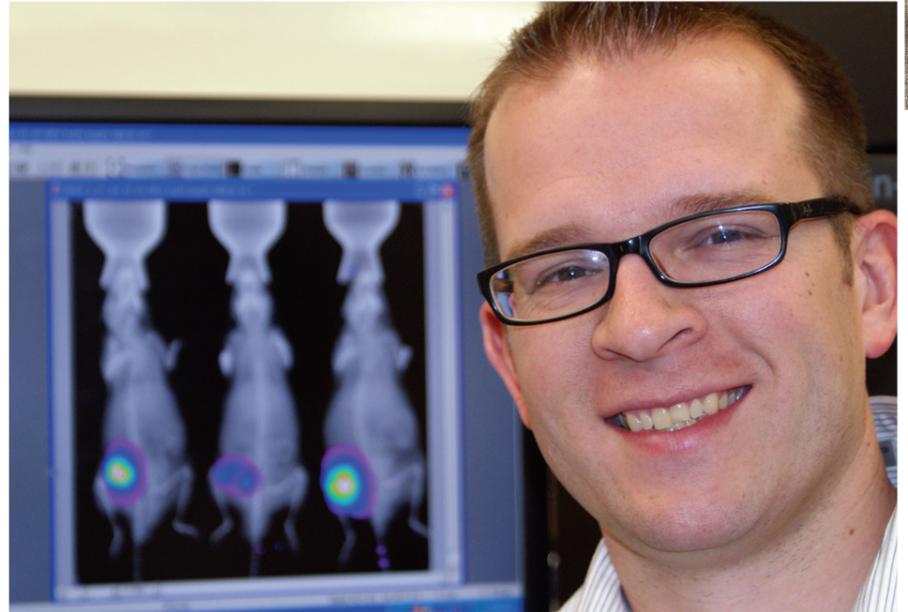
The bioinformatics job list alone illustrates the breadth of projects. For

example, Emrich says he is working with computer science colleague Doug Thain on an analysis of unused computer power in the College of Engineering and elsewhere. “We have helped analyze sandfly DNA sequences for (biologist) Mary Ann McDowell in the context of global health and are doing analysis of butterflies for (biologist) Jessica Hellman in the context of climate change.”

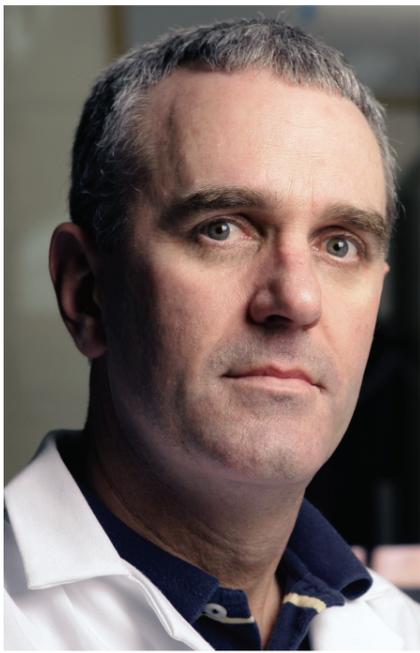
These kinds of research facilities strengthen the University’s ability to take on projects “we weren’t equipped to take on before,” says Ferdig. “Before, we were essentially farming out our work. You had to find collaborators, to make arrangements to make work done elsewhere... It was slowing our ability to go out and make big grants.”

### Shaping a place for thought

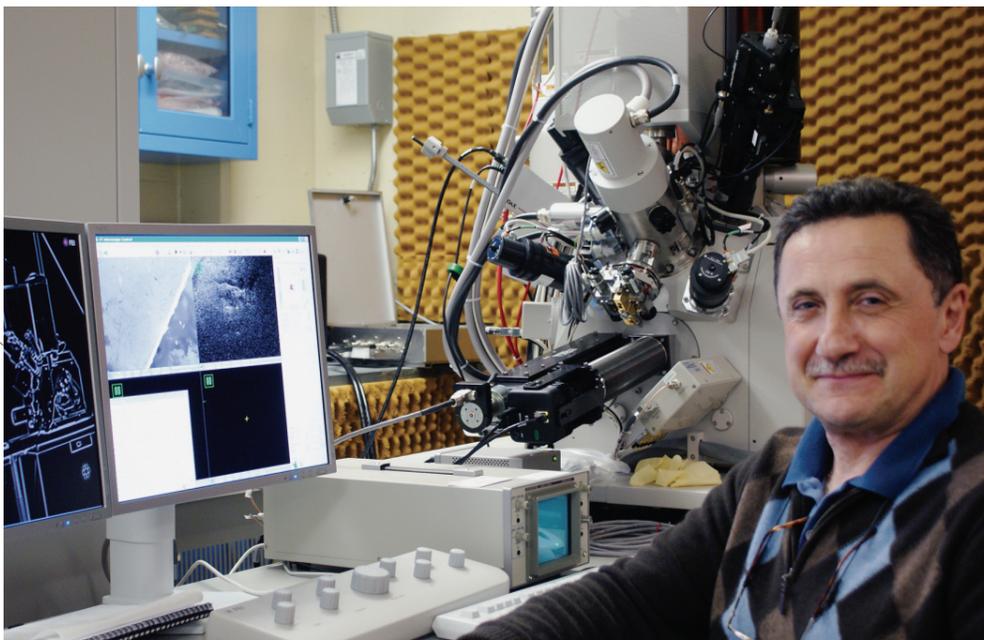
The aspiration of the **Institute for Advanced Study** is that Notre Dame host great minds who wish for time and a welcoming environment to develop new areas of thinking and research that encompass the University’s commitment to moral, ethical and spiritual dimensions of knowledge.



The cutting-edge *in vivo* imaging equipment that Matt Leevy manages is attracting off-campus research customers. The same is true for other SRI research resources.



Bradley Smith is lead researcher on the Integrated Imaging Facility project.



Alexander Mukasyan expects his own research to benefit greatly from new electron microscopy resources.



Michael Ferdig and Scott Emrich (not pictured) have established advanced genomic and bioinformatic research capabilities that advance the work of researchers outside the traditional focus on global health.

Vittorio Höslle recently... the unique focus of f



## Advancing portable health for all

The vision of the **Advanced Diagnostic and Therapeutics** project is drawn from the dreams and interests of a myriad of accomplished faculty from electrical, chemical and biomolecular and aerospace and mechanical engineering, computer science and engineering, biological sciences and chemistry and biochemistry.

In the past year, this consortium, led by Paul Bohn, has pulled together eight distinct research platforms that leverage their research expertise to realize changes in the way human and environmental challenges are diagnosed and treated.

"AD&T is motivated by the inexorable drive to provide individuals in the developed world with specific and personalized information regarding their own health and the nature of their immediate surroundings, and by the related imperative to provide the fruits of this technology to the poorest people and societies, thereby raising the levels of health and safety broadly," says Bohn.

First, medical diagnosis and treatment are becoming miniaturized. It is happening at the cellular level, where breakthroughs involve understanding the interactions with diseased cells, among diseased cells or the signs given out by soon-to-be diseased cells. Collaborative efforts between these scientists and engineers will identify the patterns of these interactions, paving the way for microscopic diagnostics and cures.

These small-scale diagnostic solutions translate easily to environmental challenges and solutions. One research platform envisions a portable diagnostic platform that employs genomics and bioinformatics to root out causative agents of "significant societal challenges" such as aquatic invasive species, malevolent challenges to food and water safety and diseases such as malaria.

Research team members also have set specific plans related to breast and cervical cancer and osteoporosis. Their members envision a cervical cancer diagnostic microchip that would rapidly detect characteristics of ovarian cancer without the need for surgical intervention and the deployment of nanoscale therapeutic vehicles to deliver the right drug to just the right spot where it is needed. A team of aerospace and mechanical engineers is collaborating with biochemical engineers toward a cartilage tissue replacement that would ease the pain and deterioration associated with osteoarthritis without the use of potent drugs or invasive joint replacement surgery.

As lead investigator, Bohn, Schmitt Professor of Chemical and Biomolecular Engineering and professor of chemistry, is one of several recognizable faculty names on these teams. He researches molecular approaches to nanotechnology, capable of producing unprecedented form and function at the nanoscale. He recently translated these research passions to the human scale as coauthor of a notable Nature paper establishing an aggressive research agenda to address problems central to providing clean water in adequate quantities across the world's diverse populations.



Photos by Matt Cashore

Wolfgang Porod oversees the Center for Nano Science and Technology, a project with many directions and a determination to ignite interest in nano science among young scientists and local teachers.

## NURF's arrive this summer

The impact of SRI funding for nanoscience technology research will be apparent this summer with the arrival of a new breed of scientist: the budding type.

As many as 10 undergraduates will be welcome to the **Center for Nano Science and Technology** through Nano Undergraduate Research Fellowships (NURF) for projects that

address four distinct areas:

- new materials and nanostructures
- energy harvesting technologies
- nano-bio electronics
- physical limits to computation

Those are the areas that this consortium of nano science and technology researchers are focusing on as SRI participants.

These students will be ND undergrads, says Wolfgang Porod, lead faculty member on the project. He also plans to invite Ivy Tech students and teachers whose on-campus presence will be funded through a summer National Science Foundation program.

"These students will be exposed to hands-on research, and be able to deepen their knowledge and understanding by seeing how what they learn in class is being applied," says Porod, Freimann Professor of Electrical Engineering. "These undergrad researchers will help us to explore new ideas, and help do the groundwork that might lead to new

research avenues and proposals down the line."

The University has well-known and ongoing research projects such as MIND, the Midwest Institute for Nanoelectronics Discovery, a project to identify a new nanoscale building block for a next-generation, faster computer.

The specific areas of focus identified by the SRI project highlight other everyday challenges for which there may be nano-solutions. Participating faculty are from a broad ranging group including electrical engineering, computer science and engineering, chemistry and biochemistry, physics, and chemical and biomolecular engineering.

Their research explores ways to harvest and convert wasted energy as heat and light, thus impacting energy efficiency, power density and cost. New materials and nanostructures being explored represent opportunities to create new solar cell designs of unprecedented efficiency and new paradigms for information storage and processing.

Another potential idea: Research in new materials and nanostructures will explore a semiconductor "wonder" material that can be useful for solar cells, deep-UV light sources for bio-imaging, water treatment and purification and ultrafast high-voltage switching for hybrid electric vehicles.

Gail Hinchion Mancini

Vittorio Höfle is the first director of the institute, and his appointment speaks to the interdisciplinary nature of ideas that this institute would foster. The polylingual Höfle's title of professor of arts and letters simplifies his affiliation with the departments of German and Russian languages and literatures, philosophy and political science and research, and writing ranging from Greek literature to the films of Woody Allen.

Working with an advisory board, the fledgling institute has established the date and topic of its first major conference, on the subject of beauty, next Jan. 21-23.

"Beauty is an elusive concept, the understanding of which presupposes a cooperation of both sciences and humanities," explains Höfle. "The tradition saw beauty as one of the manifestations of the divine in the world, so it is well connected with the spiritual quest at ND."

To help Notre Dame determine the "distinctive identity of the new institute," Höfle assembled an international panel of advisors, who met on campus last April 17. The provenance and reputation of each spoke volumes about the institute's ambition to explore the intersections of knowledge and religion. Participants were:

Bishop Marcelo Sanchez Sorondo, chancellor of the Pontifical Academy for Science, Social Science and Life; Nicholas Boyle, president of Magdalen College, University of Cambridge, whose 2002-03 lectures on campus explored a Catholic approach to literature; Historian Aron Rodrigue, a scholar of modern Jewish history and director of the Stanford Humanities Center; Historian Francis C. Oakley, medieval and early modern intellectual and religious history and president emeritus of Williams College and of the American Council of Learned Societies, and Lorraine Daston, an American historian of science, presently the executive director of the Max Planck Institute for the History of Sciences in Berlin.



Höfle hosted a panel of distinguished international scholars to help establish the Institute for Advanced Study.

## Administering transition, with patience

BY GAIL HINCHION MANCINI

Eighteen months into his tenure as vice president for research, Bob Bernhard reflects about how much the research process has changed during his career, and how relevant the notion of "differentiated excellence" has become.

Change and transition are part and parcel of Bernhard's assignment. He is the first officer whose appointment to oversee research is exclusive to that task; previous research vice presidents also oversaw graduate studies. His work nurturing an expanding research profile is partly defined, and enhanced, by a strategic research investment program known as SAPC in which University dollars support research initiatives.

President Rev. John I. Jenkins, C.S.C., and Provost Tom Burish, as well as the Board of Trustees, have articulated a future in which research pre-eminence becomes part of Notre Dame's already clear reputation as a great Catholic university with unwavering commitment to undergraduate teaching.

Describing what that transition will look like, Bernhard draws on his past.

"When I joined the academy in the 1980s, every message I received was that I had to prove I could succeed independently," says Bernhard, who came to Notre Dame from Purdue University, where he was a member of the research administration and the aerospace and mechanical engineering faculty.

"I was expected to develop my own lab; I had to show that I could run a research program, that I could mentor graduate students, and

that I could do important discovery by myself," he recalls.

"I also taught a reasonably heavy load," says Bernhard, who attributes his success as a teacher to the generous guidance of "truly great and passionate teachers."

It was a jack-of-all trades model, but one that understandably is changing as the scope of research challenges demand interdisciplinary solutions.

"We are now seeing many examples of the expectation that we will build collaboration across disciplines to do what neither investigator could do alone, or what a single researcher with significant breadth but insufficient depth could do," he says. "These collaborations will be able to address more interesting, more important, and more difficult questions as researchers work together in this interdependent way."

How, though, to retain the best of everything—a culture of excellence that values the best of administration, research, and inspired teaching?

"I describe this as an environment of differentiated excellence," Bernhard says.

"On a faculty, we need individuals who are great scholars, people who are great 'connectors' and 'information gatherers,' people who are great teachers, who are great administrators, and those who excel at service," he says. "I don't believe we achieve excellence by assuming that everybody contributes equally to everything."

Notre Dame's faculty is comprised of people "who are passionate about all of the dimensions that we need for collective excellence."



A jack-of-all-trades model will give way to an environment in which faculty are allowed to play to their strengths as Notre Dame's academic profile increasingly focuses on research, says Robert Bernhard, vice president for research.

Bernhard sees his role at the starting point of a long-term plan. "My tenure here will be the launch phase. Right now we are in the momentum-gathering phase of the launch." It's an active and exciting phase that involves initial investments in infrastructure, aggressive hiring of faculty, and "a consensus-building discussion with all stakeholders about where we want to go."

"Some faculty will choose to continue in the same successful mode they have used in the past. We will help, encourage and celebrate these efforts. Others may find the interdependent and collaborative scholarly activities to be intriguing and will choose to participate in some of the new initiatives that arise."

"This is not a zero-sum game where support of one program takes away from another program. Due to the efforts of Father Jenkins, Tom Burish and John Affleck-Graves, the resources available to support research and scholarship have grown. And I hope to grow these resources even more."

# A worldly party

The more than 20 employees who take on-campus classes in English as a Second Language (ESL) gathered to celebrate a semester of hard work. Students brought a wide variety of international foods. Members of the South Bend Community School Corp. who provide ESL training brought achievement certificates. The ESL program is part of the Learning at Work program initiated by the Office of Human Resources. The on-campus learning experiences grew from feedback on the 2006 ND Voice employee satisfaction survey.



Matt McCubbins

Earning certificates are, from left, Carmen Morales of the Morris Inn; Trang Hoang, building services, who is presented her certificate by instructor Becky Freehauf, and Hu Phan of building services.



Above, ESL colleagues take a class picture with a year-end congratulations cake.



Courtesy, Greg Long, SBSCS

Successful GED candidate Michelle Strode, second from left, is flanked by, from left, Beth Garacia of the South Bend Community School Corp.; Chris Hatfield, and Valerie RiChard, director of facilities operations.

## Measurable success

Michelle Strode of St. Michael's Laundry is the first student to earn her high school equivalency degree (GED) through the University's new Learning at Work program.

Strode has told her fellow students

she now hopes to enter the next level of the Learning at Work curriculum, an associate degree program offered in partnership with Ivy Tech.

Strode and other GED students celebrated the end of the semester with a reception attended both by students and their supervisors,

whose willingness to arrange student work schedules has been cited as a contributing factor to the program's success. A dozen students are in the program.



A reception for students of the on-campus high school equivalency (GED) program provided time for mingling. At top, building services colleagues Cathy Nickens and Mike Vignati chat. Above, from left, Maggie Hunyadi, Angela Knobloch and Alejandra Botello catch up on the news from Business Operations.

## ND Voice initiatives need employee feedback

ND WORKS STAFF WRITER

The University administration is seeking grassroots insights as it prepares new initiatives to support employee satisfaction.

While the results of the 2008 ND Voice provided many insights into the needs of our employees, additional input from employees will help identify specific areas that need to be addressed.

Before considering initiatives to address those areas, John Affleck-Graves, executive vice president, wants to solicit ideas from frontline staff.

Volunteers are being sought to participate in a series of focus groups to take place in late May. The discussions will include

members of both the exempt and non-exempt staffs. Affleck-Graves will observe while a facilitator leads the conversation.

"We hope that feedback from employees on the ground will help us identify common approaches to improve in several areas," Affleck-Graves says.

Those interested in joining a focus group should contact askHR at 631-5900 or send an e-mail to [askhr@nd.edu](mailto:askhr@nd.edu). Please include your name, the telephone number and e-mail where you can be contacted, and your department.

Participants will be selected randomly. Ten sessions with 15 participants are planned. Participants will be grouped with volunteers whose jobs and job levels are similar to their own.



## DISTINCTIONS

The University congratulates employees who are celebrating significant anniversaries in May, including Kevin J. Hirl of the Joyce Center. Also observing anniversaries are:

### 30 years

Christopher R. Blazi, power plant and utilities

Marc D. Cozzi, radiation laboratory

### 25 years

Rosemary S. Michalski, development-information services

Rosemary J. Patti, chemistry and biochemistry

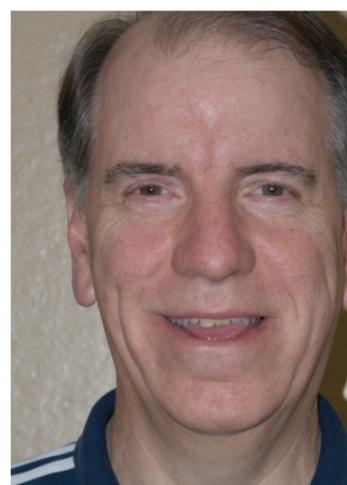
### 20 years

Barbara E. Anderson, Morris Inn

Patricia A. Kipker, sociology

Marvin J. Pruett, locksmith

Dale A. Shorter, custodial services



Hirl

Wendy A. Wolfe, Arts and Letters Honors Program

### 15 years

Sureeni Ekanayake, investment office

Donna M. Fecher, aerospace and mechanical engineering

Terron J. Phillips, landscape services

### 10 years

Kimberly M. Candler, Huddle

Bruce A. Carter and Randall L. Yoho, Arts and Letters technology support

Larry J. Corkins, Chung T. Dang, Darla R. Hansen and Peggy M. Lant, custodial services

Renee S. Glover, accounting and financial services

Linda L. Heyde, North Dining Hall

Daniel J. Karmgard, physics

Rachel S. Moreno, Alliance for Catholic Education

Judith A. Odusch, Robinson center

Adam M. Tirota, transportation services

Heidi M. Uebelhor, athletics business office

Benny R. Williams, Moreau Seminary

Ravanea Zavor, Office of Graduate Studies

Mark B. Zmyslo, golf course operations

# Business students give shape to wellness ideas

BY GAIL HINCHION MANCINI

The old saying “out of the mouths of babes” comes to mind when considering a half-dozen recent student projects that focused on faculty and staff health needs. Students in a project management course in the Mendoza College of Business arrived at some clever results when asked to consider how to bring to reality several recommendations reviewed by the University’s Wellness Committee.

Imagine working out at Rockne Memorial, and stopping to use the kind of blood pressure machine one finds in supermarkets and other public

places. Maybe while you’re catching up on your reading, you’d like to do it on a treadmill.

Members of Assistant Professor Corey Angst’s class researched a dream of Dave Prentkowski, director of food services, that the University build a teaching kitchen where faculty, staff and students could learn about healthy cooking. The students measured the possible interest in such a service—it is quite high. They examined potential kitchen designs, and provided cost estimates down to the pots and pans (total estimate for the teaching kitchen was \$2 million.)

Ideas that promote nutrition, and hence address faculty and staff concerns about obesity and weight

loss, were thoroughly reviewed. One team met with farmers and familiarized themselves with the local farmer’s market in order to propose an on-campus market of vegetables, flowers and crafts. Their vision saw booths set up on the field near the bookstore two afternoons a week.

A project on family friendly recreational programming revealed that other universities have introduced incentive program on walking and regular monthly on-campus family events. A team tasked with proposing a service to match potential student babysitters with parents looking for a night off outlined a low maintenance electronic matching service.

Some members of that all-male team were themselves former babysitters. Team members conceded that some families may still prefer



An all-male student business class team presents a plan for an Internet tool to match student babysitters with faculty and staff. A database of potential sitters would give parents choices among men, women, and even students with cars who can get to jobs on their own.

female babysitters, so they proposed a babysitter application process that includes a picture. The application would also include information on

whether the student has a car, for families who would value a sitter who can make his or her way back and forth to the house.

## FYI

### ART

**Exhibit: Italian Drawings Seminar**  
Through Sunday, May 24, Scholz Family Works on Paper Gallery, Snite Museum of Art

Presenting 16th and 17th century drawings by Italian masters that have been studied and investigated by students at Notre Dame.

### 2009 Congressional Art Competition Exhibit

May 13 through 22, Crossroads Gallery, Notre Dame Downtown, 217 S. Michigan St., South Bend.

The exhibit is composed of works by competing area high school artists.

### PERFORMANCE

Unless otherwise noted, all events take place in the Marie P. DeBartolo Center for the Performing Arts. For more information or to purchase tickets, visit [performingarts.nd.edu](http://performingarts.nd.edu) or call 631-2800. Ticket prices are for faculty and staff, senior citizens and students.

### 36th Annual Fiscoff National Chamber Music Competition

Several events of the world’s largest chamber music competition are free: Locations of performances are at [fiscoff.org](http://fiscoff.org).

#### • Midday Concerts

11:30 a.m. and 12:30 p.m. Friday, May 8, Main Building, Rotunda

#### • Competition rounds

Friday, May 8  
Winds: 9 to 11:30 a.m.  
Juniors: 9:20 a.m. to 7 p.m.  
Strings: 11:50 a.m. to 2:20 p.m.  
Winds: 2:40 to 5:10 p.m.  
Strings: 5:30 to 8 p.m.

Saturday, May 9

Winds: 8:30 to 11 a.m.  
Strings: 11:14 a.m. to 1:40 p.m.  
Juniors: 2:20 to 6:35 p.m.

Sunday, May 10

Senior Finals: 11 a.m. to 1:40 p.m.  
Junior Finals: 2 to 3 p.m.

#### • Grand Prize Play-off Concert

3:30 p.m. Sunday, May 10, Leighton Concert Hall  
Public reception following the concert.  
\$8/\$8/\$5

### Commencement weekend music performances

#### • Notre Dame Band

#### Commencement Concert

5:30 p.m. Friday, May 15, Leighton Concert Hall  
Free but ticketed

#### • Department of Music Commencement Concert

8 p.m. Friday, May 15,

Leighton Concert Hall

The Department of Music seniors perform various vocal, piano and string pieces; featuring the Notre Dame Chorale. Free but ticketed

#### • Notre Dame Glee Club

9 p.m. Saturday, May 16, Leighton Concert Hall  
Program includes sacred and secular classical choral music, folk songs, spirituals and Notre Dame school songs.  
\$8/\$6/\$3

### Southold Dance presents Swan Lake

7 p.m. Friday, May 29 and Saturday, May 30; 2 p.m. Saturday, May 30 and Sunday, May 31, Decio Mainstage Theatre

Performed by Southold Dance Theater  
\$17, adults; \$15, students

### FILM

#### Metropolitan Opera Live in HD: “La Cenerentola”

12:30 p.m. Saturday, May 9  
Hot on the heels of her triumphant Met debut as Rosina in last season’s Il Barbiere di Siviglia, Elina Garanča portrays another Rossini charmer in this bel canto Cinderella story. Tickets \$22, and \$15 all students

#### Gomorra (2008)

6:30 and 9:30 p.m. Friday, May 22 and Saturday, May 23  
Power, money and blood: these are the values that the residents of the province of Naples and Caserta confront every day. They have practically no choice, and are forced to obey the rules of the “System,” the Camorra.  
\$5/\$4/\$3

#### Hunger (2008)

6:30 and 9:30 p.m. Friday, May 29 and Saturday, May 30  
Steve McQueen’s harrowing account depicts the last months of the life of IRA prisoner Bobby Sands (Michael Fassbender), who starved himself to death in the Maze prison, near Belfast, in 1981, as a protest to gain political recognition.  
\$5/\$4/\$3

### REGISTRATION/ RECREATION

#### Online Registration Begins: Summer Swim Lessons

7:30 a.m., Monday, May 11  
Classes are open to all ND students, faculty, staff, retirees and their spouses.

#### Tennis Round Robin Play

5:15 to 6:30 p.m., Tuesdays, May 12–June



Southold's Swan Lake

Courtesy, Southold Dance Theater

New sailors will learn skills to be used on the water all summer long. Registration is ongoing.  
\$50

#### Summer 2009 Fitness Classes

Registration begins at 7:30 a.m., Thursday, May 21  
RecRegister online registration accepts Visa and Mastercard. Cash and checks are accepted at the Rolfs SportsRec Center (RSRC) Front Desk ONLY. Class schedules are available at [recsports.nd.edu](http://recsports.nd.edu). Also visit the RecSports Web site for the RecRegister, the online registration tool.

### CELEBRATIONS AND GATHERINGS

#### Seminar: “Creating A Community Against Crime: Spring Home Security”

6 to 7 p.m. Tuesday, May 12, Notre Dame Downtown, 217 S. Michigan St., South Bend.

Learn timely tips for keeping your household safe this time of year; also some simple projects to make your home more secure (doors, locks, windows, landscaping, lighting and more).

Presented by Corporal Patrick Hechlin, Crime Prevention Specialist, SBPD and Officer Keri Kei Shibata, Notre Dame. Part of the Notre Dame Community Exchange Program; sponsored by Community Relations

16, Eck Tennis Center  
Intermediate tennis players will receive 30 minutes of skill instruction followed by singles or doubles round robin play with strategy discussion.  
\$45

\*\*Please bring your own racquet. All participants are required to wear non-marking tennis shoes. Running shoes are not permitted on the courts. Registration begins May 7 at 7:30 a.m. via RecRegister @ [recsports.nd.edu](http://recsports.nd.edu)

#### Sailing Lessons

5–6 p.m. Mondays–Fridays, May 18–30, St. Joseph’s Lake Beach

## ARCHIVES



These minims are just one century and one quad off from the first annual ND Bike Fest, which took place April 24 (see page 8). The photo was taken in the 1880s.

Courtesy Elizabeth Hogan, University Archives

# One fine day

There haven't been that many nice days this spring. But three events lucked out with brilliant weather on Friday, April 24. The first-ever ND Bike Fest gave faculty, staff and their families a chance to get their bikes tuned up, learn about safety and learn about the latest biking gear. They shared the South Quad with Festival on the Quad, part of the Violence Prevention Initiative sponsored by the Gender Relations Center. On the other end of campus, the all-night Relay for Life event experienced clear skies throughout the popular 15-hour celebration for cancer survivors.



Payton Lewandowski laps up ice cream and attention from the mascot of the South Bend Silver Hawks during Relay for Life festivities.



Bike repairs and registration were among the most popular features of the first-ever ND Bike Fest. At right, Notre Dame Security Police Officer Tom Virgil registers a bike as Mark Benishek looks on. Sarah Ryckman gives two thumbs up to the mechanics, who kept up a steady stream of repairs under a tent.



The festival featured Project Clothesline, which displays T-shirts designed by victims of sexual assault or rape.



Former NFL player Don McPherson, keynote speaker for the anti-violence-themed Festival on the Quad, poses with the event organizers. He is a national leader and advocate for the prevention of sexual and domestic violence. From left are students Devin Preston, Laura Lauck, Patrick Tighe; Elizabeth Moriarty of the Gender Relations Center; student Tim Latham; McPherson; students Lisa Floran and Miriam Olsen, and Gender Relations staff Heather Rakoczy and Leanne Schneider.