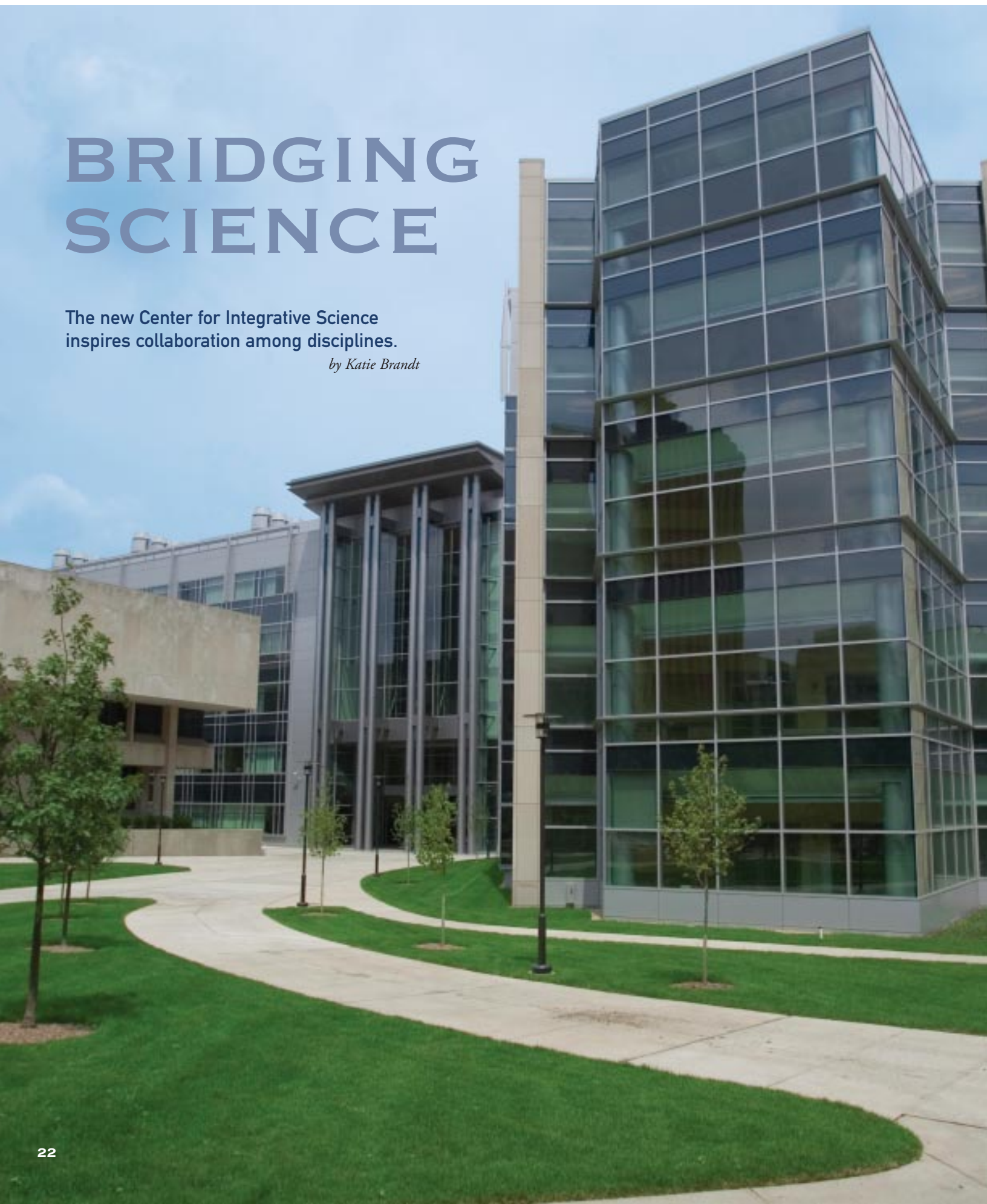


# BRIDGING SCIENCE

The new Center for Integrative Science  
inspires collaboration among disciplines.

*by Katie Brandt*



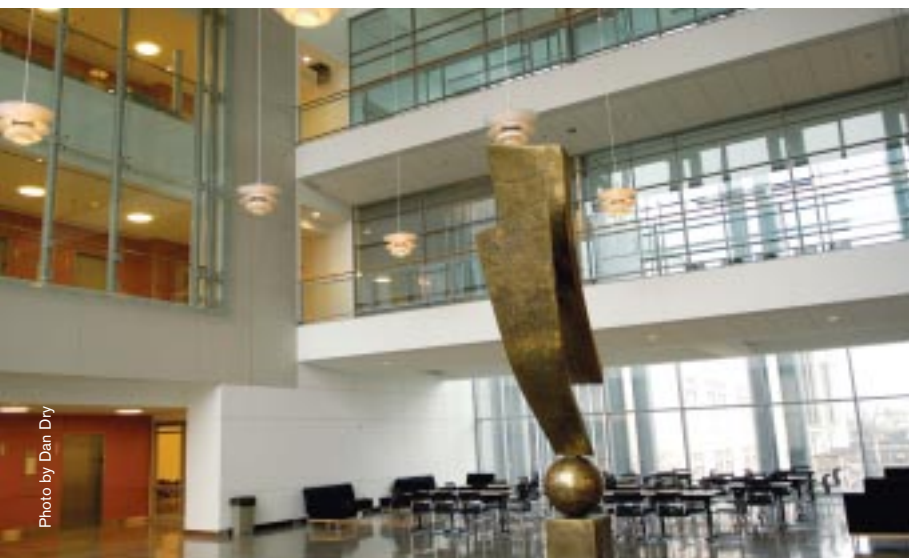


Photo by Dan Dry



Photo by Jason Smith

The glassed-in bridge joining the biological and physical science wings of the University of Chicago's new Center for Integrative Science is symbolic of the center's very purpose: to link faculty and students from different disciplines in new, innovative collaborations.

"A generation or two ago, it was easier for one group of four or five scientists to solve a problem. Now, problems are more complex, and it takes complex groups to solve them," said Milan Mrksich, PhD, professor of chemistry at Chicago and investigator for Howard Hughes Medical Institute.

Mrksich leads a pioneering research group that combines chemistry and biology to study how cells migrate and attach themselves to various sites. The biological side of his lab studies the cells themselves, while the chemistry side creates materials that mimic places in the body to which the cells affix.

"Forty years ago, nobody thought chemistry would be working on cell migration," he said.

Such diversified groups are the reason the university created the new building: to increase partnerships among scientists in different fields who will then pilot groundbreaking discoveries and research methods.

"Historically, it's been difficult to find collaborators. You know the projects, but not the people," Mrksich said. "[In the new center] everything is more connected. You can walk 15 steps and be in a completely different environment."

Mrksich said that when he was a student, he knew only the world surrounding his own studies—chemistry. Rarely did news from other disciplines penetrate his environment. "I was a chemistry student in a chemistry building. All I knew was chemistry. Now it's better for students because it's all mixed. They're exposed to different disciplines," he said.

In the new center, they will not only be exposed to them, but will become a part of them.



The new Center for Integrative Science encourages interaction by putting researchers from the physical sciences and the biological sciences side-by-side in more open lab space.

#### INSTANT ALLIANCES

As researchers file through the large, green-tinted glass doors of the center, security guard Fred Norris' face lights up with a smile. "Hello, how are we doing today?" he greets them. Norris takes pride in his work—and his workplace. His friendly demeanor entices smiles from even the most introverted as they stroll the long, shiny hallway to the elevators.

Upstairs on the center's third floor, Geoffrey Greene, PhD, professor and associate director of the Ben May Institute for Cancer Research, has reason to smile at his new surroundings. The 30-year veteran of the university enjoys airy new lab space with a "continuous open architecture" that is filled with warm, inviting colors—soft coral and green on the walls, orange on the tiled floors. The labs themselves are larger but at the price of less office space.

Greene moved to the center from the hospital's north wing, which opened in 1972. Those dated labs were very "subdivided," he said, and could accommodate only a handful of researchers. "It was comfortable because I'd been there for a long time, but it wasn't inviting," he said. "I would certainly not want to move back."

The same might be said for Mrksich's biochemistry lab, which was located in the Searle Chemical Laboratory building for the past decade. While the laboratory proper was devoted primarily to chemistry, most biology aspects of his research

occurred around the corner in a hallway that has been converted into lab space.

In his Searle office, voices floated in from the dimly lit hallway just outside his door. In some of the labs surrounding his office, cabinets were losing their faces and faucets rarely functioned. "[In the Searle lab] there's a very clear line that separates the chemistry space and the biology space," he said. "You know you're in a building that's showing its age. The space now is old and requires a lot of maintenance. They did a good job of making the new labs livable."

Mrksich's research group falls under the umbrella of the university's Institute for Biophysical Dynamics, which will occupy some of the new building's lab space. The institute's interdisciplinary culture matches the reasoning behind the new center itself, seeking, according to its mission statement, to "provide paths for insights developed at the laboratory bench to profoundly influence endeavors as diverse as molecular-based computing and the treatment of illness at the bedside."

The Howard Hughes Medical Institute donated nearly \$18 million to the new building and will operate labs occupying about 10 percent of the space, roughly 34,000 square feet. The labs will be part of HHMI's nationwide force of about 300 researchers who investigate basic medical questions, many of which—since they involve cross-discipline techniques—are not so basic any more.

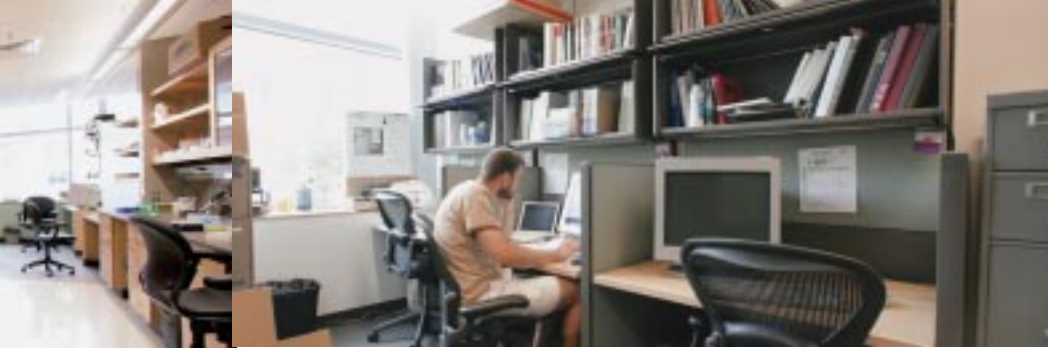
#### WIDELY ANTICIPATED

Of course, the old space had its advantages. Leaning back in one of the chairs positioned around a little table a few feet away from his large, wooden desk, Mrksich added that when he moves into the new center, he'll miss his spacious office.

But what it may lack in private space, the new building makes up for with appealing openness. Seen through the glass windows that stretch the height of the first floor, security guard Norris, a large man with graying hair sporting a crimson vest, sits behind a small table in the corner of the lobby. He was one of the first security guards in the center and remembers when everyone referred to it as the "dust bowl" because upon opening certain doors in the building, visitors would be enveloped in clouds of dust from construction.

Before his arrival early last summer when some groups began moving into the center, Norris worked in the Graduate School of Business but prefers this building because its atmosphere is less rigid. "It's beautiful. It's just fantastic," he said.

Excited anticipation surrounded the \$40 million center as its opening neared. Through three years of freezing winters and sweltering summers, construction crews kept up with the more than 200 design changes. Project Engineer Amanda Kreuger said the center was built as a "negative air" building, much like a



hospital. Instead of recycling oxygen and carbon dioxide throughout the center, as is done in an office building, the air is filtered and forced outside, keeping the inside awash with uncontaminated air.

The labs boast high ceilings, the most up-to-date equipment and plenty of space. Lines of silver desks fill the area, with a walkway splitting workspaces. Open, steel grids serve as the ceilings on each floor, showcasing the pipes and inner workings that are concealed in most buildings. There are also black, armless love seats outside the elevators on most floors and bulletin boards where people post information on anything from events to research and scholarship possibilities. A marker board in the first floor hallway is decorated in various handwriting and colors with drawings and quirky sayings, including the statement in big, bright orange letters: “Sometimes a girl just needs a battle-axe.”

#### THE BIRTH OF NEW IDEAS

Perhaps to make up for the lack of office space, the center also features conference rooms on each floor as well as break rooms with tables, couches, refrigerators, microwaves and marker boards.

“The new building encourages people to come out of their labs, encourages interactions, encourages collaborations,” Mrksich said, imagining a group of students sitting around a table in the break room discussing research and using the marker board to illustrate processes. “Most times it will be two students at the coffee bar speaking to each other,” he added, thinking of ways new ideas may develop.

Researchers’ close proximity to one another will increase not only interaction, but also awareness of scientific developments; scientists will be exposed to

seminars in other fields, many of which will take place in the new building.

“Often that’s where new ideas have their birth,” Mrksich said.

His only concern is that the building may be too big for its own good, but “we won’t know until we get there,” he said. “You want it big enough that everyone has enough space, but small enough that everyone is still connected.”

The new center’s openness—overall connectivity between labs and large windows in each lab that boast a fantastic view of Chicago’s skyline along the north side—excites most of the researchers who will use the space. “Most people think this building is a major step forward,” Greene said, “but some who prefer private space may not like it.”

As security guard Norris watches the door, he speaks about the elevators directly to his left, roped off with yellow caution tape. Some people thought the tape signified they were broken already, but Norris, a mixed note of defensiveness and pride in his voice, says this is not so. They’ve been closed for use because the part of the building they travel to is still under construction.

That pride, evident in Norris’ defense of the elevators and the construction workers who built them, is something that the administration hopes will come through in all those who use and work in the new center. Already, it comes through in Greene. “For interdisciplinary research and the recruitment of top-level faculty, [the building] is a real plus,” he said. “It will enable investigators to continue to push their research in new directions that will have an impact on all of us.”

Indeed, the new center, in its own way, is among the university’s great experiments.

## MORE BRICK AND MORTAR

Most tenants of the University of Chicago’s largest and most costly science building—the Center for Integrative Science (CIS)—have now moved into their new quarters. But that doesn’t mean construction is at a standstill.

Far from it. Other projects under way include a pediatric emergency room and specialty care center, a parking garage, a psychiatry outpatient clinic, a 10-story biomedical building and a planned hospital pavilion.

While the remaining occupants move into the CIS building, the new pediatric emergency room and the specialty care center—a shared four-story, 122,500-square-foot facility adjoining the recently opened Comer Children’s Hospital—will be completed in stages beginning this fall and lasting for several years. Together, this facility will add 50 percent to the space of the new children’s hospital.

Gary C. Comer, founder of the Lands’ End clothing-catalogue company, and his wife, Frances, made a \$42 million donation to create the specialty care center. The gift is the largest single donation ever made to the university and raises total support from the Comers for children’s services at Chicago to more than \$84 million.

Across the Midway at 61st Street and Drexel Avenue, a new parking garage will hold 1,000 vehicles. Connected next door, the psychiatry outpatient clinic will share building space with the university police. The garage and office building, scheduled to open in 2007, are estimated to cost \$47 million.

The Center for Biomedical Discovery will house scientists who conduct transitional research on children’s health, cancer and other specialty medical areas, including researchers with the Institute for Molecular Pediatric Science. The CBD’s price tag is nearly \$163 million, the second most expensive building in the current construction array. (The CIS building cost about \$200 million.)

The University of Chicago Hospitals also has begun planning for a new 500,000-square-foot pavilion on the south side of 57th Street, between Cottage Grove and Drexel avenues, adjacent to current hospital facilities. This project, as currently conceived, will increase the medical center’s total clinical capacity by more than one-third.

The new building’s design will place a premium on flexibility, the capacity to adjust to the rapid and unforeseen changes at the forefront of medicine in the 21st century.

The architects are taking an approach based on a grid system built from a standard structural cube. This cube could be configured over time for a wide range of purposes—from inpatient beds to radiology suites to surgical operating rooms—without changing the basic frame of the building.

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