

# Open for Business

With the new Dolan Center set to boost John Carroll's profile in science and technology, the Lighting Innovations Institute is a model for exciting collaborations with the regional community.



By John Ettore '80

Dick Hansler isn't the retiring type. At least not conventional retirement, the kind depicted in those alluring retirement community brochures, peppered with glossy photos of beaming elders cooling off with an iced tea after a round of golf or puttering around the garden.

So when he came to the end of his distinguished 42-year career as a high-powered research scientist at General

Electric's famed Nela Park lighting-research complex in East Cleveland a few years ago, Hansler, now on the shady-side of 70, was ripe for redirecting his restless intellectual energies, which thus far have helped him claim more than 70 patents. Which is how he soon came to be housed in the John Carroll Department of Physics offices.

**'Hansler and the institute now serve as poster children for an important new strategic initiative, the John Carroll Collaborative with Industry (JCCI)'**

Lured to campus by JCU physics alum John Davenport '68, at the time the head of lighting research & development at Nela Park, and Dr. Joe Trivisonno '55, the then-

chair of the Physics Department, minister's son Hansler set up shop in a cramped faculty office and a down-the-hall lab, which was soon enhanced by the addition of the valuable, donated equipment that followed him from G.E. Shortly after, Hansler was joined by Dr. Ed Carome '51, who retired from the physics faculty in 2001, but stayed on as a collaborator in what had come to be called the Lighting Innovations Institute (LII).

It was an inspired pairing: Carome had also been a trailblazer in blending pure and applied research in both the academy and private/governmental labs. Only he took the opposite path: he began as a professor at JCU in the 1950s, but his research interests in electronic sensors led him to take extended leaves of absence while the U.S. Navy funded his research. He also endeavored to commercialize his work through a couple of companies he had founded, and he had recently

attracted his own six-figure funding from the Federal Aviation Administration to develop a new generation of fiber optic landing lights at airports.

LII was taking off, not landing. “Gradually, we went from doing basically all our work for G.E. in the first few months to doing contract R&D for about 30 companies,” recalls Hansler of the fledgling days. Ford & Mitsubishi came calling for help on vehicle lighting. A company relighting the famed CN tower in Toronto requested a fiber optic system for the landmark’s elevators. Cleveland-based Steris asked for input on fiber-optic lighting during surgery.

When the volume of specialized paperwork associated with these projects and their various grant applications became too much for the university business office to handle, Hansler founded a company to take care of all that. The added benefit: he could now also seek additional research funding as a small business, in addition to competing for funds earmarked for university-affiliated researchers.

With this unique critical mass of brainpower, research experience, teaching ability and seasoned understanding of both the public and private R&D environments, the Lighting Innovations Institute quickly became an industrial-strength magnet for both corporate and government-funded research.

Even more crucial for JCU’s educational mission, LII was energized students in the sciences by giving them real-world research opportunities that often lead to post-graduation employment. And word quickly spread: the institute has drawn students from as far away as Harvard for brief stints to learn from and collaborate with Hansler and Carome.

Hansler couldn’t have known it at the time, but through his skillful blending of the best research that the academy and the industry have to offer, he was in effect designing his own prototype for John Carroll. Hansler and the institute now serve as poster children for an important new strategic initiative, the John Carroll Collaborative with Industry (JCCI).

JCCI is picking up powerful

momentum in the form of the \$66-million Dolan Center for Science and Technology rising on the campus’ front lawn. The Dolan Center will most definitely include office and lab space for the lighting institute and other JCCI ventures.

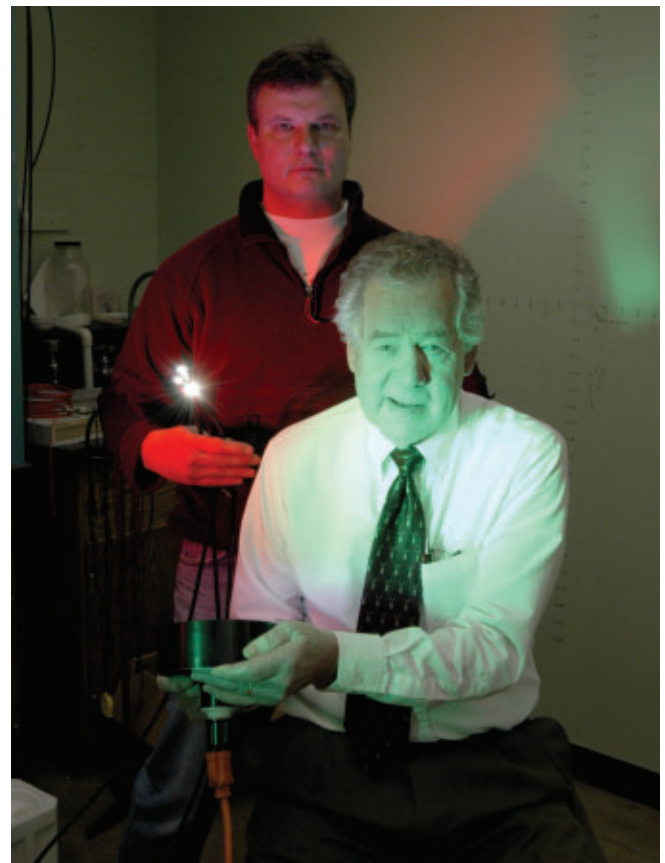
The university asked Battelle Memorial Institute – a think tank at the center of federal and private R&D efforts – to help chart the strategy for JCCI. The report noted that a few hurdles remain before JCCI becomes a thriving center for university collaborations with the corporate world. But Battelle also sees a uniquely promising niche for JCU. The university, the authors write, “should embrace ‘new comer’ status” in regional academic collaborations with the business community.

A prominent figure at the crossroads of Cleveland’s business and technology communities, Bill Grimberg, formerly of Cleveland Tomorrow and now with Consumer Innovative Partners, cuts to the chase: the new Dolan building and all the related activity in science & technology signals to the outside world that “John Carroll is open for business.”

Peter Anagnostos, JCU’s vice president of development, was probably fated to be the catalyst for this experiment in collaboration. He was first hired seven years ago with the explicit task of raising money for the renovation of the existing science center, the Bohannon Science Center building. But it quickly became apparent to him that it would be easier to start from scratch with a new building designed for

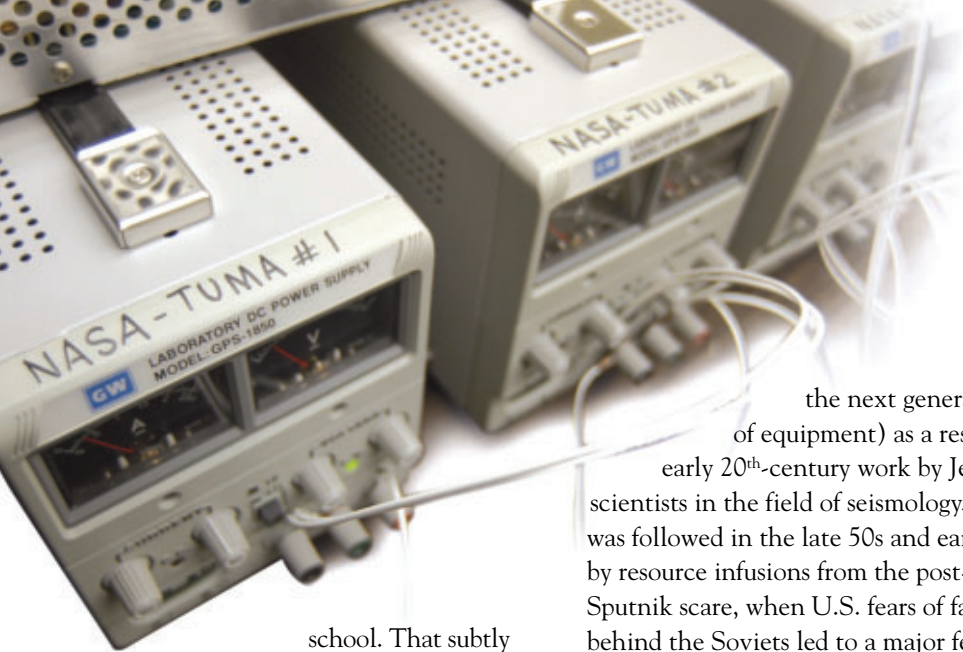
emerging teaching and research methods.

The gleaming new Dolan Center and all it portends for John Carroll may have seemed like a daunting, nearly impossible, stretch just a few years ago. While JCU has a distinguished century-plus record of turning out well-prepared graduates in the arts and sciences and the humanities, as well as squadrons of crack business school graduates who storm ashore the job market each year with all the gusto of Marines hitting the beaches at Anzio, the university’s footprint in the hard sciences was blurrier. Historically, chemistry and biology graduates have used these majors as stepping stones into medical and dental



Hansler with his colleague Vilnis Kubulins '89.

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school. That subtly had the effect of reducing JCU's reputation in those areas among employers and the overall community.

But the Department of Physics was a different story. Many of its graduates stayed in physics, and the department had areas of notable excellence owing to several historical anomalies. It had been home to a particularly well-stocked lab (which made it easier to raise funds for

the next generation of equipment) as a result of early 20<sup>th</sup>-century work by Jesuit scientists in the field of seismology. That was followed in the late 50s and early 60s by resource infusions from the post-Sputnik scare, when U.S. fears of falling behind the Soviets led to a major federal investment in university physics programs. Finally, the department both home grew and attracted from the outside more than its share of highly regarded scientists. At one point, Dr. Joe Trivisonno was so involved in vetting grant applications for the National Science Foundation that he chose to take an extended leave of absence to pursue that fulltime.

The germ of the idea for the JCCI was

really planted on the day in the mid-'90s when Anagnostos hosted a distinguished figure from the world-renowned Cleveland Clinic for a visit to campus. The eminent doctor asked to meet Dr. Richard Hansler, who was at that very time housed on the John Carroll campus but entirely unknown to Anagnostos. He soon made it his business to know a lot about the physicist and his work. It set Anagnostos' mind to imagining other such industry-academic collaborations housed on campus. "I said, 'boy, wouldn't it be something if we could have a number of Lighting Institutes on campus.'"

The new Dolan Center will serve as a well-lit stage for the university's redoubled attention to mathematics, science and computer science, a tangible brick & mortars testament to John Carroll's deep commitment to excellence in those areas, which are of such vital economic interest in the

## Lighting Innovation Institute: a research spin-off of GE's Nela Park

By attracting Dr. Richard Hansler to John Carroll, John Davenport and Dr. Joe Trivisonno did their part to preserve and reconstitute for the next century an important piece of Cleveland's glorious industrial heritage. Hansler's Lighting Innovation Institute, after all, is a direct offspring of General Electric's legendary Nela Park, which for decades has served as the company's hub for global R&D efforts in the lighting field, and until recently the headquarters of its lighting division. First conceived in 1910 and consciously designed to evoke an academic setting where star researchers would feel at home, Nela Park was one of the first industrial research parks in the U.S.

Dick Hansler joined G.E. shortly after earning a doctorate in physics from The Ohio State University in the early 1950s, and was immediately assigned to Nela Park. "It was quite an exciting place to be. The company was very generous. Talk about a company that took care of everything: there was a barber shop, and

they'd even get our license plates for us." Spouses were encouraged to keep each other company by joining the "Nela Mates." All efforts were aimed at keeping these world-class brains focused on the single goal of constantly moving back the frontiers of lighting technology.

And it worked. It was at Nela that GE researchers and engineers tested and perfected a succession of what would become industry-standard lighting systems. High-pressure sodium lights and halogen systems were both developed at Nela before being rolled out across the world.

Now, the next generation of lighting is L.E.D.s, or light-emitting diodes, computer-chip-controlled light sources. They are beginning to rapidly replace conventional lighting, sparking the onset of an explosive worldwide demand as the standard light bulb is increasingly replaced by L.E.D.s, which consume far less energy while lasting ten times as long.

"L.E.D.s are literally going to be everywhere," Dr. Hansler says. But the

trick for he and others chasing the technology's leading edge remains packing increasingly more illuminating power and wattage into increasingly smaller, more energy-efficient packages able to tackle an array of applications. That's part of what's going on today at the Lighting Innovations Institute.

Dr. Sally Wertheim, JCU's former Graduate School Dean, credits Joe Trivisonno for recognizing the possibilities of having Dr. Hansler on campus, in what was initially little more than a pilot project. "He (Trivisonno) was very visionary. He had served for years as a National Science Foundation reviewer, so I trusted his opinion."

Says her successor, Dr. Mary Beadle: "(Dr. Hansler) has gotten a lot of students involved in research, which to me is ideal for a JCCI initiative. You don't want a company (on campus) just to have a company. Our mission is education, so you want someone who's interested in education."

economy of the new century. Dolan will house all the science and math departments, high technology classrooms, state-of-the-art laboratories and faculty offices.

The Dolan Center planners have also set aside some space for six new entities that represent a cultural leap for JCU. These tenants, of which the Lighting Innovations Institute is the charter and thus far only confirmed member, will connect the academy to the outside world.

Don't think of this merely as incubator space, a zone to house and nurture start-ups and technology spin-offs such as LII. There may well be more of that to come. But university officials are also hoping to attract more mature organizations, such as industry groups, perhaps even a full-blown corporate R&D lab, lured by the promise of enhanced access to top faculty researchers, plentiful student research assistants and top-flight lab equipment.

The real power of this research proximity, as Hansler has observed, is that students can now pursue a co-op job without leaving campus. And they can more naturally merge theory and practice.

Hansler, who has adjunct faculty status, serves as a hybrid of all these worlds, which is why his institute was the ideal initial test of this collaborative approach. A veteran of a world-class corporate R&D lab consciously modeled on a university campus (see sidebar), he's a university-trained Ph.D. physicist, as well as someone who has done his share of campus recruiting of young scientists.

Moreover, his serene demeanor makes him an ideal trailblazer, helping to disarm even the most hard-bitten faculty skeptics of industry-academy collaboration. His quiet confidence is also a magnet for students, and his belief in his mission is supported by a career of glittering achievement and a network of contacts which can be quickly leveraged for the benefit of students. A hint of what's still to come occurred when one of his students recently won a highly competitive research fellowship at G.E.

Today, Dr. Hansler credits JCU with serving as an incubator for his entrepreneurial efforts and the institute

they support: "One thing that's helpful for start-up companies is to gain the support of smart people in a friendly environment, where the overhead costs aren't too horrible. Being in the Physics Department has nurtured my operation enormously."

In turn, his work has helped prepare students for the demands of the post-college world:

"It offers students the ability to learn about lighting and optics. They've been very responsive and enormously helpful to me, and in turn this operation has been very good for them. Not so much in the huge amounts they've been able to earn by working here, but rather that they get an opportunity to see what real-world research is like, with deadlines and budgets, where there's a real interest in the outcome. It's not just for curiosity, but for someone who wants to take a product and sell it."

Like all natural teachers, Hansler generously shares credit with his pupils: he's listed several as co-inventors on a handful of pending patent applications flowing from the institute's work. Meanwhile, he

continues to add to his own list of patents, sharing in his most recent one with collaborators from the German electronics giant Siemens late last year.

It's a truism that nothing really worth doing comes easily. And that goes for JCCI. As the vision was first articulated by Anagnostos and then shaped into a more formal plan of the university, there was some faculty uneasiness about the approach, even scattered hostility. The Battelle report diplomatically alludes to it as "the conservative academic culture of JCU." Anagnostos recounts once being summoned by a faculty governance committee alarmed at possible academic

encroachment by the corporate world.

But in time, much of the heat drained out of that debate. In part, that was due to the establishment of rigorous rules governing these collaborations – rules overseen by the dean of the Graduate School. Perhaps, too, an awareness grew that the world is changing, and that universities must increasingly immerse themselves in the world beyond their physical borders.

The Battelle report suggests the possibility of a new wave of investment in



Rick Liptak '04 is an LII intern.

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academic R&D not unlike that following the Sputnik launch. "In light of the recent events of September 11<sup>th</sup>, the field of physics may be presented with many new additional opportunities for achievement," the authors observe.

In the end, John Carroll President Fr. Edward Glynn, SJ, had the last word on JCCI, as he should. In classic Jesuit style – synthesizing apparent opposites, one eye trained on heaven and the other here on earth – he weighed in with the crucial insight. "God got involved in the world," he said. "So can we."

*John Ettore was formerly the editor of the Carroll Alumni Journal.*