

ROBERTS HALL: A REFLECTION

Overlooking Panther Hollow is the George A. Roberts Engineering Hall. Completed a little over 10 years ago, the building has played an important role in elevating the stature of the College of Engineering throughout the world.

Named after its benefactor George A. Roberts, who earned his degrees in Metallurgy at Carnegie Mellon, the building is equipped with state-of-the-art laboratories and classroom facilities, and it has become a hub for interdisciplinary research activities. The J. Earle and Mary Roberts Materials Characterization Laboratory (named after Roberts' parents) has been crucial in advancing the work of the Materials Science and Engineering department, and other labs have significantly contributed to the success of major research centers, such as the Data Systems Storage Center and the Center for Nano-enabled Device and Energy Technologies. In addition to labs and classrooms, the towering building contains offices, a library that features an archival metallurgical research collection, and conference rooms. On the top floor is the Singleton Room, a sunlit auditorium where events are held, and dignitaries such as Pennsylvania Governor Ed Rendell, Teresa Heinz and leading industry figures and scholars have all been guests. Roberts Hall has provided the CIT community with the facilities necessary to conduct research, study and congregate, and as a result of these pursuits, Carnegie Mellon remains at the forefront of engineering education and technology development.

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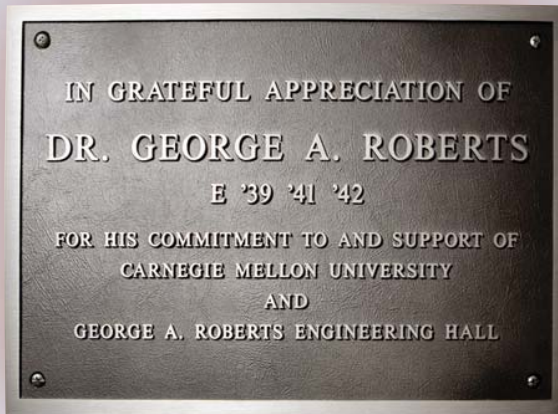


George A. Roberts

Roberts Engineering Hall and The J. Earle and Mary Roberts Materials Characterization Laboratory, which is located on the first floor of the building, have had a transformative effect on the Department of Materials Science and Engineering (MSE). First and foremost, these state-of-the-art facilities have enabled research not otherwise possible. The characterization facilities have been used by students and faculty to make breakthroughs in the study of electronic materials, magnetic materials, and metallic and ceramic microstructures. Second, the modern, well-appointed building has been a factor in attracting the best students and faculty to MSE.

GREG ROHER

Head, Materials Science and Engineering



Roberts Engineering Hall is the home of the Data Storage Systems Center (DSSC), a world-leading research institution in

magnetic data storage technologies. Exactly ten years after moving into its new home, the center is thriving on the fast moving technological front. Supported by 12 industrial companies, industrial consortium and government agencies and with an over \$5 million annual research budget, the center is developing advanced data storage technologies for future hard disk drives (HDD) and scalable magnetic memory technology for magnetic solid state drives (SSD) as well as training graduate students. The center has made a substantial contribution to and direct impact on the extraordinary advancement of hard disk drive technology and has supplied the \$60B/year HDD industry with over one hundred Ph.D. and M.S. graduates.

JIMMY ZHU, ABB Professor of Electrical and Computer Engineering, Director of DSSC



Elias Towe, the director of the Center for Nano-Enabled Device and Energy Technologies, conducts research in Roberts Hall.

IT'S MORE THAN HIS CIVIC DUTY

"I really enjoy seeing young people find their calling, and Carnegie Mellon has a tremendous knack for accomplishing this goal."

Dr. Hillard Lazarus is a busy man. He is a professor of medicine in the Hematology-Oncology Division at Case Western Reserve University and the director of the Blood and Marrow Transplantation Program at the Ireland Cancer Center, University Hospitals Case Medical Center in Cleveland. Inducted into the American Cancer Society's Cancer Care Giver Hall of Fame as well as the recipient of a Lifetime Achievement Award in 2007, he is a nationally recognized expert in treating blood malignancies, including leukemia and lymphoma.

In a career spanning 30 years, Lazarus has established himself as a pioneer in the use of stem cells to treat and cure certain types of cancers. He performed the first hematopoietic stem cell transplant in Ohio in 1980. In 1995, he initiated the nation's first clinical trials using mesenchymal stem cells, novel bone marrow stem cells that support blood production and help control the immune system. Traditional chemotherapy kills both cancerous and noncancerous cells, which weakens people and causes a wide range of side effects. Transplanted hematopoietic stem cells enable patients to tolerate high levels of chemotherapy and radiation therapy by restoring healthy blood production. Patients remain strong enough to receive powerful anticancer drugs in amounts large enough to destroy their cancers. This research has resulted in "curative therapies," says Lazarus, who heads a number of clinical trials at the National Center for Regenerative Medicine at Case Western.

Reflecting on the progression of medicine from when he started practicing in the late 1970s to today, he says that treatments have become better and more sophisticated in that we can use targeted therapies to attack malignant cells and preserve healthy ones. "We cure people today, and this is extremely gratifying," says Lazarus.

At the hospital, the doctor sees patients and remains on call, but his work doesn't stop there. The Federal government selected the Ireland Cancer Center to be a member of an elite group of 52 nationwide hospitals that form the Radiation Injury Treatment Network. Lazarus heads the Ohio-based team that can quickly treat victims of chemical and radiological attacks, like dirty bombs. (These types of attacks wreak havoc on victims' blood and bone marrow.) He serves on many regional and national medical committees and is the author of several books and literally hundreds of journal articles. Considering all he has accomplished, it is not surprising he says that he has a "28-hour, 10-day-a-week job." And that is not a complaint. Sustaining a pace that would wear most people out, Lazarus says, "I do all these things because this is what I like to do." In his pursuit of self-fulfillment, Lazarus commits himself to worthy causes, and fortunately the College of Engineering at Carnegie Mellon is one of them.

Lazarus graduated from the department of Civil and Environmental Engineering in 1970. Academically, he says he "was all over the place." Engineering intrigued him, but so did a lot of other things. (He credits his fraternity for making his time at Carnegie Mellon a lot of fun.) Lazarus claims he wasn't keen on amassing fundamental knowledge – he preferred applying what he learned. CIT was receptive to his needs and gave him latitude to study a mix of subjects and take advantage of opportunities, like the one that altered the course of his life. When he was a junior, a Carnegie Mellon professor arranged an opportunity for Lazarus to work with a surgeon who was designing a new replacement heart valve. It was during this project Lazarus realized that he wanted to go to medical school. "Carnegie Mellon was supportive of me and my interests and that is one of the many reasons why I support the university," says Lazarus.

Proud of his alma mater, Lazarus wears a Carnegie Mellon pin when he's at work. He and his wife have established the Hillard and Joan Lazarus Scholarship at the university, and his commitment doesn't stop there. He makes time to recruit for CIT. The doctor tells bright high school students from Cleveland what Carnegie Mellon offers: a great education, exposure to leading-edge research, and of course, there are buggy races, spring carnival, fraternities, and a fence to paint. "I also tell them about the Pittsburgh Steelers," he says. Lazarus is a proud season-ticket holder for several decades, and he routinely travels back to The Burgh for home games. "Pittsburgh is a very special city," says Lazarus. "People know about the ethnic diversity, but so much American history and culture is there as well."

"There is camaraderie at the university and it is an exciting place to be, whether you are young or old," Lazarus says. The doctor states that he doesn't make time for the university because he feels obligated. He says, "I really enjoy seeing young people find their calling, and Carnegie Mellon has a tremendous knack for accomplishing this goal."

