Dr. Frank Gupton, interim director of the Institute for Engineering and Medicine

Institute for Engineering and Medicine

Bonds VCU Research Community

As scientists seek to discover the causes and cures for disease and translate their endeavors into improved health care, it is clear that a significant portion of future advances will come through interdisciplinary collaboration. The faculty of the VCU Schools of Engineering, Medicine, and Life Sciences are actively engaged in numerous collaborative research projects ranging from drug design and delivery, tissue engineering and bioinformatics to regenerative medicine and antimicrobial coatings. To foster and promote this type of translational research, a new facility has been established to provide cost-effective, shared resources for interdisciplinary research. This facility, dedicated to collaborations in engineering and medicine, is a state-of-the-art flex lab designed to accommodate a variety of project needs. The new research hub is strategically located in the Engineering West Hall on the Monroe Park Campus.

To effectively leverage the capabilities of this new asset, a chartered institute is being established to provide organizational structure for this facility. This institute will formally encompass, manage, and compliment the elements of bioengineering and biotechnology that currently exist at VCU. As a project-driven entity, the VCU Institute for Engineering and Medicine (VCU IEM) will make laboratory research space available for interdisciplinary projects that embrace new technologies in the pursuit of offering high-quality, affordable health care. The Institute will provide an environment that fosters the sharing of knowledge and resources to address the most challenging issues facing biomedical science and engineering.

Although this concept is new to VCU, similar facilities have been developed in the U.S. over the past decade, including Stanford's Clark Center and the Rensselaer Center for Biotechnology and Interdisciplinary Studies. These lab facilities are flexible and project-driven rather than faculty-driven in the allocation of space, whereby projects are typically tied to interdisciplinary funding. As projects change, faculty investigators within the proposed Institute will change along with the interior lab configurations.

One of the most important goals of the VCU IEM will be to promote interdisciplinary partnerships between the Medical and Monroe Park campuses. The primary objective of these collaborations will be to translate the basic research carried out at the VCU IEM into products, services, and procedures that will advance health care. From a broader perspective, the development of these partnerships within the VCU IEM will serve to link the two campuses at VCU to more effectively leverage and unify the collective research capabilities of the university.

Equipped for Inspiration

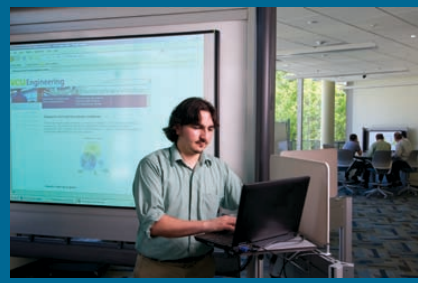
The common spaces in the Institute for Engineering and Medicine (IEM) are designed to inspire. Just outside the shared reconfigurable lab space, presentation and meeting areas hug the curve of the building, allowing for an unbroken line of sight from one end of the bow to the other.

These meeting areas provide researchers with the tools they need to accomplish the IEM's mission of sparking discussion, fostering creativity, and encouraging collaboration across the disciplines of engineering, medicine, and the life sciences.

Led by Caren Girard, the team at VCU Planning and Design worked with Creative, a workplace interiors and technology company, to create meeting spaces where people would be drawn to share information and ideas. Out of this collaboration emerged an innovative design.

The open layout promotes a form of visual eavesdropping that lets researchers in one meeting space see the data being presented by another group. People can quickly move back and forth between spaces—displaying information, asking questions, and exchanging ideas.

Frank Gupton, interim director of the IEM, sees the building itself as call to action. In this vision, researchers will exchange ideas in the common areas and then walk just a few steps into the lab where they can bring their ideas to life.



Between the upper and lower arcs, the IEM's common spaces can accommodate up to 12 groups. The meeting areas are separated not by physical walls, but by special "walls of silence", which prevent the space from becoming too noisy.

Each area is equipped with state-of-the-art, intuitive technology that helps teams share information quickly and easily.

The PolyVision Eno Board is a smart board that allows researchers to manipulate the material on a white board using both a computer (dedicated to the space) and a stylus that looks like a dry erase marker. Users can project onto the board, write on it, and save their work to a file or post it on a website.

Mediascape is an example of a furniture solution integrated with technology. Using a VGA cable, each scientist can plug his or her laptop into one of several "pucks" that splay out from the conference table like tentacles. Then, with only a light tap of the appropriate "puck," users can switch displays. This tool supports collaboration and communication by providing instant access to digital information.

The Polyvision CopyCam makes an exact copy of the images drawn on a dry erase board and then allows researchers to print those images or save them to a USB storage device so that they can be exchanged, edited, and disseminated after the meeting's conclusion.

According to Gupton, "The IEM is built on the idea that innovation occurs at the interface of different disciplines." Combining the skills of faculty in traditional disciplines leverages VCU's research capabilities, and since only a handful of other schools across the country have similar facilities, the IEM provides VCU faculty and students with a unique opportunity to create and build on cross-disciplinary areas of strength.