



Case Study | University of North Dakota

UND REVITALIZES MEDICAL FACILITIES, UNIFIES STUDENTS





CHALLENGE

The University of North Dakota (UND) School of Medicine and Health Sciences educates almost half of all doctors in the state, placing a great responsibility on the only medical school in North Dakota. It also educates health sciences professionals, such as occupational and physical therapists. The school faced numerous challenges while upholding this responsibility because of its facilities.

Faculty, staff and students were split between multiple buildings, isolated to specific areas. The separation of programs on campus forced those who are a part of the School of Medicine and Health Sciences (SMHS) to collaborate in limited ways.

The lab spaces, for example, proved to be rigid by not allowing for the flexibility needed in such an environment. The work spaces within the labs were also more individualized, given the arrangement of the equipment. Office space for faculty and staff also encroached in the lab area, which limited what could be done.

While the lab space seemed bunched together, the Simulation Center was the opposite. In the past, the center wasn't attached



The updated School of Medicine and Health Sciences (SMHS) facility features the 200-seat Charles H. Fee, MD, Auditorium that's open to the public for community events.





to the main facility at all. And, it lacked much-needed space for students and faculty.

The solutions needed for the facility weren't as easy as updating lab equipment or adding new furniture.

"The goal of the new building was not only to accommodate larger classroom sizes, but to educate good, qualified health care professionals," explained Jon Allen, director of simulation training.

The building also needed to encourage socializing between students from different disciplines, while also bringing the faculty and staff who work in the building together in a collaborative way. University officials recognized this need, which led to their four-pronged plan called the "Healthcare Workforce Initiative."

The initiative addresses the state's health care workforce needs, including reducing the burden on disease, retaining more graduates in

North Dakota, and improving the health care delivery system.

To achieve its goals, the school needed a vast improvement in its infrastructure, including audiovisual (AV) technology solutions.

"I'm a physician. I'm not an expert in AV," Dr. Allen said. "AV is really complicated and frankly, way above my head."

In addition to the help of local and national architects and construction companies, AVI Systems was brought in to help the university realize its goals for the future.

SOLUTION

A shortage of health-care workers prompted the North Dakota Legislature to approve \$123.7 million in funding to build a 325,000-square-foot SMHS building. The approval set a record, being the largest state-funded building project in North Dakota.

Once the project was approved, university officials spent the next year planning the four-story building, with the help of JLG Architects in Grand Forks, Steinberg Architects in Los Angeles, Calif., and Perkins+Will in Minneapolis, Minn. The building opened for the 2016 fall semester.

The school produced a video about the SMHS building, where many faculty spoke to the differences between the old and new spaces, along with the benefits that students and the community will gain from the facility.



One of the main features of the new facility is the auditorium, where numerous displays, projectors and screens help complement lectures and classes.



Being the only one of its kind within the facility, the Charles H. Fee, MD, Auditorium seats 200 people for classes, lectures and community events.

The building has five primary features that visitors experience right away. Among them, there is a floor-to-ceiling glass atrium, a café that's open to the public, and the 200-seat Charles H. Fee, MD, Auditorium for lectures, community events and more.

The auditorium has long, fixed tables that curve around the central point in the room. With multiple levels, the space allows for small-group collaboration thanks to its movable seating. It's the only room like it in the building.

Before stepping foot in the auditorium, however, visitors pass office space that plays an important role on campus.

Joshua Wynne, dean of SMHS, said in the statement: "When visitors enter the building,

we wanted to have offices that spoke to our two most important constituencies right there by the entrance," referring to students and the community.

The spaces needed to be apparent and easily accessible to anybody who needed to stop by.

"The most important function that we do is educational," Wynne said. "So our Office of Student Affairs and Admissions is right there by the front door."

He went on to say that the building is just as accessible and open to the public as it is to students, since taxpayer dollars funded the project.



Updated simulation suites feature high-tech manikins for real-life scenarios, testing and more.

“Any citizen who comes through the front door can immediately find assistance in the Office of Alumni and Community Relations,” he said. The facility has much to offer both the public and the students.

Constructed in a north-south design, classrooms and small-group rooms line the so-called “Main Street,” along with open collaboration spaces with built-in connectivity.

This layout also acts as a bridge between the east and west sides of the building, which house faculty and research.

“One of the big differences in the research space in the old building and the new building is that we now utilize an open lab design,” said Colin Combs, chair of biomedical sciences. “And so this provides us with an expansive collaborative space, where we can interact more efficiently.”

Combs explained that the new design makes it easier to remain flexible because of the versatility of the space. Depending on the project, the lab can grow or shrink to give

students and faculty more or less room. Other arrangements helped improve the efficiency of the space as well, including moving lab equipment into a centralized area for better access.

The improvements to the lab helped create a more collaborative space, where students can utilize the equipment in a more fluid way.

The Simulation Center also saw much-needed updates that have improved the work being done within the facility.

The updates incorporated six simulation rooms – two more than the old Simulation Center – 14 standardized patient exam rooms, and five debriefing rooms, which are equipped with displays for video conferencing.

A part of
the

“We have to better prepare these health care students, and this building allows for that and much, much more.”

Dr. Jon Allen,
Director of Simulation Training



simulation suites are high-tech manikins, which can cry, sweat and even bleed to capture both the emotions and actions that a real patient might bring to a hospital. The simulations help prepare students for the various scenarios they're likely to encounter as a health care professionals.

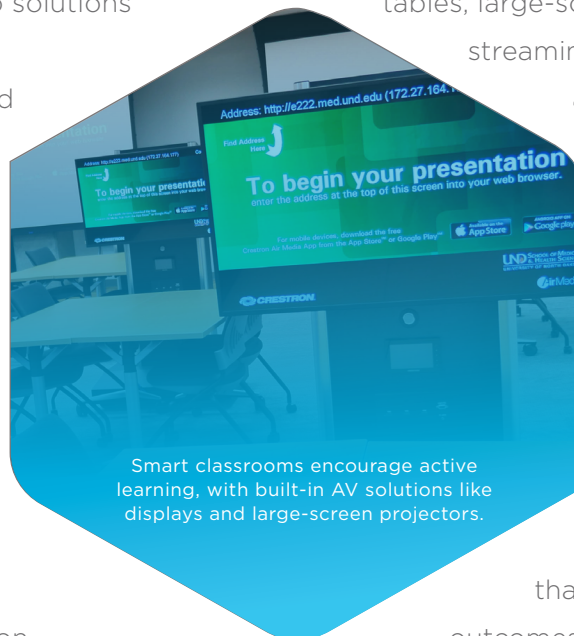
Built-in monitors and video solutions make it possible to analyze students' performances and capabilities during these simulations. Video can be played back after simulations have been completed, helping students and faculty gain better insight together.

This means of collaboration with the help of AV technology is common throughout the building. Many of the classrooms enable active learning, which has had a positive impact on student learning outcomes, according to Gwen Halaas, senior associate dean of education.

"This building was designed specifically to bring all of our programs together, so that our students are more likely to spend more time together both in formal education experiences, but also in social opportunities," Dr. Halaas said.

Collaboration and active learning were some of the overarching themes of the building, each being designed into many of the spaces, including the classrooms.

All classrooms are outfitted with smart classroom technology, which includes scheduling and monitoring capabilities, interactive discussion tables, large-screen projectors and streaming.

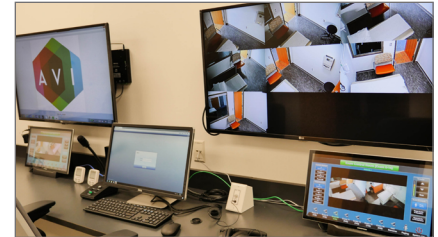


"Active learning is a real exciting opportunity in this new building," Dr. Halaas said. "The space is designed to allow our students to work together in small groups and have more conversations. They're more engaged, and the evidence shows us that that also increases their learning outcomes."

With numerous breakout rooms, small-group spaces and hands-on environments with the latest collaboration technology, students have access to a widely recognized facility that fosters education in many ways.

"The vision was to have an active learning building," explained Nasser Hammami, the school's CIO. "We wanted students to have a true interdisciplinary approach."

Students from different programs can come together in one space to collaborate, Hammami



Left: The auditorium features numerous AV solutions, including large-screen projectors and displays. **Top right:** The simulation suites allow professors to record and play back video of student performances. **Bottom right:** Collaboration spaces have wall-mounted displays and video conferencing equipment.

said, explaining that, “Med students are paired up with occupational and physical therapy students; athletic training students are paired up with public health students.”

The building has eight learning communities. In this space, different majors can study and relax together, bolstering a diverse working environment.

The team approach is apparent throughout the building with open laboratories, collaboration spaces and classrooms that encourage students working at the same time to join up and learn from one another.

Every room can be shared by students, regardless of their major. The rooms are assigned based on the needs of the class, which, in some cases, might overlap.

“No room is identical on purpose,” Hammami said. “They all have similar technology –

standardized technology – but we wanted that flexibility.”

Since technology is consistently available throughout the building, finding a connection and taking advantage of these solutions can be achieved quickly.

“Whether it’s video conferencing or lecture capture, it’s seamless and just adds a lot of capabilities to collaborate across the state between campuses,” Hammami said.

The facility has improved the way students, faculty and staff work together and interact with one another because of the design and implementation of these technology solutions.

“We have to better prepare these health care students, and this building allows for that and much, much more,” Allen said.

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