

umass MED

The University of Massachusetts Medical School Magazine

THE ALBERT SHERMAN CENTER 2013

SPECIAL ISSUE A vision realized

Room to grow:
Learning Communities establish roots

Learning with and from one another

An authentic educational experience



The Life Sciences Moment Has Arrived



ABOUT THE ALBERT SHERMAN CENTER

When historians look back 50 years from now to identify the important milestones in the history of UMass Medical School, the opening of the Albert Sherman Center will most certainly stand out. The building brings together leading minds in basic and clinical research to foster cross-disciplinary collaboration to move therapeutic breakthroughs from the lab to the doctor's office. It creates an innovative learning environment to train the next generation of medical professionals to improve medicine and the medical care of tomorrow. Read all about the Sherman Center in this special edition of *UMass Med* magazine.



www.umassmed.edu/shermancenter

The University of Massachusetts Medical School, the state's first and only public academic health sciences center, educates physicians, scientists and advanced practice nurses to heal, discover, teach and care, with compassion. Our mission is to advance the health and well-being of the people of the commonwealth and the world through pioneering advances in education, research and health care delivery.

3 Chancellor's Message

4 A vision realized

The Albert Sherman Center creates a new hub of the Worcester campus, both for researchers focused on translating basic biological discoveries into new therapies for a range of human maladies, and the students who will learn in a fully collaborative environment using the latest in educational technology.

14 Room to grow: Learning Communities establish roots

Once only an idea in the heads of a handful of faculty and student advocates, the Learning Communities will come into their own in beautiful, light-filled spaces where both medical and nursing students can learn, teach, relax and recharge.

18 Learning with and from one another

The Albert Sherman Center will foster many opportunities for students of the School of Medicine and Graduate School of Nursing—and even Graduate School of Biomedical Sciences—to learn with and from one another.

20 An authentic educational experience

The interprofessional Center for Experiential Learning and Simulation brings together five different simulation operations to create an authentic, innovative and collaborative learning environment for many different types of learners.

22 From the Shaw Building to the Sherman Center: A historian's perspective

24 As green as it gets: Built for efficiency and sustainability

26 Albie Sherman, a champion for UMass Medical School

28 Last Word

Gov. Deval L. Patrick and 2006 Nobel Prize Laureate Craig C. Mello, PhD, talk about how the commonwealth's strategic investment in the life sciences has the potential to change the scientific world, again.

A historian's perspective

page 22



As you read about the dynamic UMass Medical School community, you'll frequently come across references to our partners and programs.

Commonwealth Medicine

UMass Medical School's innovative public service division that assists state agencies and health care organizations to enhance the value and quality of expenditures and improve access and delivery of care for at-risk and uninsured populations. www.umassmed.edu/commed

The Research Enterprise

UMass Medical School's world-class investigators, who make discoveries in basic science and clinical research and attract \$250 million in funding annually.

www.umassmed.edu/research

UMass Medicine Development Office

The charitable entity that supports the academic and research enterprises of UMass Medical School and the clinical initiatives of UMass Memorial Health Care by forming vital partnerships between contributors and health care professionals, educators and researchers.

www.umassmed.edu/development

UMass Memorial Health Care

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Alumni of the School of Medicine, Graduate School of Biomedical Sciences and the Graduate School of Nursing may send their latest news to alumni@umassmed.edu.

www.umassmed.edu

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The Albert Sherman Center was designed by ARC/Architectural Resources Cambridge. Construction of the ASC and garage was managed by Suffolk Construction. The expansion of the power plant was built by Skanska USA. PMA Consultants served as the project manager, overseeing day-to-day activities on behalf of the university and building authority.

Chancellor's Message

Every truly great institution has its moment. A time comes when it suddenly shines so brightly, all can see the tremendous promise within its walls.

That moment has arrived for UMass Medical School, and in this issue of *UMass Med* magazine, we invite you to join us as we mark one of the most exciting signs of our transformation: the opening of the Albert Sherman Center (ASC). A striking vision with its glass and aluminum façade, this building is now the new front door for our campus. Just as City Square will eventually stand as the new entryway to downtown Worcester, the ASC will welcome visitors to the heart of our campus, standing as a beacon of opportunity and hope.

“The ASC was specifically designed to enhance collaboration, encouraging researchers from all disciplines to engage in creative partnerships that will advance biomedicine in bold new ways”

This remarkable building came to life only through extraordinary collaboration among many, including those at the highest levels of our state government, the UMass President's Office, the UMass Building Authority, the trustees, the architects, planners, construction crews and our own faculty and leadership. All should be lauded for their vision and commitment to creating the optimal environment to enable our exceptional faculty, students and staff to make discoveries that will fundamentally change the course of the history of disease. The results of their efforts are clearly visible. Now, the next phase of teamwork begins inside the ASC, which is already humming with activity.

The ASC was specifically designed to enhance collaboration, encouraging researchers from all disciplines to engage in creative partnerships that will advance biomedicine in bold new ways. The building's design brings complementary programs closer together. Dry labs such as bioinformatics, for example, are now close to the wet labs where living systems are probed and analyzed.

Diseases, from those as rare as a genetic condition that causes congenital blindness to those as common as diabetes, heart disease and malaria, are being studied in this new state-of-the-art facility. Advanced tools, such as gene therapy, sequencers and sophisticated analytical software, are being brought to bear upon health problems that cause untold suffering and loss of life. New learning settings, meanwhile, help us ensure that we remain at the forefront of health sciences education and interprofessional training.

Looking out today, it is difficult to imagine how our great academic health sciences system blossomed from a starting class comprising just 16 students who studied in the small Shaw Building on the corner of our campus. We are now almost a small city, vibrant with activity and filled with promise. Our mission, however, is fundamentally unchanged. It is certain that with the opening of the ASC, we have taken a bold step in securing our future, as we continue to innovate and advance health sciences education, research and care.

Past successes emboldened us to seize this moment. Now, we are eager for even more progress. Read on, and learn about the many exciting ways we are already pursuing our vital mission and pushing the boundaries of the possible in health care and biomedicine. Hear also about our visions for the future, and the great potential they foretell.



Michael F. Collins, MD
CHANCELLOR, UNIVERSITY OF MASSACHUSETTS MEDICAL SCHOOL
SENIOR VICE PRESIDENT FOR THE HEALTH SCIENCES, UNIVERSITY
OF MASSACHUSETTS

A vision realized

From every approach to the Worcester campus, the landscape has dramatically changed. After years of planning, and 32 months of intense construction, the Albert Sherman Center is now a reality.

The new building officially became available to the UMass Medical School on Dec. 12, 2012—the certificate of occupancy symbolically signed at 12:12 p.m. on that date to add a memorable data point marking the beginning of a new era of research, education and community life on campus.

“The completion of the Albert Sherman Center is a transformative event in the history of the commonwealth’s medical school,” said Chancellor Michael F. Collins. “It would be hard to overstate the importance of this new center of our campus, or the positive impact of the work that will go on within it.”

Named for the Medical School’s long-time vice chancellor for university relations who retired in 2010 (See story, page 26.), the Albert Sherman Center (ASC) is the largest facility built on the Worcester campus since construction of the original medical school and hospital complex in the 1970s.

By Michael Cohen

The Albert Sherman Center creates a new hub for research, educational and social activity on the Worcester campus. Pictured on opposite page, clockwise from left: The lecture hall accommodates 350 people; sunny stairs connect the research tower floors; in the educational spaces, glass walls created an open feeling in internal corridors; North-facing wet labs on floors four through nine are brightened by natural light shining through oversized windows.



“It would be hard to overstate the importance of this new center of our campus, or the positive impact of the work that will go on within it.”

— Michael F. Collins, MD
CHANCELLOR

The 512,000-square-foot building stands 11 stories high, with nine occupied floors topped by a two-story mechanical systems penthouse. The building nearly doubles the amount of research space on campus, holds major new areas specifically designed for advanced medical and nursing education and offers aesthetically pleasing, comfortable public spaces for students, faculty and staff to gather professionally and socially.

“Bringing a project as large and complex as the Albert Sherman Center to reality, on-time and within budget, is a remarkable achievement that took thousands of people to accomplish,” Chancellor Collins said. “From the leaders of state government who set the policy to invest in the life sciences, to those who helped envision a new design for medical education and research, to the hands that turned the first shovel of dirt and applied the last finishing touch of paint within, every person involved in creating this outstanding facility should be proud of their contribution.”

A unified campus

The ASC emerges as the new hub of the Worcester campus. It physically connects to the existing buildings with broad landscaped exterior plazas and two elevated pedestrian bridges. The building’s main entrance opens from the quad into a dramatic two-story lobby. The first three floors contain educational and public spaces spread around a central atrium. In this area are suites for the School of

Medicine’s five Learning Communities, which are at the core of the new Learner-Center Integrated Curriculum, and similar learning space for the Graduate School of Nursing. (See story, page 14.)

On the second and third floors, a wide range of students will engage in hands-on learning at the interprofessional Center for Experiential Learning and Simulation (iCELS), working with advanced clinical mannequins and actors trained to present like patients with specific conditions. (See story, page 18.)

Setting the stage for diverse academic, social and community events, the Sherman Center’s public spaces include a full-service café and dining area, a 350-seat lecture hall and a flexible function suite that overlooks campus. The building has numerous conference rooms and seminar spaces of varying sizes. There is also a fitness center for students, faculty and staff, visible to visitors entering through an entrance on North Road.

“Being a part of this project has been one of the most rewarding professional experiences I have ever had,” said Terence R. Flotte, MD, the *Celia and Isaac Haidak Professor of Medicine*, executive deputy chancellor, provost and dean of the School of Medicine. “The opportunity to create this building came at precisely the same time we were redesigning our medical education curriculum and expanding our translational research work. More than 400 members of the campus community had input into the evolution of those programs, and now the

Albert Sherman Center is the physical manifestation of our collective vision for the future.”

Towering research

The majority of space in the ASC is built for research. Floors four through nine are called the Research Tower and are filled with laboratories, core facilities, offices and conference spaces. When fully occupied, the ASC will have some 90 principal investigators, leading laboratory programs with more than 700 scientists, graduate students and support staff.

“The key attribute of the research going into the Sherman Center is that it’s organized around centers, programs and institutes,” Dr. Flotte said. “Academic departments bestow rank and tenure, and serve important administrative functions. What we can do differently with research centers, institutes and programs, however, is to cut across traditional disciplinary barriers and bring people together around common interests and goals.”

This organizing principle puts basic scientists exploring the fundamentals of biology at the cellular and molecular level next to clinical researchers working on the processes of human disease and therapeutic development. Among these are many physician-scientists who, in addition to research, treat patients in more than 10 medical divisions—from pediatrics to surgery—at UMass Memorial Medical Center. These basic and clinical teams will work side by side with



Faces of the Sherman Center

To hear interviews with the people who will be working, collaborating, teaching and learning in the Sherman Center, visit www.umassmed.edu/ASCvideos.

1. "For the past five or six years, [our department] has been split across two floors. Although that doesn't seem like a big deal, it turns out that that set of stairs is a huge blockage to interaction. Many of us work on related topics and we collaborate a lot... There isn't as much cross communication as there will be when everyone is essentially in a big open area."

— Leslie Berg, PhD, professor of pathology

2. "Serendipity matters a lot in biology. You just happen to be talking to somebody about what they're doing, or in this case now, you'll just be moseying over to somebody's bench and they'll be doing an experiment that you were otherwise clueless about or be working on a machine that you were otherwise clueless about. This is very exciting in terms of the opportunity for random good things to happen."

— Allan Jacobson, PhD, the *Gerald L. Haidak, MD, and Zelda S. Haidak Professor of Cell Biology* and chair and professor of microbiology & physiological systems

3. "A lot of the idea behind modern biomedical research is that truly transdisciplinary teams are more creative and come up with much more innovative ideas than those who stick to their own silos. So the physical proximity will really help in fostering that. It symbolizes not only the spirit of our new science, if you will, it also symbolizes the steeply ascending trajectory of UMass Medical School."

— Catarina Kiefe, MD, PhD, the *Melvin S. and Sandra L. Cutler Chair in Biomedical Research*, chair and professor of quantitative health sciences and professor of medicine

4. "The beauty of [the learning communities] space is, not only is it physically attractive, but there is going to be teaching, classroom space, so the idea of learning in your house and with your house will be important. The spaces are connected to each other, so there can be mixing of the communities, but it will give people a place to go to learn... this is going to create opportunities for the informal [curriculum] to blossom and really inform not only the curriculum but what happens in the student community."

— Dave Hatem, MD, clinical associate professor of medicine, co-director of the learning communities

5. "When I got here, there were only two buildings on the main campus... it's very nice to see activity on your campus, to see new buildings, new growth and to know you're a part of this growth. I think it does symbolize the future. I think any time you have growth, that's the future. The point is to grow and expand our knowledge in science and we can only do that by adding more resources."

— Jon-Matthew Belton, GSBS student

6. "[In the interprofessional Center for Experiential Learning and Simulation] there will be much more square footage than we have now... with the capacity for doing all kinds of simulation, be it task training for a procedure to something on a much larger scale like mass casualty simulation training and mock codes... There is a lot of work that has been done behind the scenes, leading up to this. All of us here at the simulation center as well as at the standardized patient center are very excited about this coming to fruition after such a long period of time."

— Sarah McGee, MD, MPH, clinical associate professor of medicine, associate director, UMMS Simulation Center operations and educational programming

researchers who use large data sets and high-performance computing to ask and answer biological or population health questions.

Much of the research in the new building will be done through the Advanced Therapeutics Cluster, which is an umbrella organization that includes the RNA Therapeutics Institute, the Gene Therapy Center and the Program in Systems Biology. The Neurotherapeutics Institute, made up of a diverse group of faculty investigating central questions of neurodegenerative disease mechanisms and treatment, will also move to the ASC, closely aligned with the programs in the advanced cluster.

Advanced therapeutics are new classes of drugs that use genes and biologic molecules to modulate cellular processes and treat disease. RNA molecules could shut down the production of disease-causing proteins. Healthy genes could be delivered to treat patients with genetic disorders. Pancreatic cells that produce insulin, cardiac cells damaged by heart attack, perhaps even whole organs weakened by trauma or disease, could be restored with stem cell therapies.

The tower will also host research in the Diabetes and Heart & Vascular Centers of Excellence; the Program in Bioinformatics & Integrative Biology; and the departments of Pathology, Quantitative Health Sciences, and Microbiology & Physiological Systems. Collectively, the researchers in the ASC will focus on translating basic biological discoveries into new therapies for a range of human maladies; and in discovering the best approaches to improving the health of patients and populations.

For example, several scientists in the new building cluster around neurodegenerative diseases such as amyotrophic lateral sclerosis (ALS), Huntington's, Alzheimer's and various forms of dementia. Across long, open laboratory bays will be teams characterizing the genetic foundation of these diseases; others will use DNA and RNA constructs to control the processes of the diseases; still others will study protein interactions at the molecular level of the diseases. These teams will work alongside biochemists designing delivery vehicles for advanced therapies and physician-scientists who treat patients while exploring potential cures.

"When someone working on drug delivery strategy has a question about genetics, or the RNA molecules involved, all they have to do is walk a few feet down the lab and ask," Flotte said. "In all these research areas, we hope to create a pipeline that takes very fundamental knowledge and translates that into potential treatments."

Digital science

A vital aspect of modern biomedical research now depends on scientists whose experimental tools are high-performance computers and advanced algorithms, not pipettes and petri dishes.

With the advent of sequencing technology and related systems, relatively modest experiments can generate staggering amounts of raw data. For example, researchers can examine two types of cells from the same patient—cancer cells and normal cells from tissue nearby—and determine what is different about them. They can measure the active genes in each cell type, the amount and types of RNA molecules at work, the number and characteristics of proteins being created, and where those regulatory proteins are binding to key locations of the genome.

Just comparing two cell types at the molecular level creates hundreds of millions of raw data points. That complexity is multiplied exponentially, because a proper research project must analyze many patients to yield credible results. Making sense of these massive data,



Evolutionary design video series

Translating the vision for a facility as large and complex as the Albert Sherman Center into a tangible plan that facilitates its construction was an enormous task. To illuminate aspects of the design process, the Office of Communications created a series of videos that focused on the choice of architect, the use of low- and high-tech modeling and the selection of interior finishes.

www.umassmed.edu/ASCvideos

A complicated move

Moving in all the people who will be working, teaching and learning in the Sherman Center, as well as all the equipment and furniture required, is a complicated process that will take place over several months. See video:

www.umassmed.edu/ASCvideos



Construction on the fast track



Scan the code to see 34 months of construction condensed into 97 seconds in this time lapse video created from the daily images captured by two cameras, one on the roof of the Medical School building and one from the top of Biotech II.

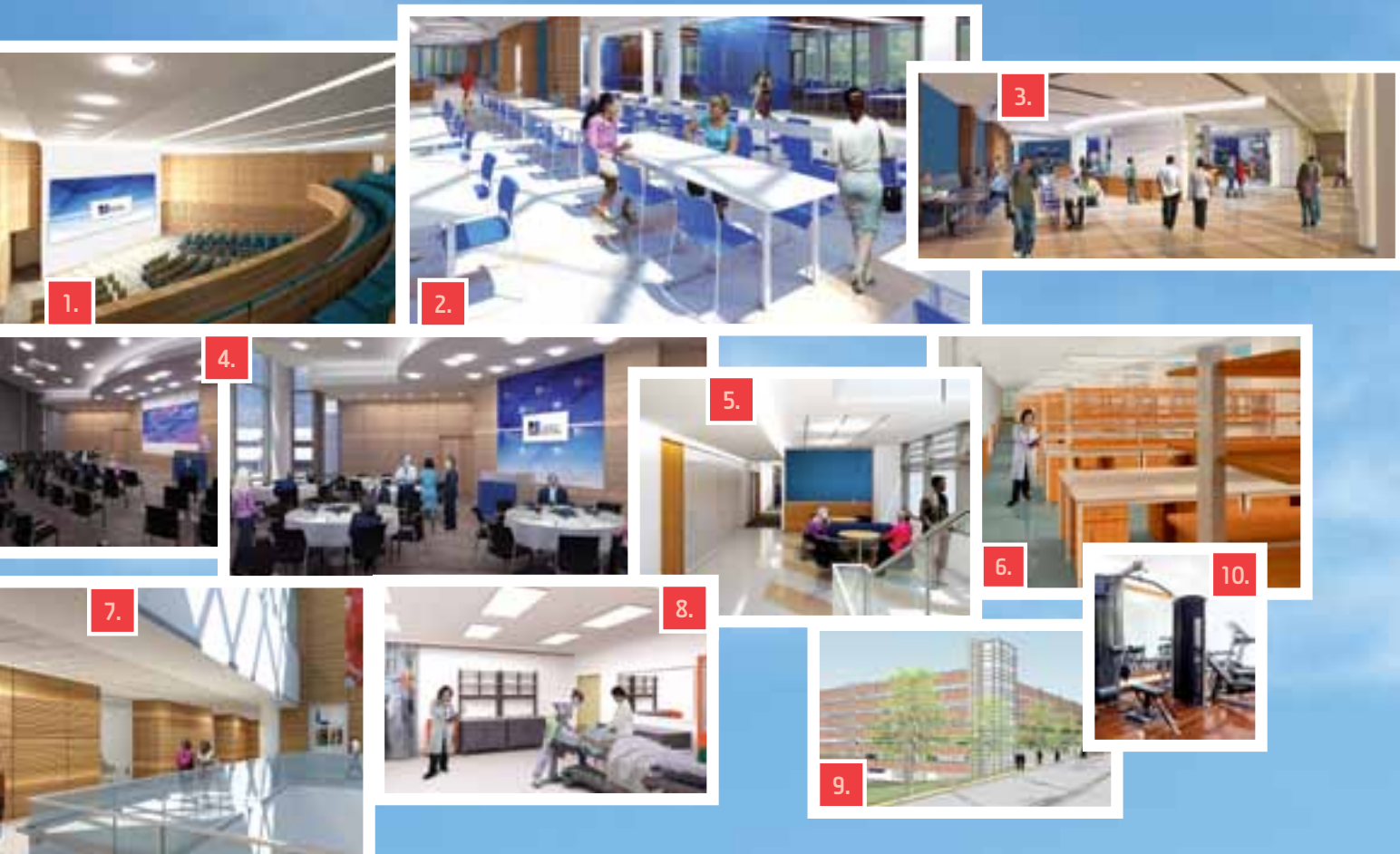
Or visit www.umassmed.edu/ASCvideos

* The Life Sciences Moment Has Arrived

Floors four through nine of the Albert Sherman Center comprise the Research Tower. On the north side of the tower, and in much of the central core, each floor contains state-of-the-art biomedical research laboratories and related facilities.

On the south side of the tower, the floors are configured with offices and “dry labs” where investigators work with large data sets, powerful computers and advanced digital tools to simulate and analyze biological systems, population health patterns and clinical outcomes.

- | | |
|--------------------------------------|--|
| 1. 350-seat lecture hall | 7. Learning Communities |
| 2. Flexible dining and social area | 8. Simulation Center/
Standardized Patients |
| 3. Café pavilion | 9. Plantation Street garage
(off-site) |
| 4. Flexible function suite | 10. Fitness Center |
| 5. Breakout spaces on lab floors 4-9 | |
| 6. Research laboratories | |



9TH FLOOR:
Pathology, Molecular Medicine,
Quantitative Health Sciences

8TH FLOOR:
Microbiology & Physiological Systems,
Quantitative Health Sciences

7TH FLOOR:
Diabetes and Heart & Vascular
Centers of Excellence, Stem Cell and
Regenerative Medicine, Quantitative
Health Sciences

6TH FLOOR:
Gene Therapy Center,
Neurotherapeutics Institute, Molecular
Medicine, Quantitative Health Sciences

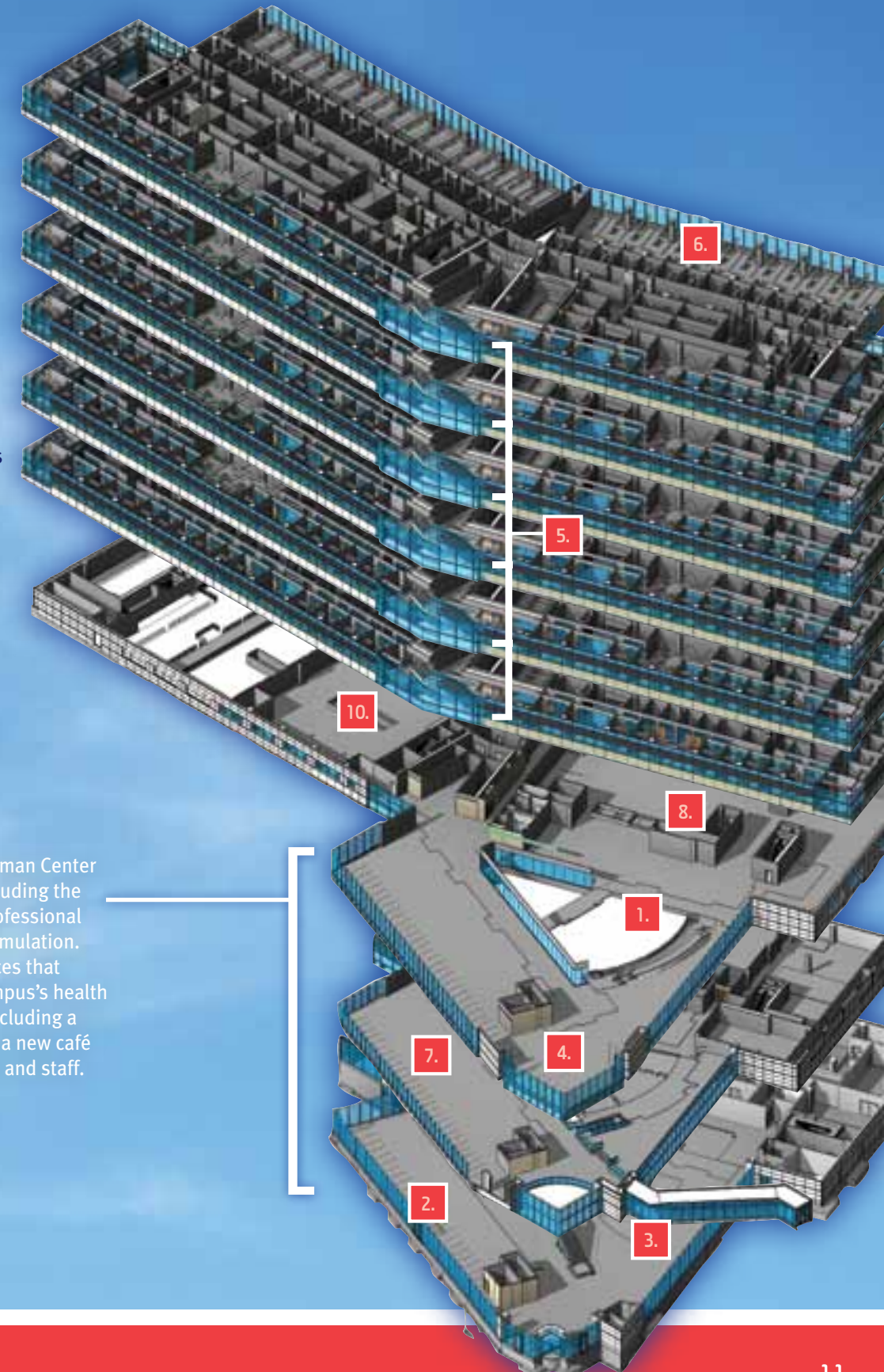
5TH FLOOR:
RNA Therapeutics Institute, Systems
Biology, Bioinformatics and Integrative
Biology, Quantitative Health Sciences

4TH FLOOR:
RNA Therapeutics Institute,
Bioinformatics and Integrative Biology

The first three levels of the Albert Sherman Center contain medical education spaces, including the Learning Communities and the interprofessional Center for Experiential Learning and Simulation. This area also incorporates public spaces that promote social interaction and the campus's health sciences, cultural and civic pursuits, including a 350-seat lecture hall for programs and a new café and fitness center for students, faculty and staff.



Scan to view a playlist of
Albert Sherman Center videos.
or visit www.umassmed.edu/ASCvideos



By the numbers

- 1,900,000** feet of telecom data cable installed
- 512,000** square feet of building
- 250,000** gallons of rainwater collected from the roof each year for use at the power plant
- 20,000** cubic yards of rock blasted at the site for foundations and footings
- 8,175** yards of concrete poured for foundations and footings
- 6,664** steel beams and columns erected for the structure
- 1,775** panels of glass, aluminum, terra cotta and granite covering the exterior
- 1,729** people who worked on the site over 32 months
- 1,411** cars that can park in the Plantation Street garage
- 1,167** sections of precast concrete assembled to build the Plantation Street garage
- 1,100** people who will work or study in the building on a typical day
- 837** tons of steel rebar used for strengthening the concrete
- 743** cement mixer truck trips needed to pour the concrete for the foundations
- 360** miles of telecom data cable if stretched end to end
- 125** architects and engineers who designed the project
- 100** miles of rebar in the concrete if laid end to end
- 95** percent of steel in the building made from recycled content
- 32** months from construction start to certificate of occupancy
- 7.5** megawatts of power from new jet-powered turbine generator at the power plant



and using computational capabilities to make biologic predictions and target lab-bench experimentation, is the science of bioinformatics. “We routinely deal with terabytes of data, and computational questions that can take several days to generate an answer,” said Zhiping Weng, PhD, professor of biochemistry & molecular pharmacology and director of the Program in Bioinformatics and Integrative Biology.

Dr. Weng, and other faculty in the bioinformatics program, have already established close collaborations with several investigators on campus. Moving into the ASC allows Weng to consolidate the program, which is now dispersed across campus, into one location and adjacent to many of the colleagues bioinformatics faculty work with daily. “The frequency of collaboration scales directly with physical proximity. You really need face-time to collaborate effectively,” Weng said. “Moving to the Sherman Center is so exciting. If you put smart people next to each other, miracles will happen.”

Capturing and analyzing data at the level of entire populations can also create important discoveries that ultimately drive basic science questions and improve clinical care. This is the work of faculty in the Department of Quantitative Health Sciences, who will also move into the ASC and work closely with basic and clinical investigators.

“Think about tobacco. The fact that smoking is harmful was not discovered in the lab. It was discovered by population science,” said Catarina Kiefe, MD, PhD, the *Melvin S. and Sandra L. Cutler Chair*

“Moving to the Sherman Center is so exciting. If you put smart people next to each other, miracles will happen.”

— Zhiping Weng, PhD

in *Biomedical Research*, chair and professor of quantitative health sciences and professor of medicine. “Then, once it was shown to be harmful, basic scientists began to look for the mechanisms. There was no reason to investigate the mechanisms before.”

Dr. Kiefe’s department seeks to improve human health by identifying problems through population research, then transforming health care delivery to address those problems so that known benefits reach all potential patients. In that work, there are many opportunities to collaborate with basic and clinical scientists, she said.

For example, faculty in Kiefe’s department are currently working on a major study of patients who suffer heart attacks and other serious cardiac conditions that require hospitalization. The goal is to analyze how outcomes differ across populations and locations, then propose methods to adapt clinical systems so that all patients receive the most relevant and beneficial care.

In addition to interviewing patients and tracking their medical records, the study team collects blood samples, which are then made available to researchers who study the activity of regulatory molecules known as microRNAs, or miRNAs. (The first miRNA was discovered in 1993 by Victor Ambros, PhD, the *Silverman Chair in Natural Sciences* and professor of molecular medicine; miRNA are emerging as vitally important to the maintenance of systemic health or the onset of disease.)

“By studying the microRNA profiles, and correlating with the patients’ known clinical profiles and outcomes, we may discover important relationships for cardiovascular disease. And that new knowledge could lead to new diagnostic tools or therapies,” Kiefe said.

A team project

The Albert Sherman Center is part of an integrated \$400-million project that included a major expansion of the campus’s co-generation power plant and the construction of a 1,400-space parking garage off Plantation Street, north of the main campus. Both the power plant and the garage were designed to accommodate the needs of the ASC with extra capacity for future growth.

The ASC was built in partnership with the University of Massachusetts Building Authority (UMBA). “Even before I joined the building authority, I was at the ground breaking for the building because I am a friend of Albie Sherman. So it’s really been inspirational for me to see this building go up in his name,” said Katherine Craven, executive director of the UMBA. “This is an important economic development engine for Central Massachusetts, and perhaps more importantly, it creates an amazing nexus of research and medical care aimed at curing diseases.”


The ASC program was funded in part by a \$90-million grant from the Massachusetts Life Sciences Center, which administers Gov. Deval Patrick’s Life Sciences Initiative, enacted by the Massachusetts Legislature in 2008. (See Last Word, page 28.)

“The Albert Sherman Center was one of the MLSC’s earliest investments, and at \$90 million remains our largest investment to date,” said Susan Windham-Bannister, PhD, president and CEO of the Massachusetts Life Sciences Center. “The advanced therapeutic research that will be housed in this facility will generate promising new treatments as

well as spin out new companies. UMMS is a science pioneer and we are very pleased to advance its work through this investment.”

UMass President Robert L. Caret noted, “This building, and the medical and scientific knowledge that will be nurtured within its walls, will strengthen the University of Massachusetts’ standing as a global center of research and education excellence. We are very excited to see how these breakthroughs will touch and save lives. This is a great example of how an investment in life sciences helps to drive our state’s innovation-based economy.”

The first lab groups began moving into the Albert Sherman Center on Monday, Jan. 14. Others followed daily, and it will take nearly five months for all the research and educational programs to fully move in.

“The planners, architects, engineers and builders have done their impressive work,” Chancellor Collins said. “Now it’s time for this school’s community to do what it does best—advance biomedical research, education and clinical care for the benefit of all.” 

Room to grow

Learning communities establish roots in the Albert Sherman Center

When a handful of medical students and faculty members began to advocate for the incorporation of learning communities in the School of Medicine curriculum way back near the beginning of a decade-long redesign process, not much thought was given to what kind of space these communities might someday occupy. These advocates just wanted to make sure that learning communities as a vital part of the medical education process were given a chance. Now, with the opening of the Albert Sherman Center (ASC) in January, the learning communities will come into their own in beautiful, light-filled spaces where all students can learn, teach, relax and recharge.

Informally established in 2008 and formally launched with the new Learner-centered Integrated Curriculum (LInC) in 2010, the five learning communities have become the foundation for both medical student life and the curriculum. They are designed to promote curricular continuity, foster cross-class interactions among students and to strengthen student-mentor relationships. At the beginning of their first year, students are randomly assigned to one of five houses, each of which has about 100 members total, with 25 students from each of the class years. The makeup of the houses is intended to facilitate peer-to-peer networking and teaching, with students in their third and fourth years sharing insights with the first- and

second-year students, in a model that mimics how teams of physicians interact professionally. The foundational courses Physical Diagnosis I & II and Doctoring & Clinical Skills are based in the learning communities, which allows mentors to interact with students on a regular basis.

The new learning community suites in the ASC—clustered together across two floors—each include three small group meeting rooms with the flexibility to accommodate different courses' learning needs; a kitchen/lounge area where students can hold social functions or just gather to relax and grab a bite to eat; and an office area that brings mentors into the heart of the learning communities.

These spaces are blank canvases now, much like the idea of what the School of Medicine learning communities might be in 2005, when Michael Ennis, MD, attended a conference in Iowa with medical students Bharath Nath (MD/PhD '11) and Lara Antkowiak (MD '06). The conference was presented by representatives of medical schools that had already established learning communities and the UMMS delegation wanted to find out if the idea was a good fit for the School of Medicine, which was in the early stages of redesigning the curriculum to be competency based. From the moment they got back, Dr. Ennis, Nath and Antkowiak were

By Ellie Castano



“total fanatics about learning communities,” said Ennis, who is associate professor of family medicine & community health and co-director of the learning communities.

The students were so excited about the prospect of having learning communities that they worked with the school to launch the student community as a first step, while the curricular components were under development. This first phase of the learning communities was established in 2008, with naming of the houses after neighborhoods in Worcester: Blackstone, Burncoat, Kelley, Quinsigamond and Tatnuck. The full implementation of the learning community curriculum followed two years later when LInC was launched. The students wrote their own constitution and created their own governing body, which includes an elected student advisory board with two co-chairs. In his role as co-director of the learning communities, Ennis serves as a liaison between the students and the School of Medicine leadership. He said that the learning communities really act independently, from planning activities to balancing their budgets.

“I am often struck by what the students have accomplished in the learning communities. I don’t think I could have done this while I was a medical student,” Ennis said.

Since they were formally launched in 2010, the learning communities have not had permanent homes, which has made meeting and socializing as a group more challenging. While small group learning has been part of the curriculum for a long time, building dedicated space within the learning communities will promote integration of the community elements with curricular initiatives. Previously, each of the five communities was assigned unoccupied space beside the amphitheaters in the Medical School Building, but those spaces were not designed to accommodate the communities’ needs.


The five learning community suites are located on the second and third floors of the ASC, adjacent to the fitness center and the interprofessional Center for Experiential Learning and Simulation, as well as a learning space for the Graduate School of Nursing. Nearby is an auditorium that

can accommodate a larger group than any existing space on campus can. Technology will link the new learning spaces in the ASC with the recently renovated spaces in the Medical School Building, including the Integrated Teaching and Learning Center and the state-of-the-art anatomy labs.

“Until now we had virtual learning communities that were built on relationships. Now we have the physical space in which to continue to grow,” said Senior Associate Dean for Educational Affairs Michele Pugnaire, MD, professor of family medicine & community health. “It was worth the wait. When it came time to design the space, we knew what we needed.”

David Hatem, MD, associate professor of medicine and one of the learning community co-directors, points to the proximity of the learning community suites to the clinical skills suite as one of the great benefits of being in the ASC. “The learning communities are so intimately tied to teaching students their clinical skills. Having these two spaces so close together will foster true integration. And not having to travel to another site, as students currently have to do, is really critical.”

As the students settle into their new spaces over the next few weeks and months, they will begin to make the suites their own. “My hope is that each learning community will add its own personality to the new spaces,” said Tom Akie, an MD/PhD candidate who is one of two student co-chairs of the Learning Communities Student Advisory Board. “The room provides a space for students to express what they think their learning community should represent. For some this might mean displaying student artwork, for others it might mean a library of textbooks, and for others it might mean buying an Xbox to use as a release from studying.”

The experience of being part of learning communities has already been transformative for students. It has helped them build trusting relationships with mentors and teachers; it has enabled them to connect with fellow students they might otherwise never have known; it has encouraged them to work and play in teams; and it has made them feel at home on campus. Now that they’ll have a permanent home in the ASC, the learning communities have the room they need to grow into their full potential. 



“Until now we had virtual learning communities that were built on relationships. Now we have the physical space in which to continue to grow.”

— Michele P. Pugnaire, MD

GSN embraces learning community concept

When Graduate School of Nursing School (GSN) students move to the Albert Sherman Center this spring, they will find, in addition to traditional classrooms and offices, a welcoming new space dubbed the GSN learning community.

This area is identical to, and surrounded by, the spaces for School of Medicine learning communities. But while the SOM’s learning communities distribute students from each of the four years of study across five groups, the GSN learning community will be a singular hub for all students enrolled in the various GSN programs. From newly licensed registered nurses in the Graduate Entry Pathway, to highly experienced nursing professionals who are pursuing the Doctor of Nursing Practice and PhD in Nursing degrees, GSN students at all levels of their education and careers will be able to come together in an informal, open venue that encourages them to compare notes and share challenges and successes related to their educational experiences.

The learning community concept is admittedly still evolving in graduate nursing education, but academic nursing leaders embrace its value. “The learning community model sets the stage for how health care providers will not only learn at school, but how they will work together in the future,” said Paulette Seymour Route, PhD, dean of the GSN. “We expect that all nursing students and faculty will use the space.”

More than a place to call home, the GSN learning community affords nursing students immediate proximity to the School of Medicine learning communities and the interprofessional Center for Experiential Learning and Simulation that both SOM and GSN students will use throughout their training. Learning and working side by side in the ASC will create endless opportunities for collaboration and camaraderie. (See story, page 18.)

“Physical space alone is just space, but at an institution as committed to interprofessional learning as ours, dedicated facilities for learning communities will create an environment where understanding and relationships between different disciplines can develop and flourish,” Dr. Seymour Route concluded.



Clockwise starting from top: MD/PhD student Brian Quattrochi; Robert Mayer, RN, GEP '13; and Doctor of Nurse Practitioner student Molly Rivest, RN.



Learning with and from one another

ASC enhances interprofessional education among three schools

Research shows that patients fare better when they receive care from teams of health care professionals who work together, communicate effectively, and clearly understand and respect each others' roles. Interprofessional education is an important means to this end, preparing health care providers in different disciplines to work together as a team with a common purpose, commitment and mutual respect.

UMass Medical School has long embraced interprofessional education for its medical and graduate nursing students. Now, the Albert Sherman Center will become a central destination for the growing array of opportunities for students of the School of Medicine and Graduate School of Nursing—and even Graduate School of Biomedical Sciences—to learn with and from one another.

The ASC will facilitate the many formal interprofessional education activities that are already incorporated into curricula for medical students, residents and graduate nursing students. These include population health clerkships that are required for School of Medicine and GSN Graduate Entry Pathway students; mock drills for residents and nurse practitioners; and optional enrichment electives that are open to all. Those involving simulation technology and standardized patients will be conducted at the centralized and expanded interprofessional Center for Experiential Learning and Simulation, which can now simultaneously accommodate diverse student groups. (See story, page 20 to learn more about iCELS.)

"We are ahead of the curve with interprofessional education," said Paulette Seymour Route, PhD, dean of the GSN and professor of nursing. Along with Michael Kneeland, MD, associate professor of family medicine & community health, associate dean

for allied health and interim dean for continuing medical education, she is leading UMMS efforts as a partner in a three-year, \$225,000 grant from Partners Investing in Nursing's Future, a national initiative of the Robert Wood Johnson Foundation to improve health care by advancing interprofessional education. "Team-based care is recognized as the foundation for safe patient care," said Dr. Seymour Route. "Collaboration, communication and mutual understanding of the roles and contributions of all health care professionals is key to improving the health of those we serve."

But interprofessional education is not just for clinicians. GSBS students will also enjoy more opportunities to interact with medical and nursing students. "A significant amount of work coming out of Sherman Center laboratories will be related to translational science and clinical research with patients," said GSBS Dean Anthony Carruthers, PhD. "There's going to be a stronger connection among research scientists and clinical scientists on diseases they are targeting."


MD/PhD student Brian Quattrochi, who is currently conducting his PhD dissertation research in the laboratory of Brian Lewis, PhD, associate professor of molecular medicine, before completing his final two years of medical school, agrees. With added perspective as a former student member of the Three Schools Committee, Quattrochi understands how interprofessional education enhances both career paths, and looks forward to working with GSN as well as fellow SOM and GSBS students.

"As a doctor, I'll learn to work with nurses. As a researcher, I'll always be focused on potential clinical benefits." He cites as an example his current work in identifying and understanding signaling pathways in pancreatic cancer that

could be targeted by drugs. "The Albert Sherman Center is the physical embodiment of the school's philosophy of embracing teamwork."

An interprofessional opportunity not reflected in any curriculum or course description is the informal social interactions that the ASC's expansive common areas will comfortably accommodate. All students, as well as faculty and staff, will be able to join the fitness center on the third floor, and eat lunch in the large cafeteria with seating for hundreds. "Wonderful spaces like the fitness center and café are destinations where people will want to go," said Quattrochi. Although the Lewis lab is not moving from the Lazare Research Building to the ASC, Quattrochi expects to take the short walk between the two buildings often.

So vital to the vision, mission and goals of UMass Medical School is interprofessional education that it is invoked in the strategic plan for the UMMS academic health sciences center goals to "build the workforce of the future," "design an ideal learning environment" and "translate discovery into practice." In a recent column for the *Worcester Telegram & Gazette*, Chancellor Michael F. Collins wrote, "Today, we teach in teams, learn in teams, foster learning communities and emphasize that the care of tomorrow will be provided by many."

"I consider the Sherman Center the Boardwalk and Park Place of educational real estate. Our medical and nursing students will be working together, formally and informally, right across the hall from researchers," said Michele P. Pugnaire, MD, senior associate dean for educational affairs and professor of family medicine & community health. "Just the proximity offers a promise of student interaction that will help them educationally, professionally and socially. It's the best of all worlds." 

"The Albert Sherman Center is the physical embodiment of the school's philosophy of embracing teamwork."

— Brian Quattrochi, MD/PhD student

By Sandra Gray



Expanded simulation center offers room for innovation and collaboration

The authenticity of the new interprofessional Center for Experiential Learning and Simulation (iCELS) goes far beyond the high-tech mannequins and highly trained actors who pose as patients so students can learn in a safe yet realistic environment. Learners will not only benefit from the latest in simulation technology in state-of-the-art facilities on the second and third floors of the Sherman Center, they will also learn in a collaborative environment specifically designed to mimic the way they will work in the future.

“We have a big-tent model that will create a richer experience because of the diversity of learners,” said Michele P. Pugnaire, MD, senior associate dean for educational affairs, professor of family medicine & community health and director of the UMMS Simulation Center. “iCELS will be a place where students can learn together, not just practice together. It will give an authentic experience to future physicians and nurses and researchers. This is how they will work in the real world.”

iCELS brings together five different operations that were once in separate buildings located miles apart: The Simulation Center, the Standardized Patient Program, the Office of Continuing Medical Education, the Graduate School of Nursing’s Clinical Skills Lab and the Department of Surgery’s Surgical Skills Lab. The 22,000-square-foot iCELS, located across the hall from the School of Medicine

and Graduate School of Nursing learning communities, doubles the combined space of the five operations and offers potential for easy collaboration among the groups.

“This is going to be a cultural shift, bringing all groups together and working as a team in one space,” said Melinda Taylor, senior engineer in the Simulation Center.

The center will also bring together many different types of learners—medical and nursing students, but also residents and experienced professionals returning to expand or refresh skills. The space was designed from the beginning with needs of each of the programs in mind, with flexibility built in to accommodate innovation. “The iCELS provides opportunities for us to serve the greater community through expanded certification and training programs, opportunities that just weren’t feasible with multiple small sites,” said Dr. Pugnaire.

The Standardized Patient Program, in which specially trained actors take on the role of patients so students can be tested on clinical and communication skills, is moving from space in the Hoagland-Pincus Center in Shrewsbury that it has occupied since 2004. Where there were once eight exam rooms available for testing, the iCELS has 20 rooms, including four large hybrid rooms, which will allow more space

for both simulation equipment and standardized patients, and groups of learners including nurses, medical students and residents.

“iCELS reflects the continuum of how the high technology environment is changing graduate nursing education,” said GSN Dean Paulette Seymour Route, PhD.

Scheduling of important tests for students will be much easier with the expanded facility. “We have 125 medical students who need to take high-stakes tests at the end of the third year, and it takes 14 days for them to all to circulate through using just eight rooms. Now, we can complete the testing in less than half the time,” said Wendy Gammon, MA, MEd, director of the Standardized Patient Program.

As the only program of its kind in the region, the UMMS Standardized Patient Program also tests medical students from Harvard University, Boston University and Tufts University, as well as nurses from UMass Lowell, University of New Hampshire and Northeastern University, who will now all come to the Sherman Center for testing.

The new facility will also accommodate more hybrid testing scenarios, where a student might start talking to a standardized patient, and then move to a mannequin who speaks with the standardized

patient’s voice, but can replicate or mimic findings consistent with those of a real patient. When these hybrid scenarios happen now, the standardized patients must travel to the Simulation Center, or a moving van must transport the highly calibrated mannequins to Shrewsbury. With iCELS, SimMan, SimBaby, Harvey the cardiopulmonary auscultation simulator and the other high-tech simulation mannequins are a just an elevator ride away.

Expanded on-campus opportunities for collaboration will be facilitated in iCELS, such as continuing education activities. “Once the facility is open, we also plan to offer ‘self-service’ access to certain areas of iCELS for off-hours skills training. This will promote ongoing development of a broad team of simulation users to serve the needs of our academic health sciences center,” said Pugnaire.

An added benefit is the integration of technology that will allow students in the integrated Teaching and Learning Center and the anatomy lab to interact with those in iCELS, expanding the virtual world across buildings. **U**

The interprofessional Center for Experiential Learning and Simulation takes up much of the second and third floors of the Sherman Center and is right across the hallway from the learning communities.

From the Shaw Building to the Sherman Center:

a historian's perspective



Scan this code to download *A History of the University of Massachusetts Medical School: Integrating Primary Care and Biomedical Research, Part 1*, or visit http://escholarship.umassmed.edu/umms_history/1

The Albert Sherman Center, encompassing both biomedical research and clinical education, testifies to the vision and persistence of the early leaders of the University of Massachusetts Medical School. As I learned while writing *A History of the University of Massachusetts Medical School: Integrating Primary Care and Biomedical Research, Part 1*, the school was shaped by two distinct visions of its future. The story of how those visions were reconciled is at the heart of UMass Medical School's history.

In 1962, when Massachusetts chartered its only public medical school, it seemed to be destined to become something known as a community medical school. A community medical school, in contrast to an academic health sciences center, is one dedicated to primary care, one that eschews a serious (and costly) research mission, and one where students rely on hospitals in the community for their training. Such schools have an important role in medical education. Although nothing in the original enabling legislation said so, that was probably the kind of medical school most state legislators in 1962 envisioned for Massachusetts. By 1970, when the school opened, it was clear that this was not the vision our early leaders had for UMass Medical School.

John Lederle, president of the UMass system, and Lamar Soutter, MD, our founding dean, determined

to reconcile two ideals: an affordable medical school for the children of the middle and working classes that would produce family doctors for Massachusetts, and a school that would be at least as academically excellent as the three medical schools located in Boston. As Dean Soutter told his chief sounding board, H. Brownell (Brownie) Wheeler, MD, founding chair of the Department of Surgery, UMass Medical School was much too close to Boston to survive unless it was as good as, or better than, Boston University, Tufts and Harvard. Here he diverged from the opinions of the men and women who held the purse strings. In Soutter's mind, a community medical school stood for something less than first-rate. He would have no part of it.

As his son, Nicholas Soutter, vividly recalled, "If you wanted to get [my father's] hackles up, just suggest that this medical school was going to be anything less than the other major medical schools in the country." In an oral history interview, Maurice Goodman, MD, founding chair of the Department of Physiology and one of the early faculty members, recalled that when he was hired, Soutter's charge to him was, "'to develop a physiology department second to none in the Northeast.' That's the direct quote." Soutter repeatedly used phrases like "second to none" and "first rate." He meant all-

round excellence—primary care and basic research. There was no other way.

Nurturing research was a challenge, however. The trick, as Robert Tranquada, MD, chancellor from 1979 to 1986, told me, was to find money to pay for it. And money from the state was never in ample supply. As faculty moved from their cramped quarters in the old Shaw Building to the new medical sciences building, promising young researchers such as Allan Jacobson, PhD, and Fred Fay, PhD, began to establish a foundation of external funding and significant findings. Problematically, though, few resources were available to hire additional faculty.

The administration did everything it could to help. One important initiative begun through the joint efforts of Soutter and Acting Chancellor R. William Butcher, PhD (Soutter's immediate successor), was the decision to set aside money from the Chancellor's Fund for the Research Council, chaired by Dr. Goodman, to disperse funds for research.

Such initiatives paid to establish technology cores and provide bridge funding for young researchers. Energetic and shrewd recruiting

of promising scientists also was essential. Michael Czech, PhD, recalling his recruitment to become chair of the Department of Biochemistry in 1981, commented, "What I saw here was . . . astounding, based on the availability of tremendous amounts of space, tremendous amounts of resources, and an opportunity to do things in my own research that were either not possible or highly [improbable]" at his previous institution.

The creation of the Graduate School of Biomedical Sciences in 1986 (begun as the Program in Medical Sciences in 1984) added the presence of research assistants and postdocs as well as the vital activity of teaching to the research community here. By the mid-1980s, the availability of rental space in the Massachusetts Biotech Research Park allowed for new spatial configurations to accommodate the research emerging from fields such as molecular biology, a trend epitomized by the creation of the Program in Molecular Medicine in 1990, though surely not limited to it. As other researchers have been attracted to the campus, such as Roger Davis, PhD; Michael Green, MD, PhD; Craig Mello,

PhD; Phil Zamore, PhD; Victor Ambros, PhD; Melissa Moore, PhD; and many others, the need for even more space became apparent.

It is astonishing to realize that little more than a decade has passed since the opening of the Lazare Research Building, another milestone in the growing research presence of UMass Medical School. The LRB once seemed to amply provide for all our future research space needs. Yet, within a few years, it became plain to the Medical School's leadership that we were once again expanding beyond all expectations. With guidance from Chancellor Michael F. Collins and Provost Terence R. Flotte, clinical and basic research have been brought together in translational research initiatives that are themselves a fulfillment of earlier work by clinical scientists.

Combining these enterprises with our long tradition of clinical education in the Sherman Center brings together our two fundamental missions, clinical education and biomedical research.



BY ELLEN MORE, PHD, HEAD OF THE OFFICE OF MEDICAL HISTORY AND ARCHIVES, LAMAR SOUTTER LIBRARY, AND PROFESSOR OF PSYCHIATRY

1. The Shaw Building in 1968, just before UMass Medical School opened.
Photo courtesy of the Department of Special Collections and University Archives, W.E.B. Du Bois Library, University of Massachusetts Amherst.
2. The current Medical School building opened in 1973 followed by the teaching hospital, now UMass Memorial Medical Center, in 1976.
3. When the Aaron Lazare Medical Research Building opened in 2001, it seemed to amply provide for all future research space needs.
4. The 278,000 square-foot Ambulatory Care Center, home to Centers of Excellence in Diabetes, Cardiovascular Medicine, Orthopedics and Cancer, opened in 2010.
5. The Albert Sherman Center is the latest addition to a Worcester campus that has grown in leaps and bounds since the Shaw Building opened in 1968.





As green as it gets

Sherman Center built for efficiency and sustainability

There are sun shades attached to the exterior to deflect heat. The steel at the core was forged from recycled content. A new jet-powered turbine generates electricity more efficiently on campus—these are among many elements of the Albert Sherman Center project that reflect UMass Medical School's commitment to grow in ways that limit the impact on the environment.

"From the beginning of the design process, we asked the team to focus on the efficiency of the building as well as sustainable materials and practices for construction," said John Baker, associate vice chancellor of facilities management, who oversaw the ASC construction project. "This is a complex building with greater energy and operational needs than a typical office building. It was a challenge, but with the Medical School leadership's strong support, we were able to meet that challenge."

The combination of efficient design and advanced technologies integrated in the ASC will result in the facility operating 25 percent more efficiently, consuming 4.1 million fewer kilowatt hours of electricity, and cutting carbon dioxide emissions by 4.5 million pounds annually compared to a similar building of standard design.

By Michael Cohen

For example, on the north side of the building, where there is little direct sunlight, the façade is mostly glass, with long windows designed to allow in as much natural light as possible. On the south side of the building, which receives direct sunlight most of the day, the windows are made of a more reflective glass, and have external baffles (sun shades) designed to block much of the heat from the sun while bouncing light deep into the building. The building's roof is white, and the exterior terracotta lightly colored, so they reflect rather than absorb heat. The result is an exterior envelope of the ASC that helps reduce the demand for electric lighting, heating and cooling of the facility.

The building also has integrated control systems that reduce energy consumption. They include occupancy sensors for lighting, heating and cooling of offices and conference rooms; heat recovery wheels that allow the building to exhaust stale air and draw in fresh air while retaining most of the heat in the building; variable speed fans, with sash sensors, on the fume hoods in the laboratories; daylight harvesting sensors that adjust interior lights based on the available sunlight; and a sophisticated building automation system that monitors the ASC every 15 minutes and adjusts mechanical systems for maximal efficiency.

An important element of the ASC project was the expansion and upgrading of the campus power plant with a high-efficiency, 7.5-megawatt, gas-fired

combustion turbine and an associated heat recovery system for steam generation. The new gas turbine replaces one of the plant's original gas- and oil-fired steam boilers. Since natural gas burns cleaner than oil, and the new jet turbine is highly efficient, the expanded power plant will actually have lower green-house gas emissions, despite its added generating capacity. Furthermore, producing electricity on-site is approximately 30-percent more efficient than using electricity from the regional distribution network, because of the losses that normally occur when electricity travels long distances on distribution lines.

For sustainable building elements, in addition to recycled steel at its core, the wood finishes in the ASC come from certified sustainable forests, carpets and textiles are made from recycled fibers and low-flow plumbing fixtures are used in most areas. Rainwater from the roof and condensate water from the heating and cooling systems are captured and reused by the campus power plant, saving 750,000 gallons of fresh water each year.

"We worked closely to develop a building program that would track the guidelines established by the U.S. Green Building Council," said Shawn McGuinness, AIA, LEED AP, the Medical School's senior architect and project manager who guided the ASC design team. "Sustainability is a community value here, and the new building is a wonderful expression of that."

Clockwise starting from directly above, condensate water from the heating and cooling systems of the Sherman Center is captured and reused by the campus power plant; the integrated control systems, controlled from the utility area on the top floors, reduce energy consumption; on the south side of the building, windows are made of reflective glass and sun shades block much of the heat from the sun while bouncing light into the building.

Power plant expansion

To make sure the lights shine brightly in the Albert Sherman Center, UMass Medical School turned to high-efficiency jet power to expand the output of the campus power plant. A \$47 million project added nearly 14,000 square feet to the turbine hall on the south side of the power plant to accommodate a new 7.5 megawatt, gas-fired combustion turbine and associated equipment that will boost the plant's capacity to generate steam, electricity and chilled water. See video: www.umassmed.edu/ASCvideos

Designing efficiencies into the Sherman Center



From the beginning of the design process for the Albert Sherman Center, energy efficiency and sustainable building practices have been at the forefront. Using guidelines from the U.S. Green Building Council, nearly every aspect of the design and construction process was evaluated. See video:

Scan the code or visit www.umassmed.edu/ASCvideos



Jet turbine lands on campus

The jet turbine that doubled the generating capacity of the power plant made a cross-country journey from its California manufacturing plant. A crane and rigging crew worked carefully, inch by inch, to lift the 57-ton machine off its flat-bed trailer and maneuver it into the new turbine hall that was under construction on the south side of the power plant. See video of its arrival.

www.umassmed.edu/ASCvideos



Building's namesake a champion for UMass Medical School

A stalwart champion for UMass Medical School, Albert "Albie" Sherman made it his life's work to raise the image of the preeminent research and medical education center in Worcester.

Now, in a fitting twist of fate, UMMS and the Massachusetts Legislature are heralding Sherman's accomplishments, with a \$400-million, state-of-the-art research center and educational facility bearing his name.

"It's hard to say just how much this means to me," said Sherman, the former UMMS vice chancellor for university relations credited with more than two decades of service to the institution as a tireless ambassador. "But it truly means a great deal."

"It is a major league thing in my life to have a building named after me; a building in which medical research will be done to help humanity and aspiring doctors will learn their craft," he added.

Sherman, a trained pharmacist, veteran public health advocate and longtime Jewish community leader, began his role at UMMS in 1989. He was responsible for federal and state relations, and served as a governmental liaison. A native Bostonian, he earned a bachelor's degree from the Massachusetts College of Pharmacy and Allied Health Sciences and went on to work for Boston University in development before coming to Worcester.

He has served on numerous local, national and international boards including the Massachusetts Public Health Council, Combined Jewish Philanthropies of Greater Boston, Anti-Defamation League, Massachusetts Society for Medical Research, Greater Boston Association for Retarded Citizens, New England-Israel Chamber of Commerce, the Jewish Community Relations Council of Greater Boston and the Fire Safety Council of Greater Boston.

The proud grandfather of three has spent his life dedicated to others, his wife, Linda said. The couple has two sons, Matthew and Peter, who is engaged to Tali Golan; a daughter, Risa, married to Daniel Katcher; and three grandchildren, William, Nolan and Lucy Katcher.

By Lisa Larson

"It is so overwhelming to him that this building is being named after him," Linda said. "Everything he does, he does because he believes it is the right thing, the decent thing to do. That is how he lives his life."

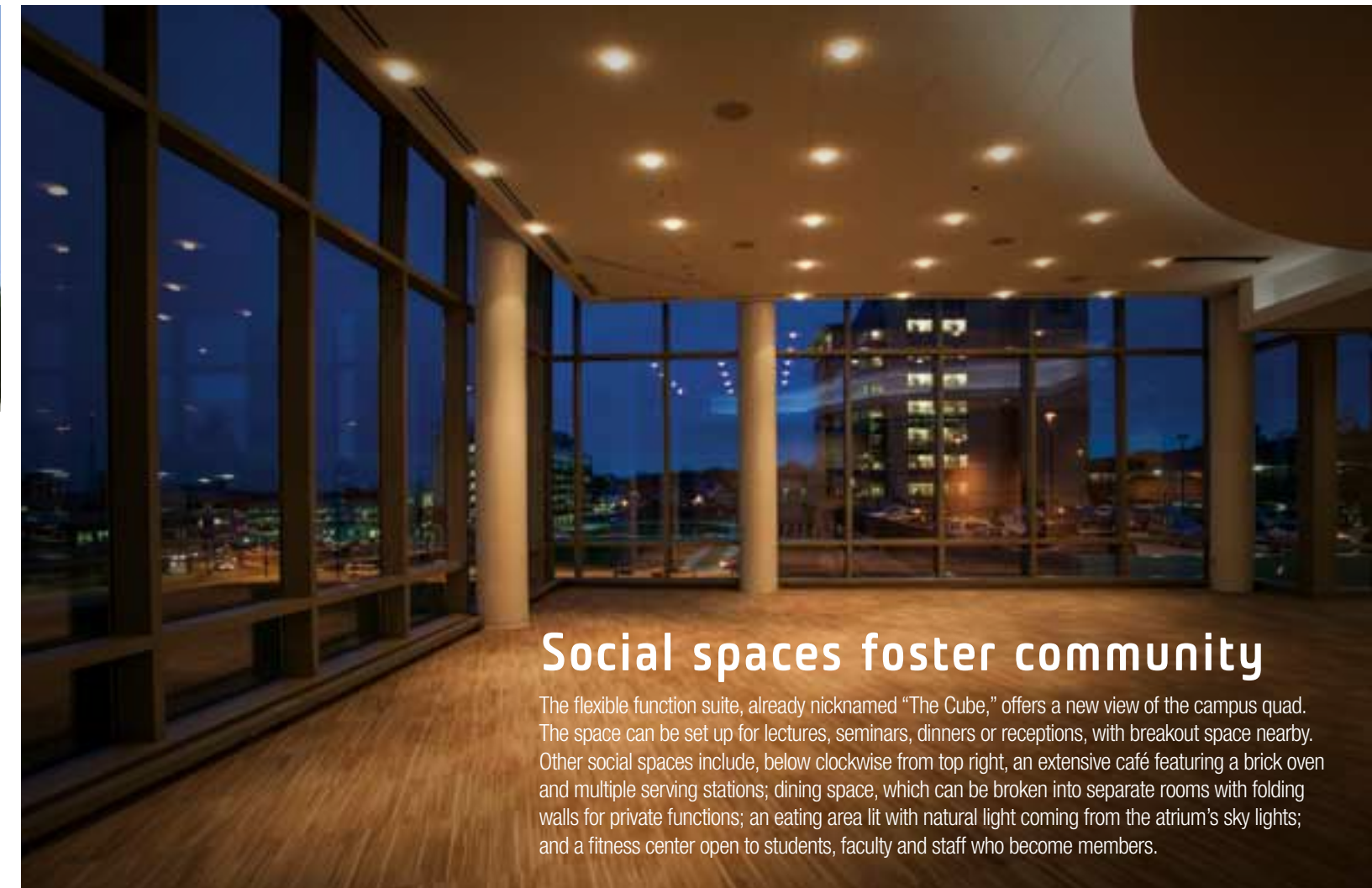
The 512,000-square-foot Albert Sherman Center will expand and unify the UMMS Worcester campus, nearly double its research capacity and support the School of Medicine's new learner-centered curriculum. This interdisciplinary, cutting edge research and education building will foster interaction and collaboration among scientists and promote innovation and

"UMass Medical School is a world-class institution and I have a lot of pride in this building."

— Albert Sherman

synergies across disciplines. The center will attract researchers, physicians, faculty, students and industry partners, enhancing the school's position as a leader in medical research and education.

"UMass Medical School is a world-class institution and I have a lot of pride in this building," Sherman said. "I'm a first-generation American, the son of Ukrainian parents who came here when they were teens. All they wanted was a great education for their children and they certainly provided that opportunity. In their wildest dreams, they, nor I for that matter, could never have envisioned an honor as significant as this. I know they would be proud of me, but even more so of the good that will benefit mankind from having this place."



Social spaces foster community

The flexible function suite, already nicknamed "The Cube," offers a new view of the campus quad. The space can be set up for lectures, seminars, dinners or receptions, with breakout space nearby. Other social spaces include, below clockwise from top right, an extensive café featuring a brick oven and multiple serving stations; dining space, which can be broken into separate rooms with folding walls for private functions; an eating area lit with natural light coming from the atrium's sky lights; and a fitness center open to students, faculty and staff who become members.



By Gov. Deval L. Patrick & Craig C. Mello, PhD

When we had the pleasure of sharing the podium in Worcester’s DCU Center in January 2007 as part of UMass Medical School’s grand Nobel Prize celebration, we were also sharing a special moment in the history of the commonwealth and its great public university.

The University of Massachusetts was already laying the groundwork for new investments in research, resources and faculty that would begin to take advantage of the homegrown, world-changing research exemplified by the discovery of the mechanism of RNA interference. As scientifically important as the discovery of RNA interference has proven to be with the development of RNA-based treatments in the experimental pipeline for a range of diseases, it is only part of the larger story of what support for the biomedical sciences can do here in Massachusetts and across the country. At the time of the Nobel celebration in Worcester, leaders across the commonwealth were exchanging ideas on how to target capital investments in the life sciences to better capitalize on our unique resources and leadership in the biotech sector.

Shortly after the UMass Marching Band serenaded a very happy crowd out of the DCU, the University convened a Life Sciences Task Force, chaired by the Medical School’s new chancellor, Michael F. Collins, to get to work on recommendations that would grow opportunity and progress statewide. In just a few months, these recommendations helped to shape a life sciences bill that became law less than a year later.

For scientific research, a year is very fast. For legislation, it’s more like the speed of light.

The 10-year, \$1 billion investment package was the result of unprecedented collaboration between

government, academia, life sciences industry leaders and patient advocacy groups. The Life Sciences Initiative works to build on the great concentration of life sciences talent, resources and vision that we find here at home in Massachusetts. We are well on our way to finding new cures for diseases, creating new jobs and positioning ourselves for long-term economic growth.

A key measure in the Massachusetts Life Sciences Initiative provided support for the construction of the new Albert Sherman Center at UMass Medical School—a gleaming beacon for life sciences education, research and development for a new generation of scientists and caregivers. The building is big, beautiful, imaginatively designed and ready for occupancy on time and within budget, and as citizens of the commonwealth, we are together deeply proud of what it represents and what it will contain.

In those early discussions about priorities, we agreed that investments in tomorrow’s discoveries and technologies were equally as important as support for current work. In that spirit, and working with scientific and educational leadership, the University’s Advanced Therapeutics Cluster was born, where research and development in RNA biology, gene therapy and regenerative medicine will link scientists across disciplines and departments to accelerate lifesaving advances and, ultimately, new cures for diseases like cancer, diabetes, Alzheimer’s, ALS and cystic fibrosis.

Just six years from the start of our statewide life sciences journey, we are now poised to again change the scientific world through the hard work, new ideas and intellectual horsepower of the scientists who now spend days, and already some late nights, in the Albert Sherman Center. We are pleased, but not surprised, at how rapidly, effectively and expansively the life sciences community in the region has put these pieces of progress together and we know that the success of these endeavors will benefit the commonwealth for generations to come.



GOV. DEVAL L. PATRICK WAS ELECTED TO HIS SECOND TERM AS GOVERNOR IN 2010. SIGNATURE INITIATIVES SUCH AS HIS LANDMARK 10-YEAR, \$1 BILLION PROGRAM TO PROMOTE THE STATE’S LIFE SCIENCES INDUSTRY HAVE POSITIONED THE STATE AS A GLOBAL LEADER IN BIOTECH, BIO PHARMACEUTICALS AND INFORMATION TECHNOLOGY, AND AS A NATIONAL LEADER IN CLEAN ENERGY.



CRAIG C. MELLO, PHD, HOWARD HUGHES MEDICAL INSTITUTE INVESTIGATOR, BLAIS UNIVERSITY CHAIR IN MOLECULAR MEDICINE AND DISTINGUISHED PROFESSOR OF MOLECULAR MEDICINE AND CELL & DEVELOPMENTAL BIOLOGY, WON THE 2006 NOBEL PRIZE IN PHYSIOLOGY OR MEDICINE.



The celebration in January 2007 of Craig C. Mello, PhD, winning the Nobel Prize in Physiology or Medicine served as the catalyst for a \$10 billion investment in the life sciences by the state, including \$90 million to support the construction of the Albert Sherman Center.



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