

CAP TODAY

COLLEGE OF AMERICAN PATHOLOGISTS

Karen Titus

On the one hand, there's nothing extraordinary about the recently renovated grossing and histology facilities at Columbia-Presbyterian Medical Center, New York.

"It's no big deal—it's just a gross room," says assistant professor

Nasar Qureshi, MD, PhD, who oversaw the project. "We haven't done any earth-shattering innovation." Indeed, a casual visitor to the space might duly note the room's eight grossing stations, accessioning area, storage spaces—to name just a few of the many standard accoutrements found in any lab—and

wonder, What's the fuss?

On the other hand, there's nothing ordinary about the new laboratory, either. Nearly every detail, from the aerators on the faucets to the gleaming stainless steel surfaces, was selected with an attention to detail normally lavished only on upscale home

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Efficiency was the name of the game in designing the custom, stainless-steel workstations. Among the many elements packed into each 5-ft-wide space are a flat-paneled computer screen and sealed keyboard, both of which can rotate 360 degrees and be tacked to the side when not in use; slide-out writing desk; adjustable photo stand with digital and video

camera; a flip drawer under the sink; storage shelves; and trays slanted at 45 degrees for holding paperwork. Dr. Qureshi finds the latter aspect especially appealing. "In a normal gross station there's no place for the paperwork," he says. "It either gets scattered about or lies right on your work area and gets all bloody."



In its place

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renovations; many key elements were custom designed. Ventilation and air-conditioning services were revamped, and enough data outlets have been installed to accommodate future data needs. All that, combined with personnel shifts and rerouted workflows, has created a laboratory that stands out for its efficiency, flexibility, and sheer aesthetic value.

Perhaps even more impressive, the new laboratory, while uniquely Columbia-Presbyterian's, is well within the realm of what other labs can create for themselves. "What we've focused on are elements that are integral parts of every pathology department, and put them into a highly functional design," says Dr. Qureshi. "It's something that others certainly can follow."

In fact, they might want to. The Columbia-Presbyterian redesign successfully tackles many of the

challenges facing anatomic pathology laboratories these days. Among them: meeting the demand for faster turnaround times despite increasing workloads; working efficiently within tight budgets and labor shortages; and balancing the constraints of aging infrastructure with the need to ensure employee safety and keep abreast of new technology.

How did Columbia-Presbyterian do it? And how can other laboratories follow in its footsteps?

The short, easy—and somewhat facetious—answer is "money." Lots of it.

"The overall dollar amount for doing this was astronomical," says Michael Shelanski, MD, PhD, De-lafield professor and chairman of the Department of Pathology at Columbia-Presbyterian. "This lab cost us about \$500 a square foot," he says, though he's quick to point out that much of the cost went to retrofitting the 1920s-era building with a

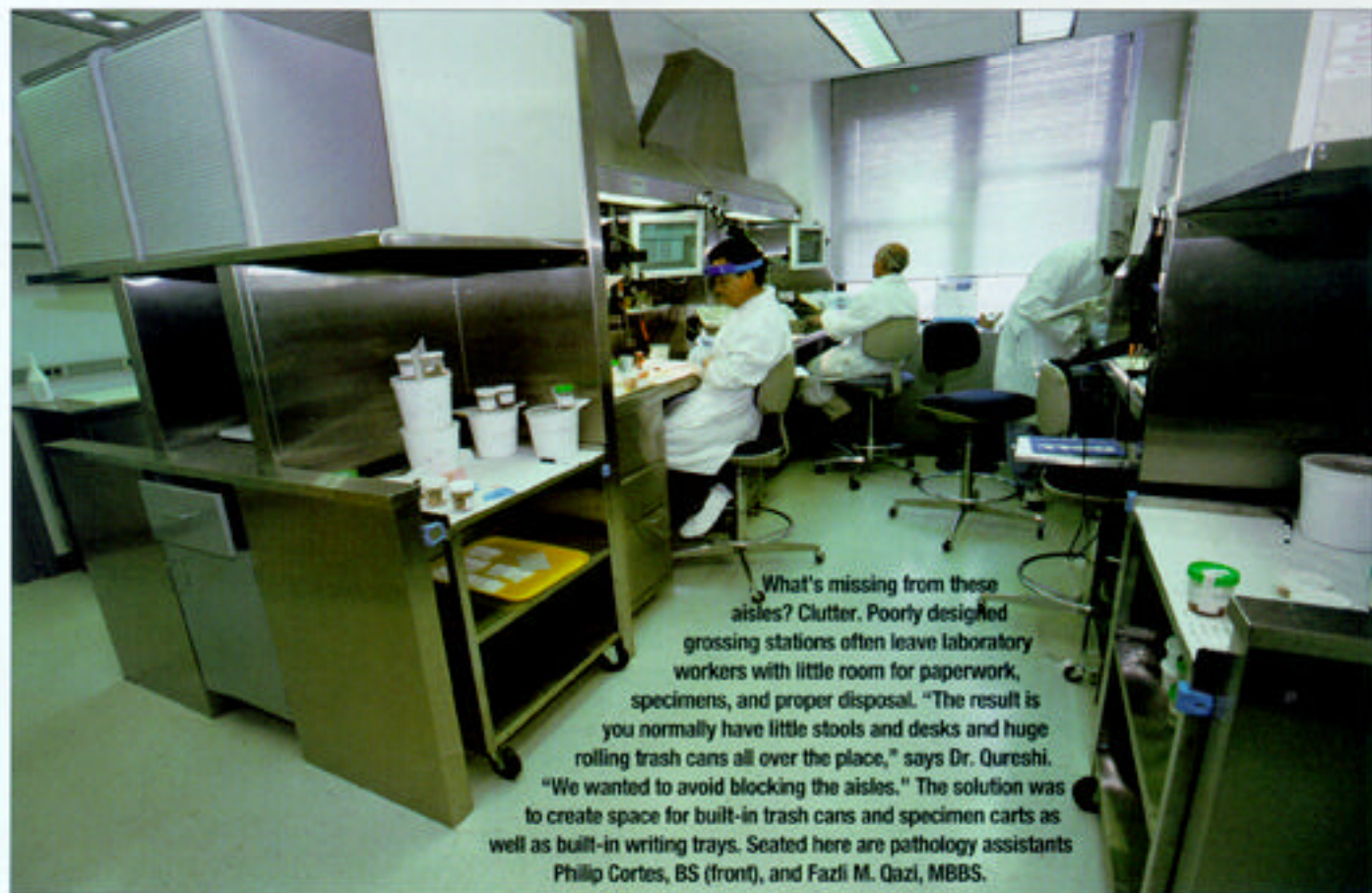
modern ventilation and AC system.

But the more accurate answer is manifold. Like any large-scale renovation, the one at Columbia-Presbyterian started with a vision, one borne of a niggling sense of dissatisfaction with the current setup.

"I had been unhappy with the lab since coming here in 1987—with the ventilation, with the lighting, everything about the gross room," recalls Dr. Shelanski. "While it was far from the worst gross room I'd ever seen, I did not believe it met modern standards for handling tissue and protecting personnel."

For close to a dozen years and through changing administrations, Dr. Shelanski says he worked to persuade his institution's leaders to part with admittedly scarce dollars and plunge ahead with a renovation. What finally spurred the OK, he says, were his arguments for a safer work environment.

"Many institutions, our own included, measure only average expo-



What's missing from these aisles? Clutter. Poorly designed grossing stations often leave laboratory workers with little room for paperwork, specimens, and proper disposal. "The result is you normally have little stools and desks and huge rolling trash cans all over the place," says Dr. Qureshi. "We wanted to avoid blocking the aisles." The solution was to create space for built-in trash cans and specimen carts as well as built-in writing trays. Seated here are pathology assistants Philip Cortes, BS (front), and Fazli M. Gazi, MBBS.

tures in a room," he says, even though the Environmental Protection Agency and the Occupational Safety and Health Administration will examine instantaneous and brief exposures for individuals performing special functions. Thus, many places that think they meet environmental standards do not, and, if inspected, leave themselves open to enormous citations,

“There’s a false sense of security at many labs—there certainly was here.”

Michael Shelanski, MD, PhD

Dr. Shelanski cautions. “There’s a false sense of security at many labs—there certainly was here.”

But once the institution agreed to the renovation, “To their credit, they had no qualms about doing it right,” Dr. Shelanski says.

Doing it right meant a number of different things to those involved. From Dr. Shelanski’s perspective, that included “not being penny-wise and pound-foolish.” It also meant bringing in someone to oversee the innumerable details involved in creating and carrying out the design.

Enter Dr. Qureshi. “When I came on board [approximately 1½ years ago] they were already starting to plan this,” he says. “And I took it on as one of my main responsibilities.”

He stepped into a complex scenario. Like most academic institutions, Columbia-Presbyterian had its share of fragmentation, with various academic departments within the medical school being served by separate pathology laboratories—five histology labs and five grossing areas at one point. At the onset of the renovation, Dr. Qureshi reports, the institution had funneled the separate sites into three labs; two histology labs and one immunohistochemistry

lab were merged a year ago, and another histology lab was renovated. The next step was to merge the remaining two gross laboratories into one lab.

The move would increase the total number of specimens processed in the combined area by some 25 percent and increase the number of grossing personnel from four to seven, representing residents, fellows, and pathology assistants from a variety of subspecialties. At the same time, the institution was expanding its teaching activities, which included training and supervising PA students as well as training new residents in gross pathology and overseeing senior medical students during their pathology internships. Accommodating the added personnel, not to mention the attendant equipment and storage needs, in a smaller space—with no drop in quality of work—would not be easy.

Likewise, Dr. Qureshi and his colleagues wanted to keep pace with changing technology, particularly the voice-activated dictation system the department uses.

“We made the most of the old lab, but it really wasn’t designed for any technology,” says Joann Di Pippo, MPH, manager of surgical pathology at Columbia-Presbyterian. Though the department was using voice-activated technology, the outdated setup meant “We had large monitors and CPUs occupying crowded workstations, sitting on top of canopies where they didn’t belong.”

“We were a department ready to move forward,” she adds. “We were advanced as far as technology goes, but our space wasn’t matching the pace we were moving at.”

To make it all add up, Dr. Qureshi and his colleagues, including department administrator Carl Reyes, began the painstaking process of mapping out every inch of space and how best to use it.

No laboratory renovation can succeed without this step, says Dr. Shelanski. “The amount of time you spend on this, even if it delays your project by months, is your biggest payoff. You need to spend a great deal of time thinking through everything that goes on in the lab, not only the way you do it now, but the way you want to do things in the future,” he says. “You need to figure out the space you need to do those things, discuss it with the architect, and make sure everything is accounted for.”

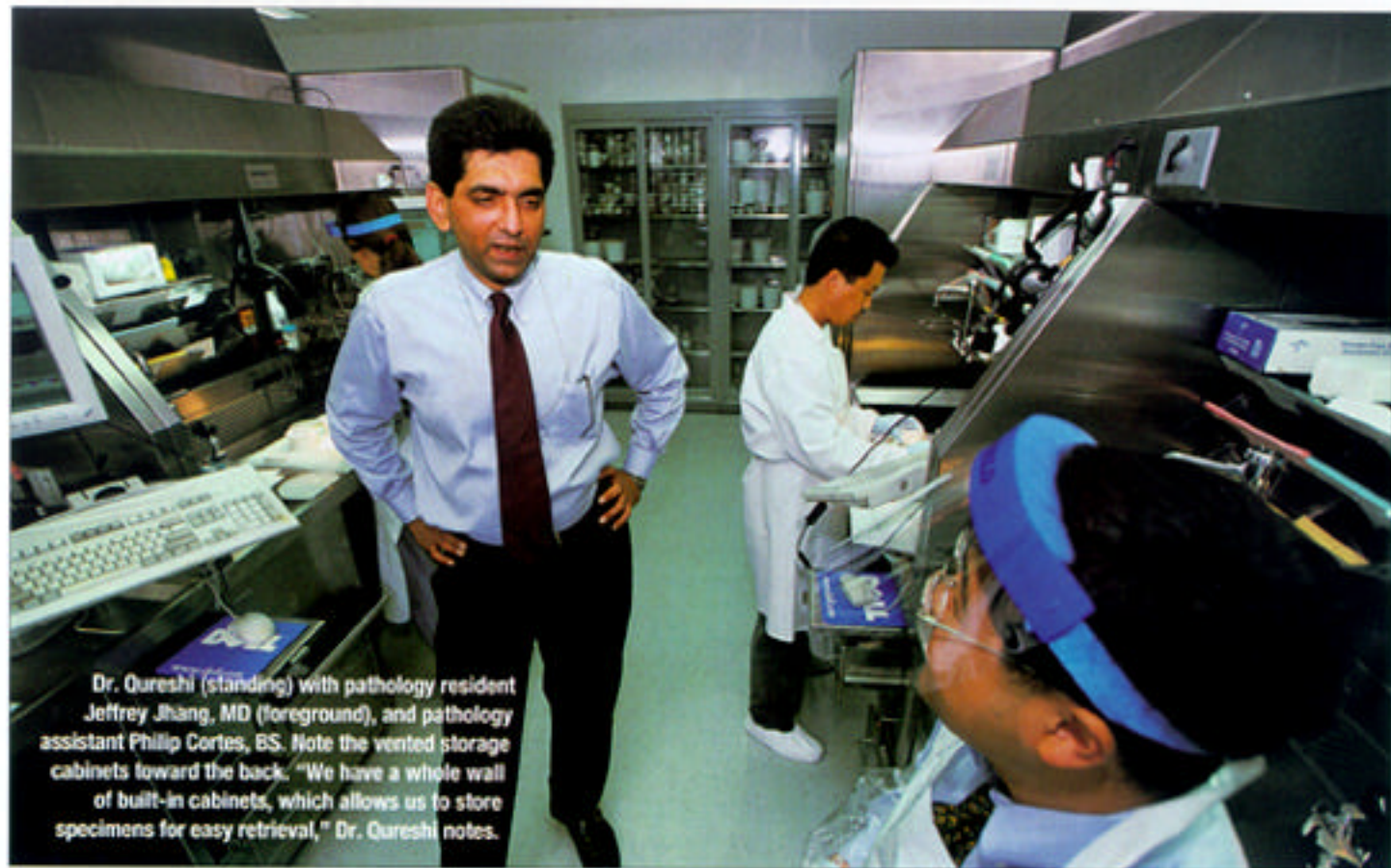
“The worst thing you can do,” he continues, “is to let an architect come up with a plan without your detailed input. That’s a recipe for disaster.”

Certainly there was no lack of detail in the design Dr. Qureshi and his colleagues ultimately came up with. “We considered every move you make in the lab,” he says. “The functionality of every foot if not inch of space was important.”

Among the primary needs, he says, was improving the photogra-



The Hobart band saw, which is set apart from the rest of the laboratory to minimize noise and odor, features a custom exhaust and HEPA filter. “We built the ventilation ducts right over the plate of the saw, with a high-flow suction,” Dr. Qureshi says. “This cuts down on the bone dust, which is an environmental health concern.”



Dr. Qureshi (standing) with pathology resident Jeffrey Jhang, MD (foreground), and pathology assistant Philip Cortes, BS. Note the vented storage cabinets toward the back. "We have a whole wall of built-in cabinets, which allows us to store specimens for easy retrieval," Dr. Qureshi notes.

phy process. "Like any grossing lab, we wanted to be able to photograph the most important specimens," he explains. "That usually takes the form of having a photography stand somewhere in the corner of the room, where you have to physically move all your specimens to that photo stand, take the photograph, and then take the specimens back to where you're working. It's messy and cumbersome."

To streamline the process, Dr. Qureshi insisted on placing digital cameras at every grossing station, enabling users to label and store images on the spot. Ultimately, he says, the plan is to have a separate server dedicated to storing these high-resolution gross images. "That will give us a very strong, accessible database of digital photographs of all gross specimens, to be used either for clinical purposes or for research," he says.

Another goal was to manage the laboratory's speech recognition-based system for gross dictations.

Lab personnel make their dictations directly into the department's main software, which meant having computers and monitors at every station. "But they were in the way, so we had to figure out a better way to configure them," Dr. Qureshi says.

Specimen triage activities were targeted as well. Dr. Qureshi and his colleagues decided to create a new position, that of accessioning supervisor, who, along with several other employees, oversees everything from mislabeled and unlabeled specimens to inadequate patient information. "Those problems are solved before the specimen ever gets to us," says Dr. Qureshi. "Our turnaround time on these types of cases has gone down tremendously." Moreover, he adds, one position is now dedicated to handling all billing, coding, and insurance information. All these employees work in an office located within the accessioning department, creating, as Dr. Qureshi puts it, "a troubleshooting and billing section right at the front

end." The room is separated from the rest of the lab by walls, ensuring quiet for those working at the grossing stations, but is easily accessible via a sliding window as well as a door.

Defining and refining the laboratory space was only half the battle. Once Dr. Qureshi and his colleagues determined what they needed, they then had to find the items—a task that proved to be more arduous than anyone expected.

Although the laboratory worked closely with Mopec Inc., the Detroit-based supplier of pathology and histology equipment, much of what eventually found its way into the laboratory came from nonlaboratory—and in many cases nonmedical—suppliers. Why? Pick a reason. No prefabricated grossing station was available that would accommodate the flat-paneled computer monitors and keyboards needed for voice dictation. Nor could such stations pro-

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Senior resident Rita Shakhovich, MD, works at one of the grossing station terminals. Behind her are laboratory assistant Melvin Acevedo (in shorts) and Dr. Qureshi. "To fit eight grossing stations in a room this size, we had to place them side-by-side rather than around the perimeter of the room," Dr. Qureshi says.

In its place

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vide users with an appropriate amount of storage or work space without relying on external—and unwieldy—tables, bins, and carts. Standard keyboards could not be cleaned easily after repeated contact with bloodied gloves. Commercially available grossing stations did not permit easy specimen disposal. Medical photo stands did not feature a flexible “arm” to permit broad camera movement; ditto for the staple keyboard arms. Taps typically were placed too high over the sink, causing backsplashes. Most stations had inadequate writing space, leading to scattered paperwork. Regular gooseneck lamps could not withstand repeated adjustments.

“We wanted to have everything that one uses while working at a grossing station within easy reach. And the gross stations on the market are simply not designed for our needs,” says Dr. Qureshi. “They’re not designed for appropriate workflow, and though they may have a lot of bells and whistles, that’s all they are: bells and whistles.”

To get what he wanted, Dr. Qureshi had to expand his search. “God bless the Internet,” he jokes. “A lot of times what happened was, when the architect could not visualize what we were asking for, I just went on the Internet and pulled up what I wanted.”

The next step was to figure out how the pieces would fit together in a custom gross station. “After the final design, they built us a mock, wooden gross station to size, and then we had various people ‘work’ at it to see if everything was placed right,” Dr. Qureshi says. “I think it must be, because I haven’t heard any complaints yet.”

Highlights of the new laboratory include flip drawers under the sinks to accommodate waste disposal; flexible arms for the photo stands and keyboards;

lowered taps; specimen carts at each station; vented cabinets; rolling shelves; custom ventilation ducts for the bone saw; sealed industrial keyboards; pull-out writing desks; built-in trash cans; and vertical storage shelves.

It’s also remarkably appealing, given that most gross rooms “tend to become very morbid-looking after awhile,” Dr. Qureshi says. The room has been softened with rounded edges and powder blue cabinets, which subdue the omnipresent stainless steel. “It’s very aesthetically pleasing,” Dr. Qureshi observes.

“I basically had a wish list, and I did not think I would get what was on it,” he continues. “But I did, and we are very, very pleased with it.”

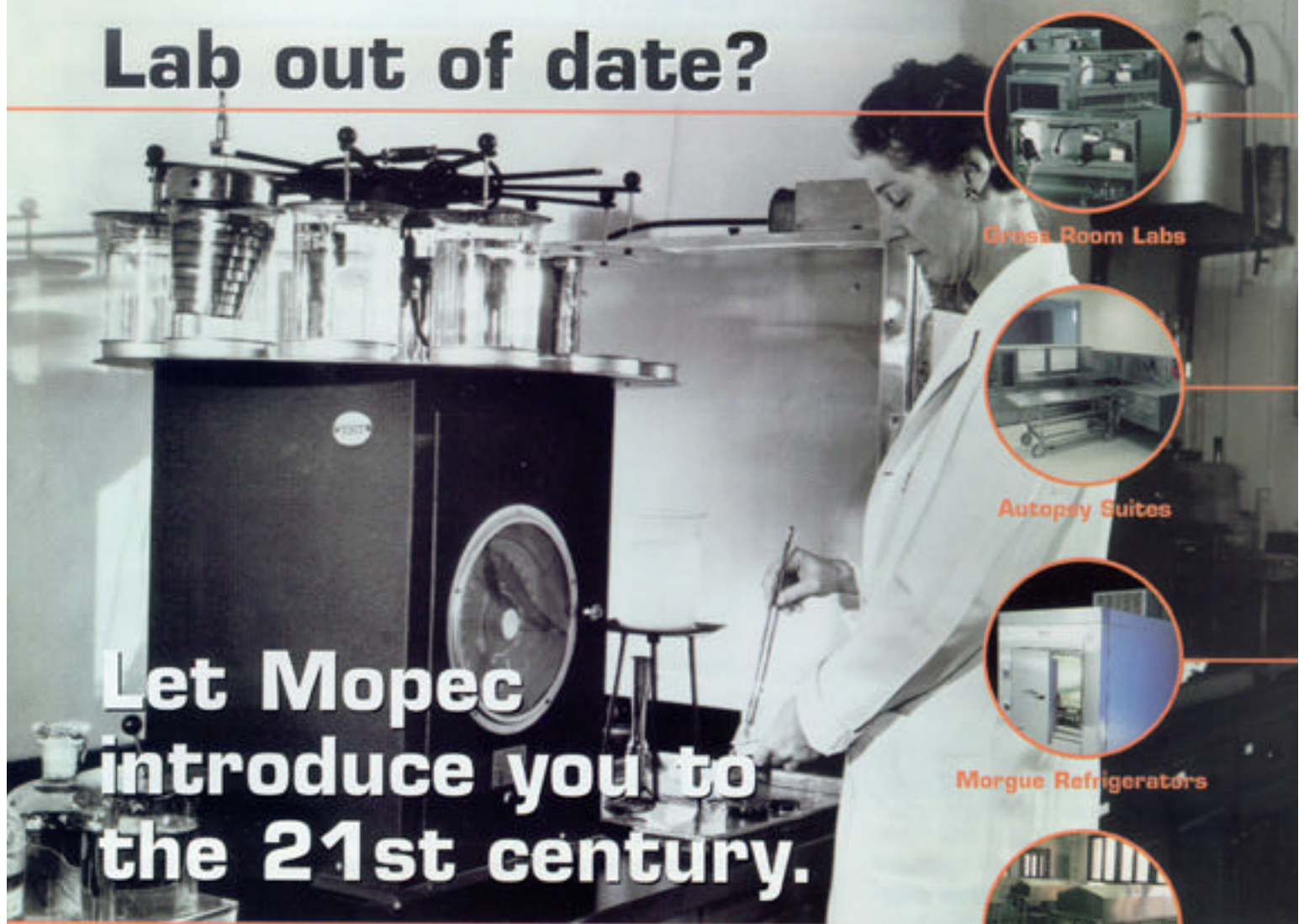
“Our aim was to preserve the way the pathologist works by making the infrastructure work better,” adds Dr. Shelanski. “We’re nowhere near perfect, but we’re better than we used to be.” □

Karen Titus is CAP TODAY contributing editor and co-managing editor.

Accessioning supervisor Yamila Adams (seated) and accessioning clerk Guy Fortune in the newly created accessioning office. A sliding partition creates easy access while limiting carry-over noise in the laboratory.



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