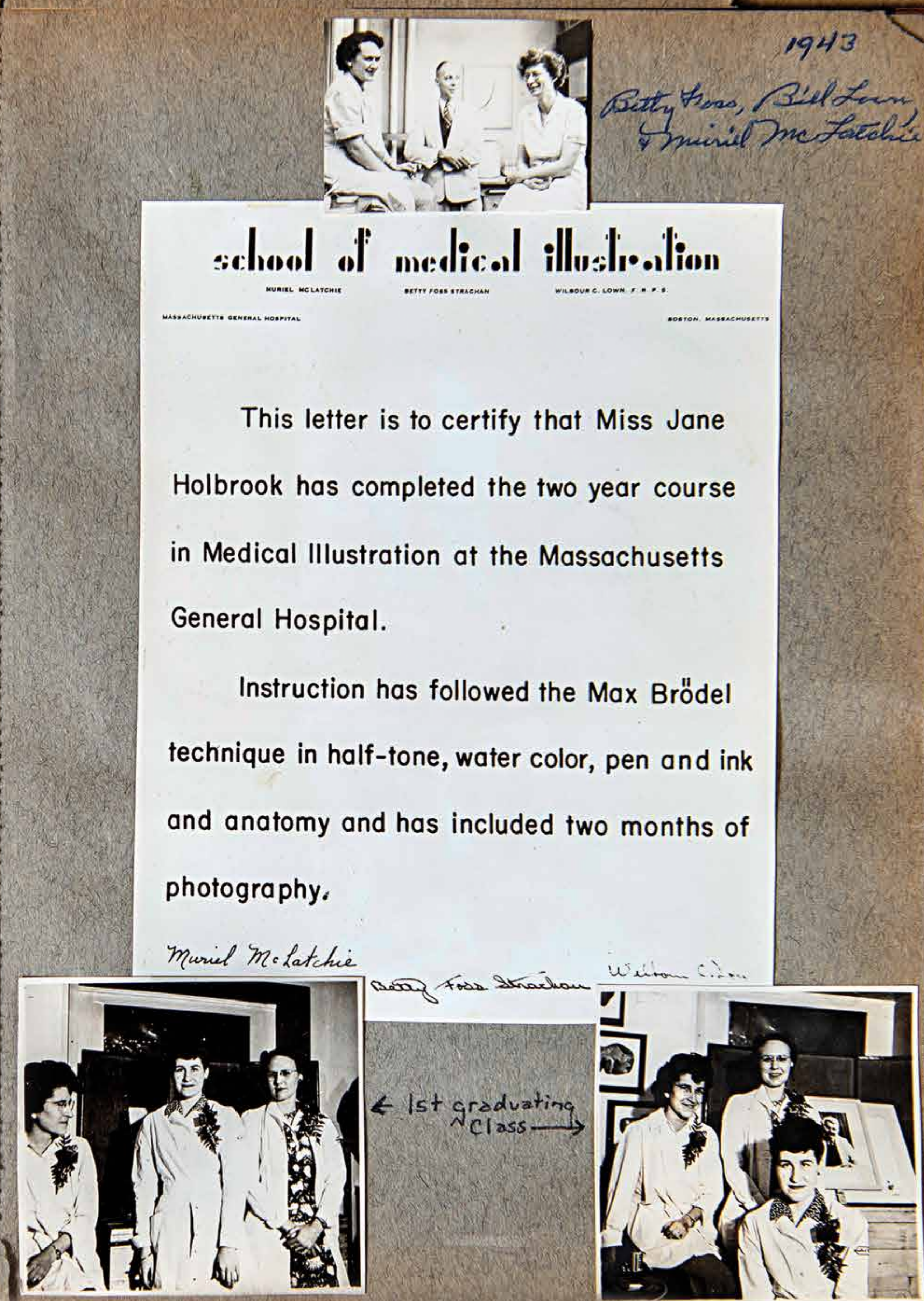


The Medium is the Message:

MGH's School of Medical Illustration

1941–1967

Taking its first students in 1941 and graduating its last class in 1967, the Massachusetts General Hospital School of Medical Illustration was a short but influential chapter in the hospital's history. The field of medical illustration – depicting tissues and cells at the microscopic level, human anatomy and surgical procedures, has existed for centuries, but made great advances in the early 20th century. MGH's school was the third one like it in the country, helping to move the field from an assortment of self-taught practitioners to a profession with specialized training.

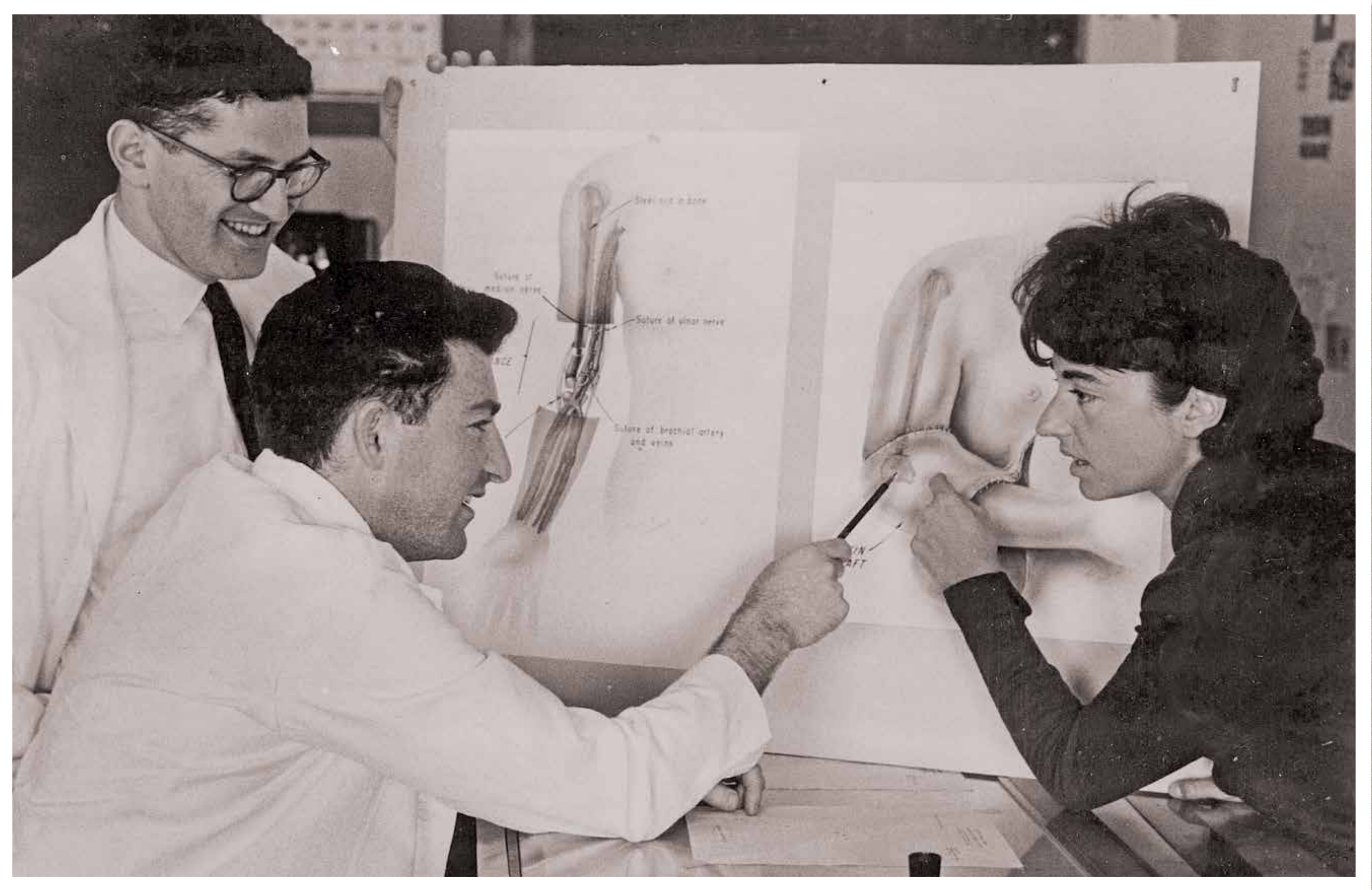


This scrapbook page by medical illustration student Jane Holbrook shows the school's first graduating class, in 1943. For the first several years, the students were predominantly women because of World War II. Even before the war, medical illustration was a profession that had been open to women, including in the field's leadership.

“The camera can only record what it sees. The artist... can put on paper what exists but may not be visible. We can strip away such extraneous things as hands, blood, or instruments which hide the principal subject.”

—Edith Tagrin, MGH School of Medical Illustration class of 1949, former director of the MGH Department of Medical Art

Edith Tagrin, then head of the Department of Medical Art, and two colleagues discuss a diagram of a limb replantation. MGH performed the first successful replantation, re-attaching a patient's limb after an injury, in 1962.



A Centuries-Old Tradition

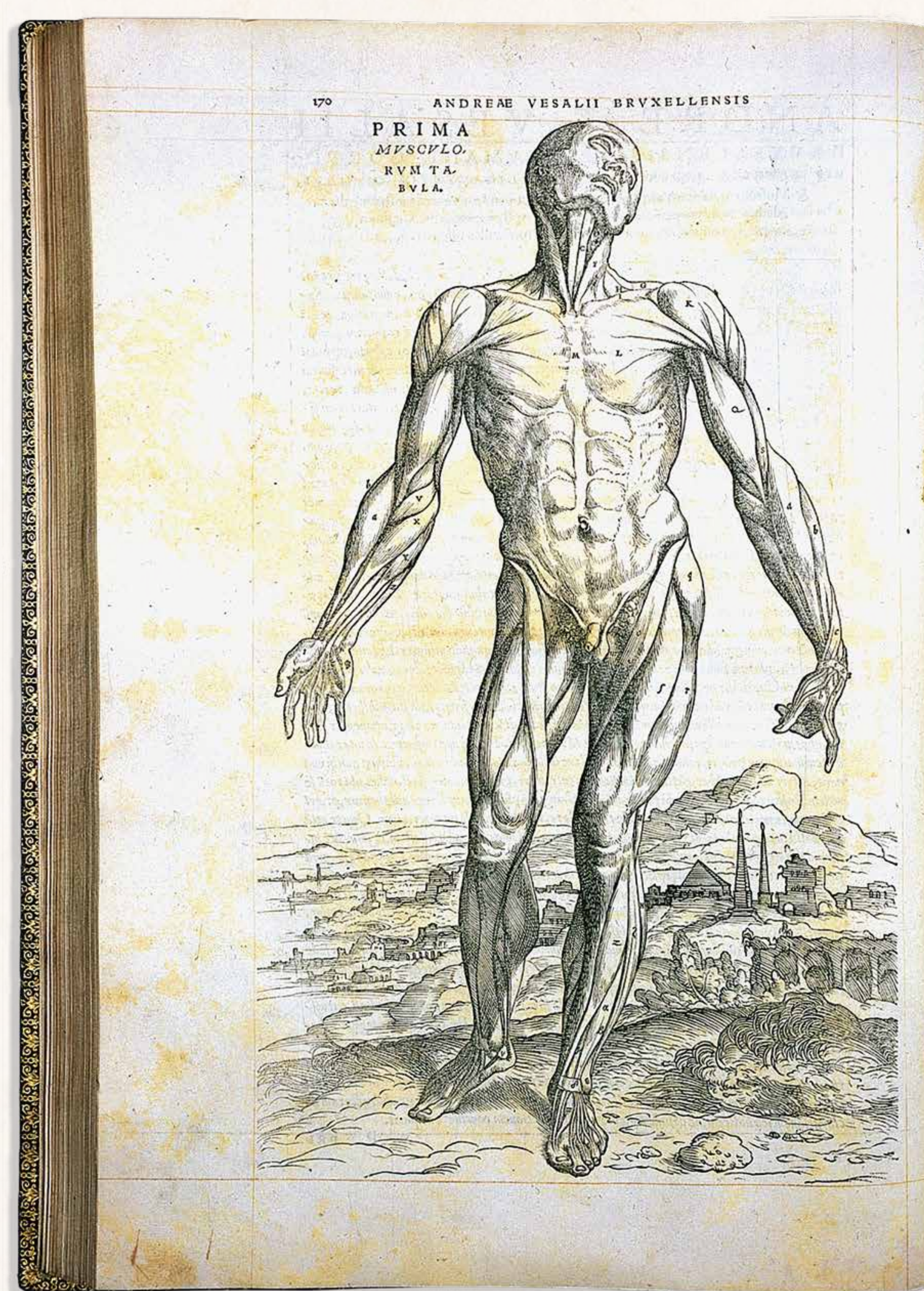
While depictions of disease are almost as old as art itself, illustration became part of the Western medical tradition during the Renaissance. Previously, dissection had been taboo and invasive surgeries had been rare, for religious and cultural reasons and because of scant knowledge of the causes of disease. As norms shifted and dissection became part of medical study, 17th and 18th century anatomists and artists began to create medical illustrations. Equipment such as the microscope allowed deeper examination of the body and new printing techniques allowed better reproductions of images. By the 19th century, many prominent medical researchers created their own illustrations, and images of the body could be captured with photography. However, photography did not negate the need for medical illustration.

It is possible that MGH was the first American hospital to employ a dedicated “Artist of the Hospital,” hiring Lucius Manlius Sargent, MD, in 1857, and his successor Henry P. Quincy, MD, in 1872. Quincy taught histology, the study of cells and tissues at the microscopic level, at Harvard Medical School. Medical illustration is integral in describing histology research. In the 1890s, the hospital returned to the pre-Sargent model in which individual surgeons, anatomists or pathologists hired illustrators for specific projects.

The world’s first academic program for medical illustration was founded by Max Brödel in 1911 at Johns Hopkins University in Baltimore. Brödel was a leader in drawing techniques with great sensitivity to tone in black and white, making it affordable to print high-quality illustrations in medical journals and other publications. Brödel’s students included H. Frederick Aitken, Etta Piotti and Muriel McLatchie (later Muriel McLatchie Miller), all of whom were later hired by doctors at MGH as freelance medical artists.

“In medical drawing, full comprehension must precede execution.”

—Max Brödel, pioneer in medical illustration



Renaissance masters such as da Vinci performed dissections but were also influenced by artistic norms that emphasized beauty, harmony and proportion. Publications were often known for the work of their anatomist authors, rather than the illustrators. The identity of the illustrator of Andreas Vesalius’s 1543 anatomical atlas, pictured here, remains debated.

Andreas Vesalius, *De humani corporis fabrica*, 1543. Wellcome Collection.

When the School of Medical Illustration opened at MGH in 1941, it was housed in the Domestic Building, sharing quarters with kitchens and the pharmacy. Later, the school moved to a pathology building, adjacent to the rest of the Medical Art Unit.

Miss Mac’s Influence

In the late 19th and early 20th centuries, medical illustration flourished as new scientific discoveries such as x-rays improved understanding of the human body. Illustration was often the best tool to interpret findings to doctors, surgeons and medical students who were not specialists in reading x-rays or other techniques. In 1932, Muriel McLatchie Miller was hired as a full-time medical artist for MGH, the first time in decades the hospital had filled that role.

In 1941, Miller founded the third school of medical illustration in North America, after the programs at Johns Hopkins and the University of Illinois at Chicago. The MGH School of Medical Illustration started out as very much her own project; she collected students’ tuition but was not paid for her role as the school’s director. The students affectionately called her “Miss Mac,” and regarded her as an excellent teacher.

Twentieth-century medical discoveries allowed physicians and surgeons to specialize further than they had before. They relied on non-clinician medical illustrators who were trained in anatomy, physiology, histology and artistic techniques. In 1945, Miller and staff from the two other schools formed the Association of Medical Illustrators, now an international organization. The AMI created field-wide standards for medical illustration programs, which continue to evolve with changes in health care. The association started the Muriel McLatchie Miller Award for Fine Art in 1981.



The program included training in specialized artistic techniques, from pen and ink and color drawings to using carbon dust to create a continuous tone, as well as 3D modeling. It also included medical coursework, taught at Harvard Medical School or MGH. Students learned to accurately portray not only large systems of the body, but also cells, tissues and bacteria.



Illustrator Muriel McLatchie Miller works on a poster. In the 20th century, the MGH Department of Medical Art carried out graphic design – visual presentation of information, such as infographics in medical and surgical journals – as well as depictions of the body.

The Medium is the Message:

MGH's School of Medical Illustration

— 1941–1967 —

The Student Experience

The MGH School of Medical Illustration was a three-year certificate program. Most students came in with a Bachelor's degree or higher and had already studied both medicine or biology and art. Students worked closely with the hospital's medical art department, which included photography as well as illustration. In 1948, the school created the first medical illustration internship program in the United States. Students were placed with the art and photography units but also with the departments of surgery, orthopedics, ophthalmology and pathology. The students supplemented the output of the department while gaining practical experience.

In 1960, when the school's founder Muriel McLatchie Miller retired, there were nine similar programs in the country. Miller, who had been operating the school as her own venture, approached the trustees of MGH about the hospital formally assuming responsibility for the school. The hospital agreed, and hired Thomas Stebbins, previously the medical art director at the Henry Ford Hospital in Detroit. Edith Tagrin, a graduate of the school, succeeded Miller as chief of the medical art department, the first time the school and department had separate, paid directors. In the early 1960s, the medical art unit, photography unit and the school worked in tandem as the Visual Education Services department.



“I will aim, in my illustrating, to clearly reveal the truth with the fidelity of the Scientist and with the sober imagination of the Artist.”

—from the medical illustrator's pledge used by the students at the MGH School of Medical Illustration



This cartoon by Robert Ullrich, a student at the MGH school, depicts the medical illustrator encroaching on the operating field. While illustrators did indeed work in the operating room and wore masks and gowns, they sat on observation platforms that afforded views like those in the photos above.

Changes in the Field

Despite a good outlook when Miller retired, the hospital faced difficult decisions in the next five years. Given new AMI standards and a shift in preference from certificates to graduate degrees, it became clear the program would need university affiliation. Stebbins tried without success to interest Harvard and several other area universities. In 1967, the school graduated its last class.

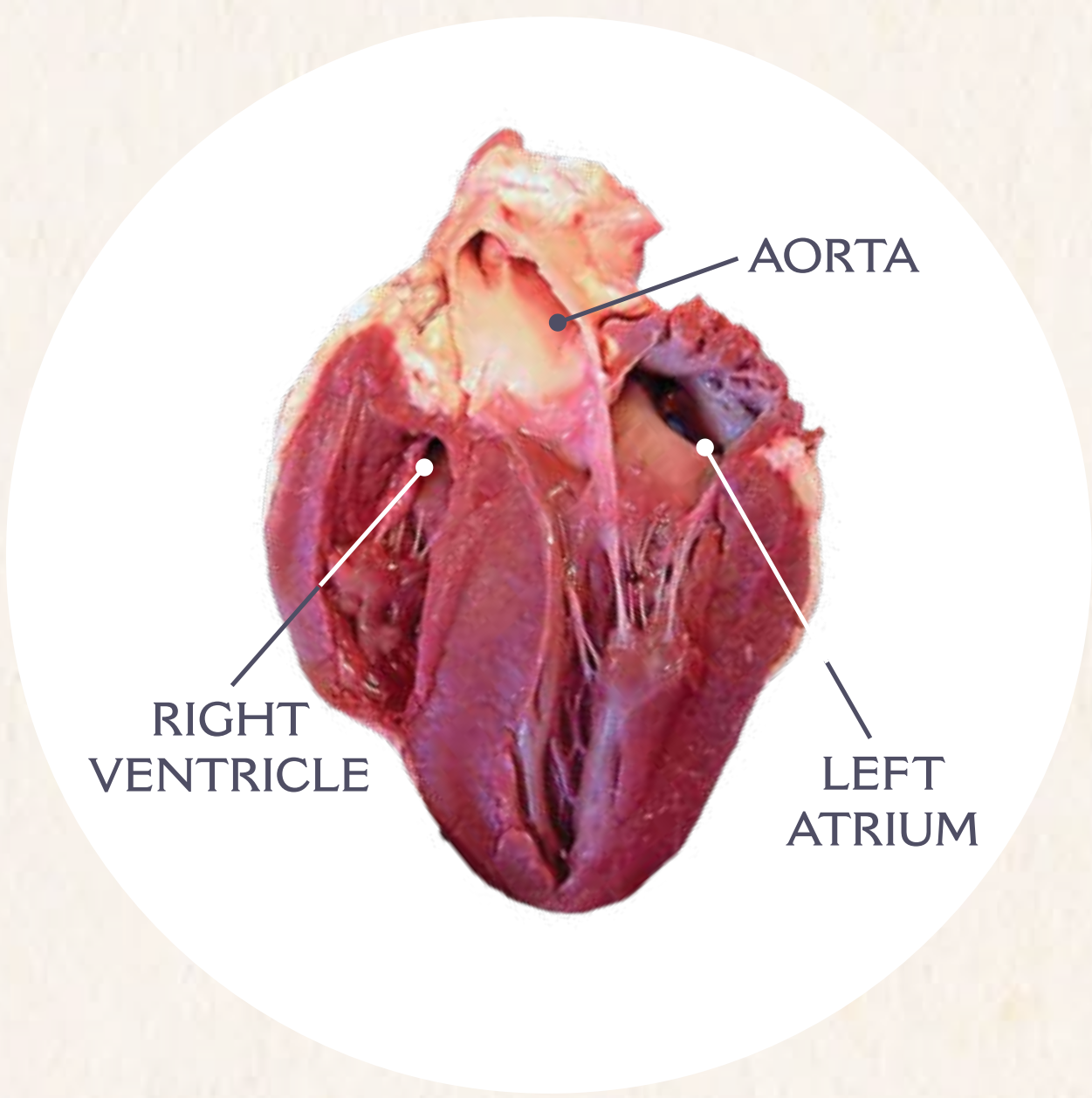
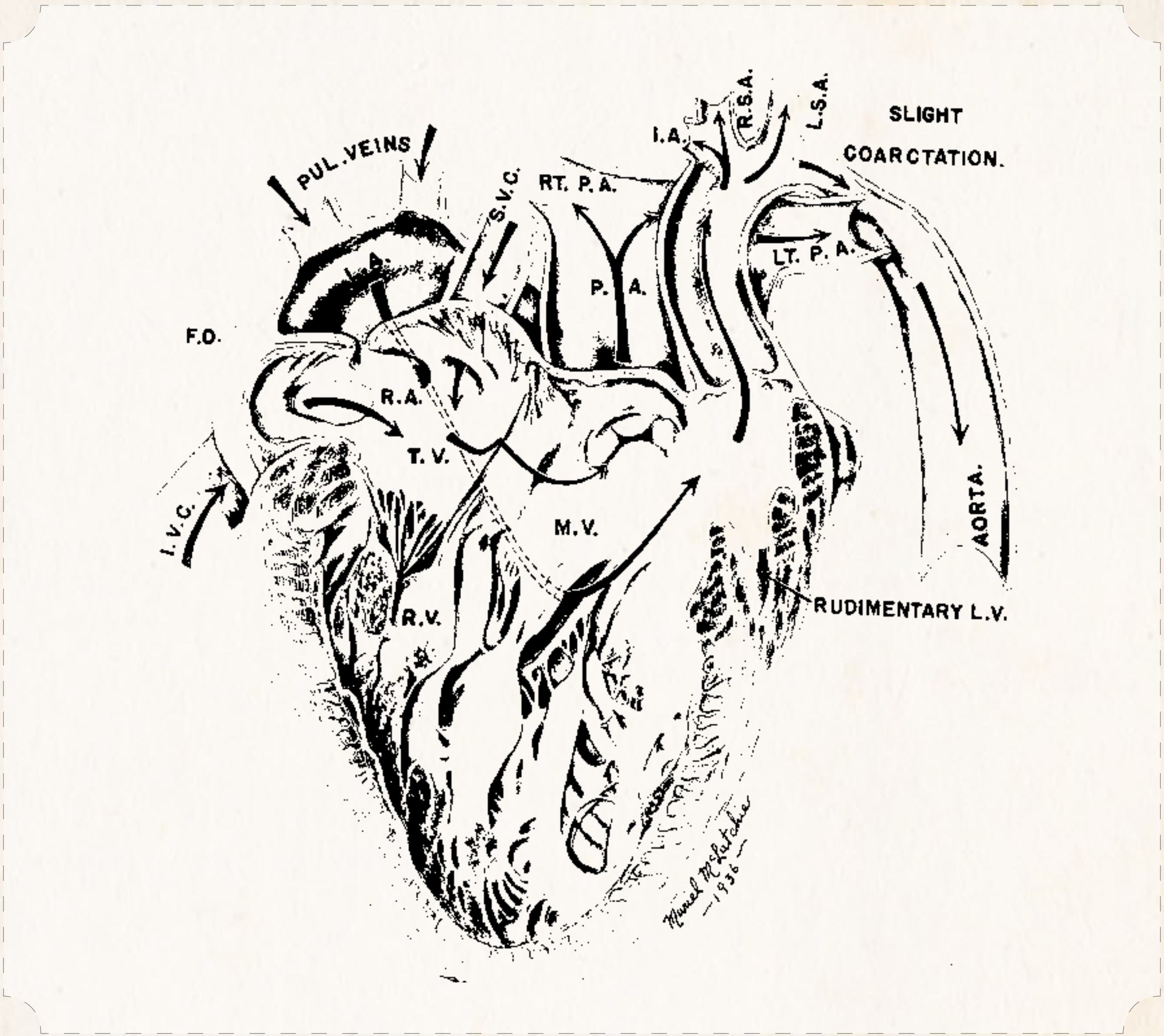
Graduates of the MGH School of Medical Illustration went on to work at several other hospitals in Boston and at hospitals and medical schools across the country. A few found niches such as an eye research institute, a medical advertising agency and the Women’s Army Auxiliary Corps training center at Fort McClellan in Alabama. Some who left the field went to medical school, inspired by what they had seen in their training.

In recent decades, medical illustrators have continued to develop applications for medical art. Global health programs require graphics designed to communicate health information across language barriers. Medical artists helped develop software that simulates facial growth over a period of years in missing children. In addition, textbooks, instructional videos and internet media all use medical illustration. Journals such as the *New England Journal of Medicine* have staff medical illustrators, and researchers often work with freelance medical artists.



For an example of applications for medical art in the museum, see the exhibit on the AIR device on the first floor.

Whether created by hand or on a computer, illustrations provide clear views of biological structures and concepts that are often more meaningful to the viewer than photography or modern tools such as magnetic resonance imaging. As the field has expanded, graphic arts for medical communication is typically carried out by graphic designers, while illustrators are more specialized.



Compare these two representations of a human heart - while the hearts are in different conditions and viewed at different angles, you can see that the chambers and blood vessels are easier to distinguish in the illustration than the photograph.

A medical illustration can depict a surgery in progress without the structures being obscured by blood and tissue, or depict a living organ in isolation. Even as higher-tech imaging tools emerge, illustration remains a crucial medium in medicine.

School of Medical Illustration student Jane Holbrook at a desk, and in the operating room. Students worked in the OR, the bacteriology lab and other active areas of the hospital as well as taking reference photos and other materials back to their desks.



THE RUSSELL MUSEUM WOULD LIKE TO THANK:

Medical illustrator Edith Tagrin

The Lloyd Library and Museum’s Vesalius Trust Collection

A Wide-Ranging Curriculum

COURSES OF INSTRUCTION

First Year

1. GROSS HUMAN ANATOMY and EMBRYOLOGY, - A lecture and laboratory course emphasizing human morphology as revealed by careful dissection. Offered through the cooperation of the Chairman and Associates, Department of Anatomy, Harvard Medical School.
2. MICROSCOPIC ANATOMY - A lecture and demonstration course with study and drawing of selected histological slides.
3. GRAPHIC ILLUSTRATION TECHNIQUES - Studio demonstrations and application of pen and ink and continuous tone techniques to develop accurate observation of anatomical subjects and techniques suitable for reproduction for publication, projection or exhibits.
4. LETTERING - Studio demonstrations and practical applications.
5. PHOTOENGRAVING METHODS - Field trip and written report.

Second Year

1. EYE ANATOMY - A lecture and demonstration course.
2. DENTAL ANATOMY - A lecture and demonstration course.
3. NEUROANATOMY - A lecture and demonstration course, with selected illustration problems.
4. GRAPHIC ILLUSTRATION TECHNIQUES - Studio demonstrations and advanced applications of pen and ink, continuous tone, and water color techniques to the visual interpretation of anatomical subjects, using both fresh and fixed specimens. Demonstrations and illustration problems in the use of airbrush.
5. SURGICAL ILLUSTRATION - The development of graphic illustrations from operating room sketches of Animal Surgery.

Third Year

1. LECTURES, DEMONSTRATIONS and FIELD TRIPS.
Book and Journal Publication Requirements.
Visual Interpretation of Medical Statistics (charts and graphs).
Surgical Procedures and Sterile Technique.
Exhibits - Design and Production.
Illustration for medical Television and Motion Pictures.
Administrative Procedures.
2. PATHOLOGY - A lecture and demonstration course as a basis for illustration projects for lectures and publications.
3. THREE DIMENSIONAL MODELS - Techniques of molding and casting in plaster, agar, wax, rubber and other materials.
Preparation of medical teaching models. Embedding techniques.
4. MEDICAL ILLUSTRATION INTERN PROGRAM - Two months of practical training in each of the following areas:
 - (a) PATHOLOGY - Illustration projects for the study of disease processes of the human body based on clinical, pathological and surgical observations.
 - (b) SURGERY - Illustrations of diagnostic and surgical procedures developed from sketches made in the operating room. Endoscopic illustration.
 - (c) PHOTOGRAPHY - Basic principles and practise in the use of cameras, photographic materials, chemistry, lighting, and projection equipment for clinical and non-clinical medical photography.
 - (d) MEDICINE - Instruction in the use of drawing instruments and in illustration techniques for preparation of charts graphs and diagrams. General medical illustration production requirements. Exhibit design and production

Students who completed the School of Medical Illustration at MGH received a graduate-level certificate in medical illustration. This outline from the 1960s shows the rigorous curriculum at the school, which ranged from lettering to illustrating the inside of the body using endoscopy.



Before the school acquired a teaching skeleton of its own, the students frequently borrowed skeletons from other departments for their work. When the school did get its own skeleton, the students dubbed it "Peaches," in the then-common practice of nicknaming a skeleton something unrelated to the living person it once belonged to.

