

# Johns Hopkins and the Feminist Legacy: How a Group of Baltimore Women Shaped American Graduate Medical Education

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The Johns Hopkins Hospital and School of Medicine are without a doubt one of the world's greatest and premier medical establishments<sup>1</sup> and historically the founding institutions of modern American medicine.<sup>2,3,4</sup> Johns Hopkins is considered to be the first modern American research university; the birthplace of medical specialties such as neurosurgery, urology, pediatrics, endocrinology, cardiac surgery, and child psychiatry.<sup>4,5,6,7</sup> Common medical traditions including wearing gloves during surgical procedures, "making rounds," "bedside teaching," "house staff," "residents," and "closed chest cardiac resuscitation" were all born at Hopkins. In a surprising twist of fate Johns Hopkins became ground zero and, initially, an unwilling partner in the late nineteenth century feminist battle for women's equality.

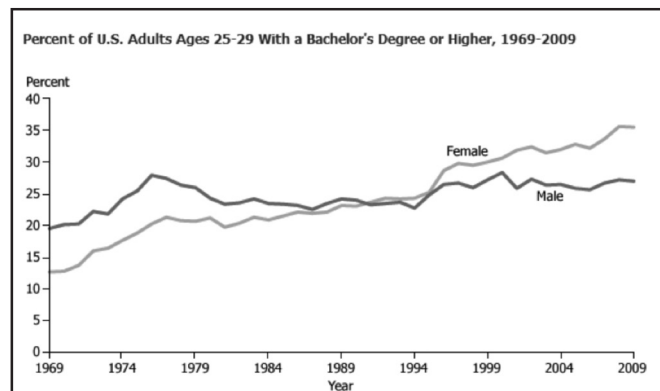
Perhaps the two most important Hopkins contributions to American medical education were the educational format and coeducation. Admission requirements for the first time included prerequisite college education, heavy on basic science; chemistry, physics, biology – and a tough entrance examination. The medical school curriculum itself underwent a complete transformation with emphasis on the scientific method with laboratory research as part of the instruction. The integration of the School of Medicine with the Hospital through joint appointments of the professors, who were first-rate full-time clinician-scientists, incorporated bedside teaching for the medical students. Satisfactory completion for graduation included four years of rigorous study, bedside learning, and extensive

laboratory training with mandatory student original research projects. The new model also created standardized advanced training in specialized fields of medicine with the creation of the first post-graduate internships and house staff fellowships. While most of the above developments were methodical and well planned, coeducation and admission requirements were not part of the original plan and came about as a result of a tenacious fight by a group of determined young late nineteenth century Baltimore feminists who were able to seize an opportunity moment and confront powerful male hegemony and intransigence with "coercive philanthropy."<sup>8,9</sup>

Recent preliminary data just released by the U.S. Department of Education on enrollments in all Title IV institutions in the United States for the 2010-11 academic year show that there were 29.5 million students enrolled at these Title IV institutions. Of these, nearly 17 million, or 57.5%, were women.<sup>10</sup> Further analysis of the data also shows an interesting phenomenon – the "feminization" of higher education; among all major ethnic groups women are now more likely to enroll in, and graduate from, college than young men (Figure 1). Additionally, women comprised 60.2% of all students enrolled in graduate programs.<sup>10</sup> In the United States for 2011 women made up 47% of all new students at U.S. medical schools. In five of these U.S. medical schools, the University of California at San Francisco, the University of Missouri at Kansas City, the UMDNJ-Robert Wood Johnson Medical School, and Meharry Medical College

in Nashville, female students were more than 55% of the entering classes. At the Morehouse School of Medicine in Atlanta, 73.2% of the new students were women.<sup>11</sup>

**Figure 1:** The Feminization of American Higher Education.



Source: Population Research Bureau analysis of data from U.S. Census Bureau.

## Early American Medical Education

In Colonial America, during the 1600s and 1700s, any enterprising person could practice medicine, since there were almost no medical schools. An aspiring healer generally did so by apprenticing to an already established physician. Those who had the means traveled to England or Europe to train with a famous physician at a school or hospital. Some entered the medical profession informally by establishing a reputation as a “physician” by nursing a sick acquaintance or selling curatives.<sup>12</sup>

In the mid-1700s, Americans began establishing their own medical schools. By 1810, there were seven medical schools: University of Pennsylvania (1765); King’s College, now Columbia (1767); Harvard (1782); Dartmouth (1797); College of Physicians and Surgeons of New York City (1807); University of Maryland (1807), and the short-lived Brown University program (1811). The total number of medical students in attendance was approximately 650, 406 of whom were at the University of Pennsylvania. Initially, these schools only offered a Bachelor of Medicine but soon began awarding a Doctor of Medicine degree.

Medical education in that era included formal lectures for a semester or two and several years of apprenticeship. A degree was typically awarded after only two years of study, laboratory work, and dissection were not necessarily required. Many local doctors were the “instructors,” although their own training had left something to be desired.

There was no formal tuition, no prerequisite academic preparation, and written exams were not mandatory. The regulation of the medical profession by state government was minimal or nonexistent. There were thousands of “proprietary” medical schools, actually commercial-for-profit operations that provided a minimum of easy, nonacademic courses for money. A “diploma mill,” called Twentieth Century Physio-Medical College, operated in Guthrie OK in 1900-1904, held no classes, but

issued diplomas until finally sued by the Oklahoma territory Attorney General.

In both Europe and the Americas the actual training for medicine was by apprenticeship. A student was indentured to a practitioner for an unspecified time of servitude. During this period the student “. . . learnt to draw teeth, to cup, bleed and dress minor wounds, but he might also have to look after his preceptor’s horse and bring it around saddled and ready as necessary. He learnt his material medica in detail as his master’s drugs were obtained in crude form, and he had to pulverize bark and roots, make and spread plasters, and make up tinctures, ointments, extracts, blue mass, etc.”<sup>13</sup>

## Storming the Citadel: Gender Bias in Medicine – A Historical Perspective

These opportunities were primarily available only to men. At the outset of the 19<sup>th</sup> century, women were disenfranchised; they could not vote or hold office in any state, they had limited to no access to higher education, and were, therefore, excluded from professional occupations. Gradually social and economic changes, such as the development of a market economy and a decline in the birthrate, opened employment opportunities for women. Instead of bearing children at two-year intervals after marriage, as was the general custom throughout the colonial era, during the early 19<sup>th</sup> century reproduction was delayed and children became more spaced. However, at that time the American legal precept was that a wife had no legal identity separate from her husband. A woman, at that time, could not own nor enter into any contract. She could not be sued, nor could she bring a legal suit. If she happened to be employed and married, she was not permitted to control her own wages or obtain custody of her children in the event of separation or divorce.

Merit Ptah (c. 2700 BCE) of early ancient Egypt, and whose picture is depicted on a tomb in the necropolis near the step pyramid of Saqqara, is believed to be the first woman known by name, as the first female physician.<sup>14</sup> The high priest of the time, who happened to be her son, described Merit Ptah as “the Chief Physician.” According to Gaius Julius Hyginus (c. 64 BC – AD 17), a Roman author, Agnodice or Agnodike (Gr. Ἀγνοδίκη) was the earliest Greek female midwife, who dressed as a man in order to study with the famed ancient Greek doctor Herophilus. Agnodice reportedly continued the disguise so she could practice gynecology. Initially, women refused her service until she told them that she was a woman. After that her practice flourished, but fellow practitioners accused her of professional misconduct with her female patients. So as to escape execution, she was forced to reveal her deception but was charged with illegally practicing medicine, since women were not allowed to practice medicine. At the intervention of her satisfied patients the court in Athens acquitted Agnodice. However, the Agnodice story may be mythological, since Hyginus has no corroboration to this story.

In the nineteenth century it was a common perception in the society at large that women were too “*frivolous and delicate to*

handle full-strength medical education, with its gory emphasis on human anatomy and disease.” Much of this sentiment, however, was due to pure misogyny and pure discrimination against women. Even the American Medical Association, founded in 1846, barred women from membership until 1915. A few women had surreptitiously and by sheer determination shown that they could compete.

The intriguing case of Dr. James Barry (1797-1865), a medical officer in the British army, is illustrative of the former. Having graduated from the prestigious University of Edinburgh Barry worked at St Thomas Hospital, London, before joining the Army. As a military doctor he served in India and Cape Town, South Africa, where he performed the first successful caesarian section in 1826. After a tour of his military duties, during which he distinguished himself as a reformer by improving conditions for wounded soldiers, as well as that of the native inhabitants, he rose to the rank of Inspector General in charge of military hospitals.<sup>15</sup> Although having lived his adult life as a man, Barry is now widely believed to have been female-assigned at birth as Margaret Ann Bulkley.<sup>16</sup> It is speculated that he chose to live as a man in order to be accepted as a university student and become a physician.<sup>17</sup> Perhaps because of an aggressive manner, skill as a surgeon, and a reputation as an accurate marksman the beardless, squeaky voiced rather effeminate looking Barry evidently was successful with this deception. Some have theorized that Barry may have been intersex.<sup>16</sup>

Elizabeth Blackwell’s (1821-1910) saga is one of sheer determination in the face of insurmountable odds, hostility, and downright gender discrimination. She was the first woman to receive a medical degree in the United States in 1849 and was also the first woman on the British Medical Register, primarily with the help of her mentor, Dr. James Paget at St. Bartholomew’s Hospital. It should be noted that before 1847, however, any women seeking medical training could go abroad to Europe where, at the University of Zurich and the University of Berlin, they could study the medical curriculum, although they were not granted a degree.

Blackwell had applied to and was summarily rejected by 29 medical schools before being accepted in 1847 by a small school in upstate New York, The Geneva College of Medicine. Rather than reject her outright, since she was well qualified, the dean of the medical school, Dr Charles Lee, presented the application directly to his male students. Perhaps the real reason Lee was avoiding personal responsibility was fear of offending Miss Blackwell’s sponsor and mentor, Joseph Warrington, a well-respected and prominent physician in Philadelphia.<sup>18</sup> Lee brought the matter of Blackwell’s admission before the student body. Should a woman be allowed to enroll in the medical school? Having stipulated a unanimous decision as a condition for admitting Blackwell, Lee was confident of a negative verdict. However, the students, thinking it a great practical joke, voted unanimously to admit her! According to an eye witness,<sup>19</sup> there had been one lone dissent who soon had his mind changed for him!

“A meeting was . . . called for the evening and a more uproarious scene can scarcely be imagined. Fulsome speeches were made . . . the whole class voted ‘aye’ . . . a faint nay was heard in the corner of the room . . . and screams of ‘cuff him,’ ‘crack his skull.’ A young man was dragged to the platform screaming, ‘Aye, aye, I vote aye.’”

A classmate, Stephen Smith, wrote years later about Blackwell’s first day<sup>19</sup>: “The Dean came into the classroom, evidently in a state of unusual agitation. The class took alarm, fearing that some great calamity was about to befall the College. . . . He stated, with a trembling voice, that . . . the female student . . . had arrived. With this introduction he opened the door to the reception room and a lady . . . entered, whom the Dean formally introduced as Miss Blackwell. She was plainly but neatly dressed in Quaker style, and carried the usual notebook of the medical student. A hush fell upon the class as if each member had been stricken with paralysis. A death-like stillness prevailed during the lecture, and only the newly arrived student took notes. She retired with the professor, and thereafter, came in with him and sat on the platform during the lecture.”

She graduated two years later, January 23, 1849, at the head of her class. Upon her graduation multiple newspaper editorials had a field day commenting with the usual flippant slogans such as “the delicacy and shrinking sensibility that is the peculiar attribute of women” and that the “retirement and quietude of the family circle” are “more agreeable to the female disposition”.<sup>20</sup> The *New London Daily Chronicle* (New London, Connecticut) on Feb. 1, 1849, noted “Miss Elizabeth Blackwell a few days since received the degree of M. D. from the medical college of Geneva, N.Y., and intends to enter upon the practice of the profession. She will probably be most successful in “diseases of the heart,” and if she is particularly pretty, it is to be feared, create quite as many cases as she prescribes for.”

Immediately following Blackwell’s graduation, a spirited debate about women physicians arose in the *Boston Medical and Surgical Journal* (now the *New England Journal of Medicine*, which later would become the voice of opposition to the education of female physicians. There was quite a vigorous exchange between the pseudonymous “D.K.” who wrote a particularly venomous letter to the editor concerning Elizabeth Blackwell’s medical degree. Charles Lee, the dean of Geneva College, replied on the defensive.<sup>21</sup> Surprisingly, Lee concluded that the inconveniences attending the admission of females to all the lectures in a medical school were so great that he felt compelled on all future occasions to oppose such a practice!

A vanguard of other notable pioneer women soon followed despite these concerted efforts of protests from within the medical community and society at large. Chief among them were Elizabeth’s younger sister, Emily Blackwell, as well as Maria Zakrzewska, Mary Putnam Jacobi, and Ann Preston. The Women’s Medical College of Pennsylvania opened in 1850, the first of several institutions devoted primarily to the medical education of women. Even then, the Philadelphia County Medical Society denied membership admission to its graduates

and forbade the society's members to meet with these female doctors or their school's faculty until 1888, when the Society voted in Mary Willits, a graduate of 1881. In 1857, the Blackwell sisters, along with Zakrzewska, founded the New York Infirmary for Women and Children.

By the end of the 19th century, 19 women's medical colleges and nine women's hospitals had been established. The struggle for coeducation, however, was initially successful only in a minority of institutions, hampered in large part by the theories of Harvard professor Edward H. Clarke<sup>22</sup> who proclaimed that women seeking advanced education would develop "... monstrous brains and puny bodies; abnormally active cerebration; and abnormally weak digestion; flowing thought and constipated bowels..." (page 41 of his popular book, *Sex in education: or A fair chance for the girls* (1873).

### Johns Hopkins and the Baltimore and Ohio Railroad

On December 24, 1873, a wealthy and influential Baltimore Quaker businessman named Johns Hopkins died unmarried and with no children of his own. Johns Hopkins's unusual name was an amalgamation of his grandmother's name, Margaret Johns, and his grandfather's name, Gerard Hopkins.<sup>23</sup> Johns Hopkins had been a shrewd and successful investor during the so-called gilded age at a time of no federal taxation. He seemed to have done very well indeed.

Mr. Hopkins, the second eldest of eleven children of Samuel Hopkins and Hannah Janey, was born at Whitehall, his family's slave-owning, 500-acre tobacco plantation in Anne Arundel County, Maryland, on land granted by the King of England to William Hopkins in the seventeenth century. In 1807, in accordance with their local Society of Friends decree which had begun to preach that human slavery was inconsistent with their faith, Samuel Hopkins, freed all his slaves. This development necessitated 12 year-old Johns to interrupt his formal education so as to work on the farm. However this lesson on racial tolerance and sympathy was well learned and would surface at various times of his life up to and including his bequests.

Starting work at age 17 in his uncle's wholesale grocery business in Baltimore, he soon branched off on his own. Taking three of his brothers as salesmen, he formed the wholesale house of Hopkins Brothers and was soon doing a profitable mercantile business in Maryland, Virginia, and North Carolina. By age 50 he retired from Hopkins Brothers, after 25 years, a very wealthy man. He then started using this wealth to finance very lucrative ventures.

Johns Hopkins took to rehabilitating the Baltimore harbor area, which had outgrown its dingy facilities. He bought up old lots and replaced them with updated warehouses and office buildings. This urban renewal not only expanded the resources of the port but brought Mr. Hopkins substantial returns on his investment. His greatest venture, however, would be the Baltimore and Ohio Railroad (B&O). He was quick to see

the potential of the railroad, especially, since during his trader days, his merchandise had to be dragged in great Conestoga wagons over the mountains into the Shenandoah Valley and beyond. Moreover, in the 1820s the port of Baltimore was in danger of losing its preeminent trade position for the right of transit of goods to the West. The port of Baltimore was in fierce competition with New York and Philadelphia for trade with the Midwest. A new threat was coming from the newly opened Erie Canal and the proposed construction of the Chesapeake and Ohio Canal that would parallel the Potomac River from Washington, DC, to Cumberland, MD. These new water routes potentially threatened to bypass Baltimore's thriving harbor.<sup>24</sup> It quickly became apparent that a railroad would be a great asset in this competition, and Baltimore authorized construction of America's first major railroad, the B&O, to connect the city with the Ohio River valley.

While conservative investors refused to sponsor an untried futuristic venture like the B&O, Johns Hopkins gladly jumped in with his fortune. By quickly amassing and controlling between 15,000 and 17,000 shares he soon became the company's largest stockholder. In 1847 he was made a director and by 1855 chairman of the company's powerful finance committee, a position he held until his death. During the financial panics of 1857 and 1873, he floated the entire company by pledging his own personal fortune to the company, thereby rescuing his original investment while also averting financial disaster for the city. These actions also put Mr. Hopkins in a better position to influence the nomination of his best friend, John Work Garrett, as president of the B&O.

The city of Baltimore and the state of Maryland provided much of the original capital of the Baltimore and Ohio railroad before it went public. Therefore, of the 30 railroad directors, eight were appointed by the Baltimore City Council, and 10 named by the state of Maryland, while 12 were elected by private stockholders. As to be expected, conflicting interests arose. Private investors preferred profits and dividend payments on their initial investments, while the public stockholders favored low transportation charges over profits and wanted improvements financed out of earnings. Specifically, the private investors led by Johns Hopkins wanted a 30% dividend in lieu of new construction. In 1858, Hopkins nominated John Work Garrett, a friend of his and another up-and-coming Baltimore financial titan, for the presidency of the railroad. In a hard-fought battle, Garrett was elected by a narrow margin but was able to hold the position until his death in 1884.

The Civil War broke out during Mr. Garrett's tenure as president of the B&O. Baltimore was on the Mason Dixon line with many of its citizens, including the rest of the Garrett family, sympathizing with the southern cause. However, John Work Garrett bucked this trend for economic reasons and cast his allegiance with Abraham Lincoln and the Union. As for Johns Hopkins he was a true abolitionist and progressive and way ahead of his time in matters of race and egalitarianism. As the nation's first railroad, the B&O assumed a crucial if not decisive role in preserving the Union. It became a strategic link be-

tween Washington, D.C., and the rest of the Union and allowed Union military elements to be positioned quickly into Virginia and the Confederate territory to the west. The B&O also facilitated transportation of equipment, supplies, and evacuation of the wounded. In fact during the War the B&O was known as “Mr. Lincoln’s Road.”<sup>28</sup> After the war Garrett secured the most profitable contracts, restored the credit of the B&O, and extended the road until it became one of the largest and most prominent lines in the country. He made lots of money for himself and Mr. Hopkins.

### A Paradigm Shift in American Medicine: Johns Hopkins’s Will and Letter to the Trustees

It has been suggested that up to about 1866 or thereabout, six or so years before his death, Johns Hopkins had not yet drafted a will.<sup>8,25</sup> That year his friend Garrett arranged a dinner meeting at the Garret mansion between Hopkins and George W. Peabody, a like-minded wealthy patron now residing in London but on a visit to Baltimore. It is widely assumed that on that fateful night Peabody prevailed upon Hopkins, who soon drafted a will and appointed two Boards of Trustees, consisting of his friends, his lawyers, and business associates. At the time of his death Mr. Hopkins’s estate was estimated at just over \$8 million. Except for about \$1 million left to his relatives, the bulk of his estate was left as a philanthropic bequest with specific apportionments and instructions, in fact so specific that this would cause a dilemma later on. At \$7 million (\$126 million in 2010 dollars), this bequest at that time was the largest endowment of any college in the United States. In the extensive obituary article on Johns Hopkins<sup>25</sup> the Baltimore Sun pointed out that, at the time the endowment of Harvard University was less than two and a half million dollars; Princeton College, New Jersey, had received donations amounting to \$470,000; and Cornell University in New York, \$487,000. In the year that Hopkins died Commodore Cornelius Vanderbilt had been strong armed in his 79th year to make the gift that founded Vanderbilt University early in 1873. The \$1 million that he gave to endow and build the university would be the Commodore’s only major philanthropy! By way of comparison Cornelius Vanderbilt, at the time of his death at age 82 in 1877, left a fortune that was estimated at over \$100 million at the time. He left it all to his heirs.

The Johns Hopkins bequest spelled out the formation of:

1. The Johns Hopkins Colored Children Orphan Asylum in 1875;
2. The Johns Hopkins University in 1876;
3. The Johns Hopkins Press, the longest continuously operating academic press in America, in 1878;
4. The Johns Hopkins Hospital and the Johns Hopkins School of Nursing in 1889;
5. The Johns Hopkins University School of Medicine in 1893.

The hospital and orphan asylum would each be overseen by the 12-member hospital board of trustees and the university by the 12-member university board of trustees. Many board members were represented on both boards. Johns Hopkins’s explicit views are formally spelled out in four documents:

- i. The incorporation papers filed in 1867,
- ii. His instruction letter to the hospital trustees dated March 12, 1873,<sup>26</sup>
- iii. His will, which was quoted from extensively in his Baltimore Sun obituary,<sup>25</sup>
- iv. And in his wills two codicils, one dated 1870 and the other dated 1873.

Here are some interesting and revolutionary ideas that stand out in his letter addressed to the Hospital Trustees.

*“I have given you, in your capacity of Trustees, thirteen acres of land, situated in the city of Baltimore, and bounded by Wolfe, Monument, Broadway and Jefferson streets, upon which I desire you to erect a Hospital.-----which shall, in construction and arrangement, compare favorably with any other institution of like character in this country or in Europe. [The Hospital would admit] the indigent sick of this city and its environs, without regard to sex, age, or color; who may require surgical or medical treatment. -----provide for the reception of a limited number of patients who are able to make compensation for the room and attention they may require. The money received from such persons will enable you to appropriate a larger sum for the relief of the sufferings of that class which I direct you to admit free of charge; -----It will be your special duty to secure for the service of the Hospital surgeons and physicians of the highest character and greatest skill. I desire you to establish in connection with the Hospital a training school for female nurses--- competent to care for the sick in the Hospital wards, and will enable you to benefit the whole community by supplying it with a class of trained and experienced nurses.----- It is my especial request that the influence of religion should be felt in and impressed upon the whole management of the Hospital; but I desire, nevertheless, that the administration of the charity shall be undisturbed by sectarian influence, discipline or control.”<sup>26</sup>*

It is still quite a puzzle as to how Johns Hopkins came up with such innovative ideas that were way ahead of his time. The intentional integration of the School of Medicine and the School of Nursing with the Hospital and emphasis on the scientific method was quite revolutionary. This was a deliberate nod to the German universities, where the scientific method and laboratory experiments were the basis of medical science. The Hopkins model would even outdo the German approach.

During the American Reconstruction, when racism was rampant, Hopkins makes provisions for quality health services for the underserved, the poor, and the racial minorities without regard to their age, sex, and color. Curiously, he devised a plan for those with means to subsidize the care of the less fortunate, a notion the United States, the wealthiest nation in history is still grappling with more than a hundred years since Hopkins

died. It is noteworthy that when the Hospital opened, the general wards were not segregated according to race but the faculty and staff soon protested, and this practice was quickly abandoned in rigidly segregated Baltimore. Such changes would not be revisited until 1964. Harvey Cushing, one of the first residents at Hopkins and an early surgical luminary, who would become a major force in American medicine, was opposed to the hiring of black nurses in municipal hospitals, and restricting the entry of blacks, Jews, and Italians into American medical schools.<sup>27</sup> Decades later cardiac surgery would be born at Hopkins following the success of the Blalock-Taussig shunt (subclavian/pulmonary anastomosis for tetralogy of Fallot). Vivian Thomas, the black laboratory technician, who worked in Alfred Blalock's experimental laboratory and who actually developed the animal model and devised and perfected the surgical technique remained unacknowledged for a long time, both by Blalock and by Hopkins.<sup>28</sup>

While Hopkins's Quaker faith might have helped inform his egalitarian and philanthropic tendencies, it is remarkable that he yearned for an institution unencumbered by sectarian influence. However, such a progressive philosophy smacked of heresy in 19th century parochial Baltimore. Even when the University was dedicated in 1876, many hounded Daniel Gilman, the University's first president, for what they considered a blasphemous oversight – conducting a dedication ceremony bereft of a benediction. Gilman may have attempted to quell this controversy by allowing “Christus Consolator” (Christ the Consoler), a 10½ foot Carrara marble Christ statue, an exact copy of one that Danish sculptor Bertel Thorwaldsen executed for Copenhagen's Frue *Kirke* in 1821, to be erected under the octagonal historic dome of the new Hospital entrance. With its inscription from Matthew 11:28 -- “COME unto ME All Ye That Are Weary And Heavy Laden And I Will Give You REST”, the statue portrays the risen Christ, with open arms and deep nail marks in the hands and feet, and many regard it as a source of comfort and hope for afflicted patients and families.

### The Four Founding Physicians

The Hopkins revolution in medical education was spearheaded by an unusual and fortuitous combination of four impressive young physicians: William H. Welch, William Osler, William S. Halsted, and Howard Kelly – the so-called Big Four. They were recruited by offering them hitherto unprecedented research opportunities and a guaranteed full-time salary, a radical departure from the tradition of using part-time local practitioners to instruct medical students. All four of these doctors were idiosyncratic larger-than-life personalities who all had profound and long-lasting seismic influence on American medical education and research. Pathologist William Henry Welch was an inveterate bachelor whose favorite pastimes were swimming and carnival rides and who had a voracious appetite for five-dessert dinners; surgeon William Stewart Halsted, a rather shy taciturn reclusive and closet drug addict who could be very remote with students and had his laundry done in Paris, France; internist William Osler, quick witted renaissance man who always de-

lighted in practical pranks at the expense of his colleagues and patients; and gynecologist Howard Kelly, remarkable family man, fast and innovative with a scalpel, snake collector, and evangelical zealot intent on emptying Baltimore brothels and saving both body and soul. The individual accomplishments of each of these physicians to their individual disciplines in particular and medicine in general are numerous and well catalogued elsewhere.<sup>4,5,6,7,29</sup>

The opening of The Johns Hopkins Hospital was delayed for thirteen years after the opening of the University in 1876. This delay enabled William H. Welch, the new dean and first professor at the School of Medicine, time to recruit the other three professors and to get his pathology program up and running before the hospital wards and medical school opened. Likewise, the School of Medicine opened four years after the Hospital, and this unanticipated lag allowed the innovative residency system time to be properly rooted before the first medical students marched in. Yet another bonus of this delay was that William Osler was afforded ample time to write his classic textbook, *The Principles and Practice of Medicine*.

These delays were caused by the slow progress of the physical plant construction. This in turn was due to the fact that Johns Hopkins had categorically specified in his will that the \$2 million project would be funded solely by interest from half of the \$7 million endowment. Simply put the trustees were prohibited from dipping into the principal. As a result the diligent trustees let construction proceed only as far as the interest from the preceding year would let them go. Construction was also hampered by the unexpected discovery of quicksand and an underground stream running through the property, complicating laying down stable foundations in a timely manner. At the completion of the Hospital buildings only half of the original trustees were still alive.

### The Friday Evening Group

Mary Elizabeth Garrett was born in Baltimore on March, 5, 1854. She was the youngest child and only daughter of John Work Garrett, president of the Baltimore & Ohio Railroad, friend, as well as trustee to Johns Hopkins's endowment. She was brought up in an opulent mansion on Mount Vernon Place in Baltimore. By many accounts, Mary Elizabeth Garrett was the favored child. Her father often said, “*I wish Mary had been born a boy!*” While still a teenager, the father began including her in his travels and business meetings in the United States and abroad. Garrett greatly admired his daughter's business sense and keen intellect but would not support her quest for a college education. In her role as “Papa's secretary,” Mary Elizabeth Garrett met the titans of corporate America – Carnegie, Morgan, Vanderbilt, Fiske, and Gould, and, even at an early age, she learned and absorbed lessons that would guide her on how to use great wealth to advance women's causes through effective strategy, perseverance, clarity of vision, and seizing opportunities at the right time.

Mary Elizabeth Garrett grew up with a group of like-minded girlfriends. This group of friends included M. Carey Thomas, Mamie Gwinn, Elizabeth “Bessie” King, and Julia Rogers. Most of the women came from Quaker backgrounds. These five friends had been reared in privileged circumstances and their fathers, except that of Julia Rogers, served as trustees of the Johns Hopkins University, the Johns Hopkins Hospital, or both. In their late teens and early 20s this group of high-minded young Baltimore women started to meet regularly to discuss literature, philosophy, and social issues. They referred to themselves as the “Friday evening” group, since they met on the second Friday of each month.

The Friday Evening Group members all resolved never to get married. These somewhat “liberated” individuals felt that married women of their time were in bondage to their husbands, and this group of women preferred freedom rather than marriage. Mamie Gwinn would be the only one to break this vow, but only after she and Carey Thomas had lived in a “Boston marriage” for some 25 years. The term “Boston marriage” came to be used, apparently, after Henry James’ book, *The Bostonians*, (1886-87), which detailed an ambiguous marriage-like co-habiting relationship between two women. In the 19th century, this term was used for households where two women lived together in a romantic relationship, independent of any male support. It still continues to be debated whether these relationships were lesbian in the sexual sense or not.

Mamie Gwinn married Alfred Hodder, a fellow English professor at Bryn Mawr, who had to divorce his (common-law) wife to marry Mamie. This caused a mini-scandal from which Gertrude Stein, who had flunked out of the Hopkins medical school and knew the Friday Evening Group characters, is believed to have based her early unpublished work, *Fernhurst* (1904). This novella fictionalizes the ménage à trois among M. Carey Thomas, then dean of Bryn Mawr College, Mamie Gwinn, and Alfred Hodder, a longtime friend of Stein’s. The presence or absence of sexual activity in the Mamie-Carey relationship, or later in the Garrett-Carey combination, may never be known, but the emotional intensity of these women and their attachment to one another is clearly evident in the multiple letters and personal correspondence among themselves.<sup>30</sup>

Martha Carey Thomas (1857–1935) was born to a Quaker family in Baltimore and educated in Quaker schools. Her father, James Carey Thomas, was a physician and one of the original Johns Hopkins trustees. Her mother, Mary Whitall Thomas, and her mother’s sister, Hannah Whitall Smith, were very active in the Women’s Christian Temperance Union (WCTU). As a result M. Carey’s interest in women’s rights began early and was encouraged by her mother and aunt to the dismay of her father. The father also opposed her wish to enroll at Cornell University, one of the few coeducational colleges at that time. Again supported by her mother, she prevailed and graduated with a bachelor’s degree in 1877.

She pleaded with Daniel Coit Gilman, university president, to pursue post-graduate studies at the then all-male Johns Hop-

kins. She was allowed private tutoring in Greek but no formal classes. Again with her father’s reluctant permission she took off for Europe, living with her close friend, Mamie Gwinn. Carey enrolled at the University of Leipzig. However, she had to transfer to the University of Zurich because the University of Leipzig would not award a Ph.D. to a woman. Moreover, in order not to “distract” male students the University of Leipzig had forced her to sit behind a screen during classes! Finally, she became both the first woman and foreigner graduating *summa cum laude* at Zurich. Coming back from Europe she successfully lobbied to become the dean, then president, of the of the newly created Quaker women’s college, Bryn Mawr.

M. Carey Thomas was an elitist and an advocate of the eugenics movement. She also had jingoistic and racist tendencies, endorsing strict immigration quotas, and subscribed to the “intellectual supremacy of the white race.” However, throughout her life she maintained an active role in women’s rights. She supported the Progressive Party in 1912 and did work for the National American Woman Suffrage Association. She continued to believe that, if possible, women ought not to get married, but if married they should continue with their careers. During her tenure at Bryn Mawr she worked hard to make the institution a center of educational excellence for women.

## One Wealthy Woman

When John W. Garrett died in 1884, Mary Elizabeth Garrett had reason to be worried and apprehensive. While she had played an active role in her father’s business while alive, she now passively watched her brothers carve out the family business. All of sudden reality sank in. She was a woman with no college degree, no career, and no husband in a man’s world. However, the father who had discouraged her in education and never forced a suitor on her was generous to her in his will. He left his daughter a sizable fortune. She inherited one-third of his estate, acquiring \$2 million and three of his lavish estates. She immediately was transformed to become one of the wealthiest women in the United States as well as one of the largest female landowners in the country. She immediately put this fortune to work. The first project of that philanthropy was the Bryn Mawr School.

Shortly after assuming her inheritance, the Friday Evening Group embarked on establishing a school for the education of girls in Baltimore. It was decided to name the new school after the Philadelphia College with the anticipation that the school would steer many of its students to the college. To that end matriculation from the Bryn Mawr School consisted of passing the entrance examinations to the Bryn Mawr College. Mary Garrett personally bankrolled and oversaw the construction of the buildings, spending over a half million dollars on the school.<sup>8</sup> She saw to the decoration of the new school with selected statuary, lithographs of well-known European paintings, and even a copy of the Parthenon frieze. She was personally involved in the selection of exercise equipment for the new gymnasium. She was responsible for all of the school’s bills. She was the president of the committee running the school while the Friday Evening Group was the *de facto* governing body of the new school.

## Mary Elizabeth Garrett and the Hopkins Board of Trustees: A Lesson in Coercive Philanthropy

As noted above it was not the intention of Johns Hopkins University to admit women to its new medical school. Additionally, no one had addressed the admission criteria for these incoming medical students. We have also noted that the Hospital opening was delayed because of the construction finances tied to the B&O railroad stock interests. It has been the plan for the School of Medicine to open at the same time as the Hospital in 1889. This was not to be. There was no money. The railroad stock which had been paying out a decent annual dividend of 8% to 10% first lowered the dividend in the late 1880s and then stopped dividend payments completely. This loss of stock dividend decreased the University's annual income by 75%, slashing more than \$155,000 from an operating budget of \$200,000. Additionally, the Trustees were anticipating a deficit of \$98,000 for the coming year.

These were indeed hard times and the Trustees considered disregarding the founder's directive of keeping the stock and using the interest. However, they were warned that such a move would give control of the B&O to the Richmond and West Point Terminal Company and bring financial havoc to the city of Baltimore. In 1888 Gilman confided to the Hospital Trustees that they needed to look for an outside source to fund the medical school, since its special earmark had dwindled to \$67,480.42 before anything was built. In the meantime, Harvard, McGill, and the University of Pennsylvania were trying hard to woo away the priceless four professors.

Since their fathers were on the Hopkins board, the Friday Evening Group were privy to the inside information about this crisis as well as the Board's deliberations. Mary Elizabeth Garrett realized that this financial crisis offered a unique opportunity to advance the cause of women's education while at the same time rescuing Hopkins from its financial dilemma. The Friday Evening Group decided to launch a Women's Medical Fund Campaign. The purpose of the campaign was to raise a sum of money sufficient to offer to the Trustees of the University in order to open the School of Medicine on condition that women are admitted to the school on the same basis as men.

The Women's Medical School Fund committee would ultimately encompass 15 chapters across the country and enlisted a number of nationally prominent women. The list of female volunteers making donations and/or joining the efforts of the committee included Caroline Harrison, wife of the sitting president, Benjamin Harrison; Jane Stanford, wife of Leland Stanford, a U.S. senator and founder of Stanford University; and Bertha Palmer, prominent in Chicago society circles and married to Potter Palmer, who had built the Palmer House Hotel; Louisa Adams, wife of President John Quincy Adams; Julia Ward Howe, the abolitionist who wrote "The Battle Hymn of the Republic;" Alice Longfellow, daughter of poet Henry Wadsworth Longfellow; and Sarah Orne Jewett, who featured strong and

independent women in her novels. Among the recruited female physicians was Emily Blackwell, who, with her sister Elizabeth Blackwell and Marie Zakrzewska, had opened in New York the first American hospital for and staffed by women and Mary Putnam Jacobi, organizer of the Association for the Advancement of Medical Education for Women.

They also put their trustee fathers to work. Charles J. M. Gwinn, Mamie Gwinn's father, a lawyer with strong sympathies for women's issues, became a liaison between the Women's Medical Fund Committee and the Board of Trustees. He would in fact end up drafting the stipulations of the gift and would provide legal counsel to Mary Garrett in her final negotiations with the trustees.

Initially, M. Carey Thomas took the lead in negotiating with President Gilman and the Hopkins trustees. However, things did not go well. In her own words she felt that "*many of the trustees, and Gilman above all, seemed to prefer not to open the school at all if it meant that women were to be admitted.*" Nevertheless by October 1890, within six months of its inauguration, the committee had raised \$111,300, which included a donation of \$47,787.50 from Mary Elizabeth. On Oct. 28, 1890, the trustees formally accepted both the money and the stipulation about admitting women on an equal basis with men. The trustees accepted but threw down another gauntlet. Prices had gone up, and the medical school could not open until it had \$500,000.

Miss Garrett again stepped in with an offer the University could not refuse. She offered an additional \$100,000 with other conditions. To get the money, the trustees themselves would need to raise the balance to meet the \$500,000 endowment by the following February, and the medical school would open by October 1892. Gilman, the university president was secretly looking for and hoping that a male donor would step forward to the rescue. He proposed that the medical school would be named in honor of such a donor. Such a donor did not materialize, and neither the university nor the Women's Medical Fund Committee was able to meet the new target.

Mary Elizabeth Garrett met with Charles Mayer, a co-executor of her father's estate, to discuss her new plan. They enlisted Mr. Gwinn to draft the proposals and present them before the Trustees. Mary offered to give the university \$306,977 and not one penny more than the precise amount needed. She would pay annual installments of \$50,000 each, beginning in January 1894, the year after the school opened, until the final payment of \$6,977, to be paid on January 1, 1899. Since the payment was in installments the university would get 5% interest each year. She also demanded that \$50,000 of the \$500,000 endowment be "expended on a building or buildings . . . in memory of the contributions of the Committees of the Women's Medical School Fund . . . [and it] shall be known as the Women's Fund Memorial Building." However, this particular new offer came in with quite astounding and very revolutionary stringent conditions.



The new stipulations included the following:

1. That women be admitted to the school on equal terms as men and “*enjoy all its advantages on the same terms as men*” and be “*admitted on the same terms as men to all prizes, dignities or honors that are awarded by competitive examination, or regarded as rewards of merit*”;
2. “*That the Medical School of the university shall be exclusively a graduate school*” and “*that it shall provide a four years’ course, leading to the degree of Doctor of Medicine*”;
3. That requirements for admission specify that applicants have a bachelor’s degree and proof that they have satisfactorily completed courses in physics, chemistry and biology, and have a “*good reading knowledge of French and German.*”

Furthermore, she concluded by adding an escape clause “*That in the event of any violation of any of the aforesaid stipulations the said sum of \$306,977 shall revert to me, or such person or persons, institution or institutions, as I by testament or otherwise may hereafter appoint*”.<sup>31</sup>

On Christmas Eve 1892, the trustees voted to accept Mary Garrett’s proposals. These new stipulations by the Women’s Medical Fund Committee were quite revolutionary and more radical than the initial proposal to admit women. The medical faculty, particularly Welch and Osler, were very concerned that the admission criteria were being set too high and that few applicants could qualify. This discomfort generated Osler’s now legendary quip to Welch, “*We were fortunate to get in as professors; we would never have made it as students.*” Gilman had another concern with Garrett’s proposals. He was afraid that these stipulations could hamstring the university’s prerogative in making future changes. After the trustees’ vote, the medical faculty dispatched Welch as intermediary to negotiate with Mary Garrett, but to no avail. In a letter Miss Garrett pointed out that the terms of her gift would not interfere with university operations. Finally, everyone was satisfied, and the long-awaited medical school would open that October.

Abraham Flexner was a high school principal who had reported on the status of Colleges in the United States. Based on this report and the recommendation of his brother, a Hopkins trained physician and pathologist, Flexner was chosen by the Carnegie Foundation to do a study of American Medical Education. After visiting all of the 155 American medical schools then in existence in 1910 Abraham Flexner generated his now famous report.<sup>2</sup> Using the Johns Hopkins University School of Medicine as the ideal, Flexner issued his bold recommendations: Admission to a medical school should require, at minimum, a high school diploma and at least two years of college or university study, primarily devoted to basic science. The length of medical education should be four years, and its content should be what the Council of Medical Education (CME) agreed to in 1905. Proprietary medical schools should either close or be incorporated into existing universities. Medical

schools should be part of a larger university, because a proper stand-alone medical school would have to charge too much in order to break even.

With amazing speed all state medical boards gradually adopted and enforced the Flexner Report’s recommendations. In 1904 before the report, there had been about 160 medical-granting institutions with more than 28,000 students. After the Flexner report, there were only 85 medical schools in 1920 educating only about 13,800 students. Only 66 medical schools were left by 1935 and, of these, 57 were part of a university. Mary Elizabeth Garrett and the Friday Evening Group had won and changed the face of American medicine.

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