

## **ACADEMIC AMBITIONS: THE FIRST FIFTEEN WOMEN WHO EARNED PH.D.'S AT THE UNIVERSITY OF CALIFORNIA—by KAREN MERRITT, Ph.D.**

Between 1898 and 1916, fifteen women earned Ph.D. degrees at the University of California. UC was somewhat late on the scene, as a cumulative group of almost 230 women had earned these doctoral degrees from American universities by 1900.<sup>i</sup> Yale University, the University of Chicago and Cornell University led the way. Between 1898 and 1910, only three women received UC Ph.D.'s. From 1910 to 1916, the pace picked up. We take a preliminary look at what the first fifteen had in common, a surprising difference between this group and their American predecessors, and the circumstances and careers of UC's Ph.D. women, insofar as information about them is available.

### **The Context**

A powerful theme in women's experiences as students and graduates during UC's first decades was education in the schools. Geraldine Clifford provides an overview of the rise of UC as a force in California school development and the advancement of school teaching as a profession dominated by women.<sup>ii</sup> She begins with the eight women admitted by the Board of Regents in 1870, the second year of instruction at UC. The first UC undergraduate woman, Josephine Lindley, married and was widowed by the first Latinx UC student, Manuel Corella. While he was a student, the Regents hired Corella to teach Spanish. Josephine Lindley, who had lived for several years in Mexico, offered to do likewise, but the Regents were not prepared to hire a woman.<sup>iii</sup> Lindley would go on to open the Corella Phipps School of Modern Languages in Los Angeles, offering language instruction in Spanish and French. The advertisement for the school listed UC faculty whose testimonials attested to her subject matter competences. They included one from Paul Pioda, a former schoolteacher who was UC's first modern languages faculty member.<sup>iv</sup>

During UC's first three decades, as the numbers of women students grew, they increasingly sought preparation to become schoolteachers. During the same period, UC faculty, many of whom came from school teaching backgrounds, promoted development of public high schools. There was a strong element of self-preservation in doing so: the relatively small numbers of young Californians prepared for university work accounted for the small student bodies of the early years. Faculty investment in expanding secondary education included visiting schools, accrediting preparatory curricula, and attending teacher conferences. The number of certified teachers graduating from UC, men as well as women, increased.

A number of UC historians have pointed out the marginalized status of early women students at UC.<sup>v</sup> Hostility from some male students and faculty colored their experience, though the *Blue and Gold* yearbooks suggested more teasing than anything else. Nevertheless, as women expanded their presence in coursework that would prepare them for school teaching, they also pushed for more inclusion in university life. Part of being a student on a small campus located in

## FIRST FIFTEEN WOMEN RECEIVING PH.D.'S FROM THE UNIVERSITY OF CALIFORNIA

1. **1898 Milicent Washburn Shinn (1858-1940)**--Ph.D. in Pedagogy, AB 1880
2. **1900 Jessica Blanche Peixotto (1864-1941)**—Ph.D. in Economics and Political Science, PhB 1894
3. **1902 Alice Robertson (1849-1922)**—Ph.D. in Zoology, BS 1898, MS 1899
4. **1910 Edna Earl Watson Bailey (1883-1973)**--Ph.D. in Zoology and Philosophy, BS 1906, MS 1907
5. **1911 Annie Dale Biddle Andrews (1885-1940)**—Ph.D. in Mathematics, BA 1908
6. **1912 Myrtle Elizabeth Johnson (1881-1967)**—Ph.D. in Zoology, BS 1908 math/zoology, MS 1909 zoology/teaching credential, 1901 teaching credential (San Diego State Normal School)
7. **1912 Lillian Ruth Matthews (1880-?)**—Ph.D. in Economics, PhB 1903 (University of Iowa)
8. **1913 Emma Phoebe Waterman Haas (1882-1967)**—Ph.D. in astronomy, 1904 AB and 1906 MA (Vassar College)
9. **1913 Anna Estelle Glancy (1883-1975)**—Ph.D. in Astronomy, AB 1905 (Wellesley College).
10. **1914 Frances Lytle Gillespy (1886-?)**—Ph.D. in English (Philology), Class of 1912
11. **1914 Rosalind Wulzen (1886-ret. 1954)**—Ph.D. in Physiology, 1909 BS, 1910 MS
12. **1915 Olga Louise Bridgman (1886-1974)**—Ph.D. in Psychology, 1908 AB and 1910 MD (University of Michigan), MA 1914
13. **1915 Helen Margaret Gillkey (1886-1972)**—Ph.D. in Botany, 1907 BS and 1911 MS (Oregon Agricultural College)
14. **1915 Olive Swezy (1878-1963)**—Ph.D. in Zoology, 1913 BS, 1914 MS
15. **1916 Irene Agnes McCulloch (1885-1987)**—Ph.D. in Zoology, 1913 AB and University Teachers Certificate (University of Kansas)

Note: Unless otherwise indicated, undergraduate and masters degrees listed above were earned at the University of California.

Source for the first fifteen women to earn University of California Ph.D.'s: *Directory of Graduates of the University of California, 1864-1916*. Berkeley, CA: California Alumni Association, 1916, pp. 264ff.

<https://catalog.hathitrust.org/Record/007696745>

a barely recognizable town meant that both women and men were vigorously applying themselves to creating a campus culture. Examples abound. By the 1880's, the formerly all-male Neolaean Literary Society and Glee Club opened its doors to women. The Durant Rhetorical Society followed suit. The new publication, *The Occident*, had both male and female editors. Women filled roles as class and club officers, and made presentations at Class Days, and Charter Day and Commencement ceremonies. Eight of the ten women graduating with the Class of 1884 declared their politics to be "women's rights."<sup>vi</sup> During the 1890's, UC women successfully pushed for access to campus physical education facilities, built for men only.<sup>vii</sup> UC's first Women's Physician, Mary Ritter, who aided the campaign, observed, "When a woman wants a thing, she wants it"—likely a play on the double meaning of "want" as "lack" and "desire."<sup>viii</sup> A spine of determination to broaden the scope of women's campus lives runs through these early decades.

### **The First Fifteen**

Entry into programs leading to a Ph.D. represented the next UC hurdle for women drawn to advanced research and an academic life. Between 1898 and 1910, only three women had completed UC Ph.D. degrees in unrelated fields. We might speculate that finding faculty to supervise their doctoral study proved to be a barrier. The first fifteen shared traits of energy and determination, pioneering doctoral achievement in their fields and opening doors to women who would follow in their academic footsteps.

Perhaps symbolic of the strong UC concern for school building and school teaching, the first woman to earn a UC Ph.D. was Milicent Washburn Shinn in the field of Pedagogy.<sup>ix</sup> Of the Ph.D.'s granted to women by American universities in the last part of the nineteenth century, Pedagogy (listed in Rossiter as Education) was the third most frequently chosen field, after English and Latin/Greek.<sup>x</sup> UC's Department of Pedagogy began in 1893 with the hiring of Elmer Ellsworth Brown from the University of Michigan, one of the institutions that influenced UC during its early years.<sup>xi</sup> Shinn had earned a UC AB in 1880 and spent 1883-1894 as editor and a writer at California's *Overland Monthly* newspaper. She pursued a distinguished research career as a pioneer in the study of early childhood development and psychology. Her observation of the first years of her niece led to her dissertation, *Notes on Development of a Child*. She continued her independent research on early childhood by engaging a group of women college graduates who provided her with observations of their small children. She served as a teacher within her own family.

In contrast, Jessica Peixotto, the second woman to earn a UC Ph.D., followed completion of her degree with a typical academic career.<sup>xii</sup> Her doctoral professor Bernard Moses had come to UC in 1876 and initially taught economics, history, political science, and jurisprudence. Peixotto had to overcome her family's opposition to her attending the university. She persisted, earning a UC PhB in 1894 and continuing to a Ph.D. in Social Economics in 1900. She and UC's first

woman Ph.D. were acquainted: while studying in France, Peixotto corresponded with Milicent Shinn.<sup>xiii</sup>

UC's first thirty years saw multiple instances of students with both undergraduate and advanced degrees from UC becoming university instructors and professors. Peixotto was the first woman to follow this career path. Beginning as a lecturer in Contemporary Socialism, Peixotto collected some significant firsts, including first woman to achieve a full professorship at UC, in Social Economics, and the first woman to chair a department, Economics, from 1921-22. In 1936, UC awarded her an honorary Doctor of Laws. As with Shinn and several others among the first fifteen, among Peixotto's wide-ranging research interests, children and families attracted her attention. She served on state and national child welfare boards. She is credited with pioneering Social Welfare as a field of study at UC.

As the third woman to receive a Ph.D. at UC, in 1902, Alice Robertson opens an intriguing window on the first fifteen as a group. While the largest numbers of women who earned Ph.D.'s at American universities in the late 1800's were in the fields of English, Latin/Greek and Pedagogy (Education), only one woman each received a UC Ph.D. in English and Pedagogy before 1916. Instead, ten of the first fifteen completed their doctorates in the sciences and mathematics. Of those ten, five did their doctoral work in Zoology as part of the early UC marine sciences enterprise that would eventually become the Scripps Institution of Oceanography.

Over the years, science and mathematics fields have presented special difficulties to doctorate-seeking women. As recently as 2020, the documentary film, *Picture a Scientist*, has probed the combination of overt and subtle discrimination encountered by women seeking advanced degrees and careers in the sciences.<sup>xiv</sup> Thus, the preponderance of science and mathematics degrees among the first fifteen is particularly intriguing.

Looking back at UC's founding years, we find that these fields, together with the "arts" of agriculture, engineering, and mining, overshadowed the classical letters fields. California's first commission to advise the legislature on a new state university was chaired by Josiah Whitney, director of the California State Geological Survey. The commission's 1864 report recommended a museum-centered entity that would hold the Survey's field collections and seed a science-oriented institution. The legislature largely set aside these recommendations, which would be superseded in later reports. However, there was one notable exception.<sup>xv</sup> The commission's recommendations on faculty hires, based on the ground-breaking courses of study at Rensselaer Polytechnic Institute and the scientific schools at Yale and Harvard, were strongly mirrored by the UC Regents' choices at opening and during the first three years. Geraldine Clifford's study of the rise of teacher education at UC makes the case that women preferentially sought out fields in the letters, pushing the curriculum toward more balance between sciences and letters.<sup>xvi</sup>

The strong showing of science and mathematics among the first fifteen suggests a continuum with those first UC years and a pattern paralleling that of men earning UC's first Ph.D.'s.<sup>xvii</sup>

When we look at the development of UC doctoral education overall, Ph.D.'s had been granted only occasionally before Shinn's 1898 doctorate. Between 1885 and 1894, a scattering of men earned Ph.D.'s in unrelated fields. Starting in 1896, one to three Ph.D.'s were conferred each year and by 1905, that number grew to five to seven per year. In 1912, the number began to increase markedly.

The sciences and mathematics dominated throughout. By 1916, of the 16 Ph.D.'s granted to men, 14 were in science fields and mathematics, while the other two were in history. However, there was little overlap between the science fields pursued by the men compared with those pursued by the first fifteen women. Half of the Ph.D.'s granted to men in 1916 were in chemistry, two were in physics, and one was in geology. The overlapping doctorates were in astronomy and mathematics.

What accounts for the fact that five of the first fifteen women chose marine science-oriented Zoology? Arguably, we are seeing a unique early doorway through which ambitious women found opportunity for entry into academic life. Four of the five went on to faculty careers and the fifth continued as a researcher at Scripps. Who and what made this possible?

The founder of UC's marine biology research station, William Ritter, began his professional life as a Wisconsin schoolteacher.<sup>xviii</sup> He was drawn to study at the University of California upon reading founding faculty member Joseph Le Conte's geology textbook, one of America's most influential academic publications of the late 19<sup>th</sup> century. Ritter moved to California with the aim of earning enough money there as a schoolteacher to enroll as an undergraduate at UC and study with Le Conte. He received a BA in 1888, then completed advanced degrees at Harvard on a scholarship from the Harvard Club of San Francisco. Joseph Le Conte hired him to become the first chair of Zoology.<sup>xix</sup>

On his return from Harvard to California in 1891, William Ritter married Mary Bennett, one of California's early woman physicians.<sup>xx</sup> She too had earned money as a schoolteacher to pay for her education. Upon marriage, she continued her medical practice in Berkeley. In addition, she joined forces with UC's first woman Regent, Phoebe Apperson Hearst,<sup>xxi</sup> to aid women students in their quest for access to physical education facilities and improved living conditions. With Hearst funding her salary, Mary Ritter became UC's first Women's Physician. Hearst would also be a supporter of women seeking admission into Ph.D. programs.<sup>xxii</sup>

It is significant that on their honeymoon in San Diego, Mary assisted William in collecting marine specimens in support of his dissertation work. Three women Ph.D. students would follow as his assistants and become Mary's friends during the period when the Ritters used summer field sessions up and down the California coast to search for a permanent marine sciences station site. The three completed their Ph.D.'s between 1902 and 1912.

Before coming to the University of California, Alice Robertson taught school in Pennsylvania from 1871-1893.<sup>xxiii</sup> She earned her undergraduate and graduate degrees at UC and held a

Le Conte fellowship. After earning her Ph.D. with a specialization in embryology, she taught at UC as an Assistant in Women's Hygiene. She resigned to accept a professorship in Zoology from Wellesley College, where she chaired the department from 1909-1918. In her letter of resignation to UC President Benjamin Ide Wheeler, she cited the lack of opportunities for women to advance their careers at UC as a reason for leaving. Nevertheless, President Wheeler left the door open for her to return. She did indeed return to Berkeley a year before she died, welcomed by the Assistant Director of Scripps, Charles Kofoid, to whose research she contributed.

The next two women to earn UC Ph.D.'s under William Ritter's supervision both had school teaching in their backgrounds. Edna Earl Watson Bailey studied with both Ritter and Kofoid and held a Phoebe Apperson Hearst Scholarship during her student days.<sup>xxiv</sup> Her career was varied. She chaired the science department at University High School in Los Angeles and won a Laura Spelman Rockefeller fellowship for a sabbatical year at Columbia University. In 1927, she was appointed to the UC faculty in Education, from which she retired in 1951. In 1930 she was named chair of the White House Committee on Child Welfare and later co-founded UC's Institute on Child Welfare. She and her husband, a physician and former William Ritter student, had two children. Their marriage was not a long one: her husband died in 1919.

Watson Bailey's Ph.D. in both Zoology and Philosophy led to a professional association with William Ritter that lasted until his death and beyond. As a disciple of Joseph Le Conte, one of America's last great generalists in the sciences, Ritter speculated on the nature of organismic unity and, like Le Conte, he also probed the intersection of science and religion. In her autobiography, Mary Ritter provides insight into the importance of Watson Bailey's education in philosophy to Ritter's speculative work. Watson Bailey not only offered expertise in interpreting and translating classical philosophical texts, she shared, according to Mary, a kindred speculative bent.<sup>xxv</sup> Ritter embarked on what he considered his magnum opus, *The Unity of the Organism*, with Watson Bailey. In addition to her own research on the education of children, Watson Bailey collaborated on and co-authored research publications with Ritter for the rest of his life. When he died, she served as his literary executor.

Myrtle Elizabeth Johnson was Watson Bailey's fellow doctoral student and like her, enjoyed a long academic career. Johnson held a teaching credential from San Diego State Normal School—San Diego State University to be—and had a wide variety of school teaching experiences before completing her undergraduate and graduate degrees at UC. Mary Ritter describes how she and William took the two women doctoral students into their home to save them a long and difficult commute to the research station.<sup>xxvi</sup> Johnson worked with both William Ritter and Harry Torrey, another recipient of a UC Ph.D. who ended up on the faculty. She became the first woman Ph.D. holder on the San Diego State faculty and chaired Biology there for two decades.

The professional trajectories of the other two Zoology Ph.D. women differed from one another's. Earning their Ph.D.'s in 1915 and 1916, both did their doctoral work with Scripps Assistant Director Charles Kofoid. Olive Swezy followed a research career at Scripps. Through 1926, she was a frequent co-author on Kofoid's research articles, as well as his major publication, *The Free-Living Unarmored Dinoflagellata*.<sup>xxvii</sup>

In contrast, having earned a University of Kansas teaching credential, Alice McCulloch, went on to a notable academic career, as did Robertson, Watson Bailey, and Johnson.<sup>xxviii</sup> After a stint as a Zoology Assistant at UC, McCulloch joined the University of Southern California faculty as a marine biologist. She succeeded in turning a poorly funded program into a major center of teaching and research by attracting a wealthy and generous patron, George Allen Hancock. An avid researcher even after retirement, she was honored by USC with the naming of the McCulloch-Crosby Chair in Marine Sciences.

Four of the other five science and mathematics Ph.D.'s can be considered in pairs owing to special affinities. Two women shared the honor of being the first of their gender to earn UC Ph.D.'s in Astronomy, their degrees conferred on the same day in 1915. From that day on, their paths diverged widely. Emma Phoebe Waterman Haas had prepared herself for a career as an astronomer even before entering graduate study.<sup>xxix</sup> After finishing her bachelor's and master's degrees at Vassar College, she took a job as a "calculator" at the Wilson Observatory in Los Angeles. As a Ph.D. candidate, she worked at UC's Lick Observatory and earned special praise from Professor Armin Otto Leuschner, head of Astronomy at UC. On her way to a position at an observatory in Argentina, she met Otto Haas and married him the following year. She continued her astronomical work in collaboration with professional astronomers at the American Association of Variable Star Observers in Cambridge, Massachusetts. A gift from the Haas family to the National Air and Space Museum in Washington, DC has created the Phoebe Waterman Haas Public Observatory in her honor.

Anna Estelle Glancy also settled in Massachusetts, her home state, after completing her UC Ph.D.<sup>xxx</sup> However, she became the only woman of the first fifteen to follow a career in industry. At the American Optical Company, she continued to publish astronomical research, some co-authored with Armin Leuschner, and she invented and patented a series of lens systems and instruments.

The eleventh and thirteenth women to earn Ph.D.'s at UC followed separate scientific paths but both made their careers at Oregon Agricultural College, which became Oregon State University. Rosalind Wulzen completed three UC degrees, culminating in a Ph.D. in Physiology.<sup>xxxi</sup> Her research led to the discovery of an anti-joint-stiffness agent that was named after her. During her student years, she was head of Biology at Mills College, then an instructor in Physiology for fourteen years at UC. From 1933-1954, she held a professorship in Zoology at Oregon State University, also teaching physiology at the University of Oregon. In 1953, the Oregon Academy of Science awarded her recognition as an Outstanding Oregon Scientist.

In contrast, Helen Margaret Gilkey spent almost all of her higher education life at Oregon State University, where she earned her bachelor's and master's degrees in Botany.<sup>xxxii</sup> She was the first woman to receive a UC Ph.D. in Botany and worked as a scientific illustrator on Willis Linn Jepson's *Manual of Flowering Plants in California*.<sup>xxxiii</sup> She returned to Oregon Agricultural College as the curator of the herbarium. An expert on truffles, she was active in research and publication throughout her career and had a truffle genus named after her. In 1952, the Oregon Academy of Science recognized her as an Outstanding Oregon Scientist.

Annie Dale Biddle Andrews was the fifth woman Ph.D. recipient at UC and first in Mathematics, supervised by Professors Derrick Lehmer and Mellen Haskell.<sup>xxxiv</sup> She continued her research and professional positions while an occasional instructor at UC. She was married and had two children.

The remaining women of the first fifteen completed degrees in unrelated fields. That said, Olga Louise Bridgman, who earned her UC Ph.D. in Psychology, might well be added to the science group introduced above.<sup>xxxv</sup> She held AB and MD degrees from the University of Michigan and worked as a physician before coming to UC. Professors George M. Stratton and Warner Brown supervised her doctoral work and she began a UC professorial career teaching abnormal psychology and pediatrics. She held academic posts at both the San Francisco and Berkeley campuses. She also served in several public health agencies and was psychologist to the San Francisco Juvenile Court.

Like Olga Bridgman, Lillian Ruth Matthews held a UC faculty position and did governmental work as the children's agent on the California State Board of Control.<sup>xxxvi</sup> She worked with Professors Carl Plehn and Adolph C. Miller in completing her 1912 Ph.D. in Economics. She also credited the UC Economics Committee with supporting her research, an acknowledgment in her 1913 publication, *Women in the Trade Unions in San Francisco*.

Among the first fifteen, the sole recipient of a Ph.D. exclusively in the letters was Frances Lytle Gillespy.<sup>xxxvii</sup> Part of UC's stellar undergraduate Class of 1912, she graduated Phi Beta Kappa, contributed to the humor magazine *Pelican* and to *The Occident*, was on the Women's Day staff, and won the English Club Short Story prize. A specialist in Philology, she acknowledged the support of English Professors Charles Gayley, Walter Morris Hart, and Chauncey W. Wells. She published research written in German as well as English.

It is a sign of the considerable accomplishments of these women that references to all of them are readily available on the Internet. Some are represented through detailed articles, others through references limited to their research work. Nevertheless, we are left with many questions. Given what we know of decades of women's struggles to gain access to and equality in doctoral programs, what barriers did the first fifteen overcome to achieve their degrees and careers? What roles did their faculty supervisors play? What kinds of experiences did they have in classrooms and laboratories with fellow students? Notably, eight of the first fifteen had



professorial careers, four of those at UC. Of those with post-Ph.D. careers, only one of the fifteen worked outside academia. What contributed to or detracted from their success? Many of them left professional papers that have been archived by their institutions. Further research in those collections should hold answers to some of these questions.

All but three among the first fifteen were unmarried, a pattern seen among women of that era who became schoolteachers or entered other professions. The three who married each had two children, but their paths diverged widely. Watson Bailey fulfilled a professorial career at UC after her husband's death. Waterman Hass gave up a career in astronomy when she married, but continued an active research life as a "citizen scientist." Less is known about Biddle Andrews. She was an Instructor in the UC Mathematics Department for 17 years, evidently on a part-time basis, until she was "dismissed" in 1933.<sup>xxxviii</sup>

What is clear from this preliminary look at the first fifteen is that they were women of energy and accomplishments. Samples of their recognitions and honors have been noted above. In addition, several of the women who chose academic careers retired with emerita status. Typical of both the unmarried and married first fifteen, they were active outside their careers in women's clubs, charities and organizations that promoted the advancement of women. Nearly all lived into their 70's or beyond. Their accomplishments were beacons for the women who shared their passion for research as well as the academic life.

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<sup>i</sup> Margaret W. Rossiter. Doctorates for American Women, 1868-1907. *History of Education Quarterly*, 22:2 (Summer, 1982), pp. 159-183. <https://www.jstor.org/stable/367747>

<sup>ii</sup> Geraldine Jonçich Clifford. "Equally in View" The University of California, Its Women, and the Schools. *Chapters in the History of the University of California*, Vol. 4. 1995. [https://cshe.berkeley.edu/sites/default/files/4equally\\_in\\_view.pdf](https://cshe.berkeley.edu/sites/default/files/4equally_in_view.pdf)  
See also Verne A. Stadtman. *The University of California 1868-1968*. (New York, NY: McGraw-Hill, 1970), pp. 93-4, 176-77, et al.

<sup>iii</sup> Clifford, p.19. For more on Manuel Corella, see Donald J. Leon, Manuel M. Corella: The Broken Trajectory of the First Latino Student at the University of California, 1869-1874. *Aztlán* 26:1 (Spring 2001), pp. 173-80.

<sup>iv</sup> *Los Angeles Herald*, I:22 (October 26, 1873). Advertisements, p. 1.

<sup>v</sup> See, for instance, Clifford p.48, citing the derogatory term that labeled UC women students "pelicans." See also Geraldine Jonçich Clifford, "No Man and No Thing Can Stop Me"—Fannie McLean, Woman Suffrage, and the University of California. *Chronicle of the University of California* I:2 (Fall 1998), pp. 83-94. Clifford quotes the satirical description of "the grade-grinding pelican" on p. 86 and notes that English professor Charles Gayley prohibited women

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from taking his advanced classes until criticism made him back off. Later he would be favorably acknowledged by the first woman to receive a UC Ph.D. in English.

<sup>vi</sup> Karen Merritt, *A University in the Wilderness: Building a Community and Culture at the New University of California*, July 2017, UC Berkeley Center for Studies in Higher Education Research & Occasional Paper Series: CSHE.9.17, pp. 4-6.  
<https://cshe.berkeley.edu/publications/university-wilderness-building-community-and-culture-new-university-california-karen>

<sup>vii</sup> Roberta J. Park. *A Gym of Their Own—Women, Sports, and Physical Culture at the Berkeley Campus, 1876-1976*. *Chronicle of the University of California*, I:2 (Fall, 1998), pp.24ff.  
[https://cshe.berkeley.edu/sites/default/files/ladies\\_blue\\_and\\_gold.pdf](https://cshe.berkeley.edu/sites/default/files/ladies_blue_and_gold.pdf)

<sup>viii</sup> Mary Bennett Ritter, *More Than Gold in California 1849-1933*. Berkeley, CA: The Professional Press, 1933, p. 202.  
[http://scilib.ucsd.edu/sio/biogr/Ritter\\_Mary\\_More\\_Than\\_Gold.pdf](http://scilib.ucsd.edu/sio/biogr/Ritter_Mary_More_Than_Gold.pdf)

<sup>ix</sup> See <http://faculty.webster.edu/woolfm/shinn.html> et al.

<sup>x</sup> Rossiter, p. 167.

<sup>xi</sup> Notably, the UC Regents began admitting women in the same year that the University of Michigan did, in 1870.

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<http://texts.cdlib.org/view?docId=hb3199n7tr&doc.view=frames&chunk.id=div00011&toc.depth=1&toc.id=> et al.

<sup>xiii</sup> Marisi Nerad. *The Academic Kitchen: a Social History of Gender Stratification at the University of California, Berkeley*. Albany, NY: State University of New York Press, 1999, p.38.

<sup>xiv</sup> <https://www.pictureascientist.com/>

<sup>xv</sup> Karen Merritt. *A Defining Time: The California State Geological Survey and its Temperamental Leader Josiah Dwight Whitney*, August 2020, UC Berkeley Center for Studies in Higher Education Research & Occasional Paper Series: CSHE 9.20, pp. 6-9.  
[https://cshe.berkeley.edu/sites/default/files/publications/rops.cshe.9.2020.merritt.adeфинingtime.8.20.2020\\_0.pdf](https://cshe.berkeley.edu/sites/default/files/publications/rops.cshe.9.2020.merritt.adeфинingtime.8.20.2020_0.pdf)

<sup>xvi</sup> Clifford, “Equally in View,” pp. 56, 58.

<sup>xvii</sup> *Directory of Graduates of the University of California, 1864-1916*. Berkeley, CA: California Alumni Association, 1916, pp. 264ff. <https://catalog.hathitrust.org/Record/007696745>

<sup>xviii</sup> [http://scilib.ucsd.edu/sio/biogr/Ritter\\_Biogr.pdf](http://scilib.ucsd.edu/sio/biogr/Ritter_Biogr.pdf) et al.

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<sup>xix</sup> Le Conte had subdivided the four fields he previously taught, Botany, Geology, Paleontology, and Zoology, into separate departments.

<sup>xx</sup> In addition to her memoir, cited in footnote viii above, see [http://scilib.ucsd.edu/sio/biogr/Ritter\\_Mary\\_Biogr.pdf](http://scilib.ucsd.edu/sio/biogr/Ritter_Mary_Biogr.pdf) et al.

<sup>xxi</sup> A schoolteacher before her marriage, Hearst became UC's first woman Regent in 1897.

<sup>xxii</sup> Rossiter, p. 170.

<sup>xxiii</sup>

[http://www.bryozoa.net/annals/annals2/annals\\_of\\_bryozoology\\_2\\_13\\_2008\\_sears\\_woollacott.pdf](http://www.bryozoa.net/annals/annals2/annals_of_bryozoology_2_13_2008_sears_woollacott.pdf)

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[http://texts.cdlib.org/view?docId=hb9k4009c7&chunk.id=div00002&brand=calisphere&doc.view=entire\\_text](http://texts.cdlib.org/view?docId=hb9k4009c7&chunk.id=div00002&brand=calisphere&doc.view=entire_text)

<sup>xxv</sup> Ritter, p. 293.

<sup>xxvi</sup> Ritter, *loq. cit.* The Ritters had moved from Berkeley to La Jolla to develop the station facilities, which included their residence, in 1909.

<sup>xxvii</sup>

<https://publishing.cdlib.org/ucpressebooks/view?docId=kt2b69q0kn&chunk.id=ch08&toc.depth=1&toc.id=&brand=eschol> See p. 83. Kofoid also published research articles with Watson Bailey and McCulloch and cited contributions by Robertson to a paper he published after her death,

<sup>xxviii</sup> <https://www.latimes.com/archives/la-xpm-1987-06-06-mn-5216-story.html> et al.

<sup>xxix</sup> <http://articles.adsabs.harvard.edu/full/1991JAVSO..20...18W> et al. An argument was made that since Waterman Haas's dissertation was published before Glancy's, she should be called the first woman to receive a UC Ph.D. in Astronomy.

<sup>xxx</sup> <http://www.dickwhitney.net/AOHistoryLensDesignersGlancyWellsleyInfo.html> et al.

<sup>xxxi</sup> <https://oregondigital.org/sets/osu-historical-images/oregondigital:df72j633v> et al.

<sup>xxxii</sup> [https://www.oregonencyclopedia.org/articles/gilkey\\_helen/#.X\\_zxE1ilbIU](https://www.oregonencyclopedia.org/articles/gilkey_helen/#.X_zxE1ilbIU) et al.

<sup>xxxiii</sup> Jepson was also a UC faculty member who had earned all his degrees at UC.

<sup>xxxiv</sup> <https://www.agnesscott.edu/lriddle/women/andrews.htm> et al.

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<http://texts.cdlib.org/view?docId=hb1199n68c&doc.view=frames&chunk.id=div00008&toc.dept h=1&toc.id=>

xxxvi <https://www.econ.berkeley.edu/women-history> See also <https://play.google.com/store/books/author?id=Lillian+Ruth+Matthews>

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[https://books.google.com/books?id=SKO2uwEACAAJ&pg=PA360&source=gbs\\_selected\\_pages&cad=2#v=onepage&q&f=false](https://books.google.com/books?id=SKO2uwEACAAJ&pg=PA360&source=gbs_selected_pages&cad=2#v=onepage&q&f=false) See also the University of California *Blue and Gold* yearbook for 1912.

xxxviii This was not a time that presented models for successfully joining a career with marriage. A woman choosing a career instead of marrying stepped outside the social expectations of the era that women center their lives on a home, husband and children. Mary Ritter was a rarity, in that she continued her medical practice in her early years of marriage. Nevertheless, though the Ritters had no children, upon relocation to La Jolla, to establish the UC marine sciences station, Mary gave up her career to support William's work on the building complex. Though she was engaged for the rest of her life in charities and women's organizations, Mary regretted the loss of her profession as she looked forward to retirement years.

The either/or expectation kept many professional doors closed to hiring single women with the excuse that if they married, they would leave their position. Even schoolteachers were not exempt from this dilemma.

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