-8 Newspaper interview, undated c. 1982

Dorothy Weeks: Class of 19

Teacher and physicist still lives

by Marjorie Damon

In 1930, Dorothy Walcott Weeks was the first woman to be granted a Ph.D. in mathematics by the Massachusetts Institute of Technology. Last May, she was awarded an honorary doctor of science degree by Regis College. At the age of 88, with relatives, friends and neighbors looking on, she was recognized for her long career as a teacher and physicist. The citation read, in part:

Gifted teacher and distinguished physicist you have enriched the lives of generations of students ... Because of your efforts on behalf of The American Association of University Women and The International Federation of University Women you have become throughout the world, a symbol of women's high intellectual accomplishments.

A member of the class of 1916 at Wellesley College, Dorothy Weeks has lived in Wellesley, on and off, for the past 69 years.

Sitting in the comfortably cluttered study of her house on Dover Road, she talks with humor and insight about herself. Documenting her life as carefully as any scientific experiment, her agile mind moving from past to present, she describes people and places with almost photographic recall. She explains and categorizes as she speaks, producing papers and pictures of herself and her friends from childhood to old age. Like all good teachers, she has a sense of drama and an instinct for metaphor and the illustrative incident.

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Professor Dorothy Walcott Weeks enjoys the company of cocker spaniel Weeji in the library of her Dover Road home.

Townsman photo by Melinda Macauley

DOROTHY WEEKS WAS THE SECOND of three children and the first daughter of Edward and Mary Weeks. She lived in Washington, D.C., from the time she was seven until she went to college. "The Cleveland Park area was like a small town," she recalls. Washington was dominated by the optimistic energy of Teddy Roosevelt, but it hardly mattered to the children who was President. "We had a gang and we did all the usual things. I climbed trees and played running games. It was a perfectly normal childhood."

Normal in most ways, but it was clear from the time she was in the fifth grade that she had a rare gift for mathematics. "I'm grateful to my family. They never made me feel that my ability in math was odd. My sister could play the piano and I could do math. They never made any fuss about either of us. I wasn't driven or pushed or separated from my friends. I think it's a mistake to separate gifted children from their peers. I was never bored in class. I had some wonderful teachers and I always loved school."

She was expected to use her talents to help students who struggled. "I spent a lot of time tutoring girls both at high school and at college." Growing up at a time when people were expected to use their gifts to help others, encouraged by her parents' example and later by Wellesley College, the service ethic was to become one of the driving forces in her life.

If her talent for math was unusual, so was her sense of direction. At the age of 11, she wrote, "My favorite college is MIT, my favorite subject is math, and my idea of happiness is teaching." Her directness was a quality that sustained her when it seemed unlikely that she would ever be able to reach her goals. For all its diversions, her career has been remarkably consistent with the interests of that 11-year-old girl.

As a sophomore in high school, she picked up the thread of Wellesley College that had been woven into her life before she was born. "When my parents were first married they lived in Newton Highlands. One Sunday afternoon in the summer of 1889, they hired a horse and buggy and drove through the Wellesley College campus. They decided then that if they ever had a daughter they hoped she would go to Wellesley." She discovered that her favorite math teacher had been in the class of 1887 at Wellesley and with that extra impetus, Dorothy never considered applying to another college.

None of her teachers nor anyone in her family ever tried to steer her away from science toward the more traditional female disciplines of English and history. "My parents, but especially my mother, encouraged me to do anything that I thought was right for me." There was no political basis for what they did. "My mother and father weren't activated by the feminist movement of the early part of the century. They just wanted all of their children to do whatever interested them and to try to do things well."

IN THE FALL OF 1912, the village of Wellesley was dotted with rooming houses for college students. When Dorothy arrived at the train station in September, she was met by a junior who escorted her to 9 Abbott Street, a rambling Victorian, where she was to spend her freshman year. She and her classmates walked over the hill where the Weston Terrace apartments now stand to the classroom buildings on the campus.

Henry Durant, the founder of Wellesley College, had assembled a talented group of women to teach at his college. They taught in a demanding but cooperative atmosphere, united in a common vision of high personal and academic standards for themselves and their students. The math and science faculty were available and encouraging to the young public graduate from Washington.

By her sophomore year, Dorothy Weeks knew that she wanted to do research in physics. "Although Wellesley was oriented toward research, the college had very little equipment at the time. I really couldn't do any research there, but I dreamed of being able to do it at the graduate level."

On a March morning in 1914 it seemed as if her dreams and those of the other students might never come true. As she watched out the window of her tower

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room in Cazenove, College Hall, the all-purpose classroom building, chapel and dormitory, burned to the ground. "What came after the fire was the most significant part of my college experience. The way the faculty and students pulled together to continue classes was something that I could never forget. We improvised. We took the equipment that was left and we set up a physics lab in a luggage room. Our class became a bridge between the old Wellesley and the college that it is today.After the fire, President Pendleton literally brought the school from the nineteenth century into the modern age. Being a part of that transition has always been very important to me."

By the time she graduated, she had taken every math, physics and chemistry course the college offered. She is modest about her years as an undergraduate. "I wasn't anything special at college. I wasn't particularly good at history or English and I wasn't elected to Phi Beta Kappa until many years later when they elected me as an alumna."

Grants and fellowships were not part of academic life in 1916, so she put aside her plans for graduate school and went home to Washington. "It was wartime and the city was full of soldiers. I was out almost every night dancing and having dinner with the young men. I taught school for a few months. I was hired for a government job at the Patent Office, which because of the war had begun to hire women."

She tried another job but it didn't interest her. "I missed the academic part of college life."

Eventually, at the recommendation of a Wellesley professor, she was offered a job as a lab assistant at MIT. "It was then that I discovered that I was a very good executive. Running an electricity lab for six hundred students brought out skills that I didn't know I had." She was able to complete her course work for a master's degree in physics, but once she had her degree, felt there was no future at that time for a woman at MIT.

"I'm always embarrassed when people emphasize my career as a physicist. I am primarily a teacher. I thoroughly enjoyed the teaching of physics, which was my tool of contact with my students, but from the time I was a child I wanted to be a teacher, long before I was sure what my field would be."

SHE REMEMBERS THE TEN YEARS after her graduation from Wellesley as the most difficult of her life. "I floundered. There are so many conflicts and adjustments once you leave school, trying to figure out what you want and who you are. If I was talking to a recent graduate I'd just tell her to expect the ages from twenty to thirty to be a very confusing time."

In a career turnabout, Weeks left MIT and went to Prince School and earned a master's degree in retailing. "I was able to use my executive skills at Jordan Marsh as a hiring supervisor. I did some innovative things, but the business world wasn't really for me. One day I resigned and I went back to my apartment in Cambridge with no idea what I'd do next. When I picked up my mail there was a letter from one of my former professors at MIT telling me about a temporary position. One thing led to another and I was able to begin doctoral work in mathematics."

She did her doctoral thesis under Norbert Weiner, a man younger than she was. A generation later he would be known as "the father of cybernetics", the theoretician whose ideas were fundamental to the development of computers. "He was an experience. There is no doubt that the man was a very great genius. He used to cover the blackboards with formulas from one end of a room to the other but most of his students hadn't the slightest idea what he was doing."

Though she was often the only woman at a meeting or in a classroom she never felt that she was being discriminated against by her colleagues. "On the contrary, men were extremely helpful and encouraging to me. They always seemed delighted that a woman could do the kind of work I was doing."

In a roomful of men, she was never expected to be the note taker or do the secretarial work. "I didn't have the skills anyway. When I was younger I was advised not to learn typing and shorthand because if I did, people would expect me to use them. Don't bother learning something you don't want to do."

IN 1930 WITH THE DEPRESSION deepening and college teaching jobs scarce, Dorothy Weeks was awarded her Ph.D. in mathematics. She was 37 and considered herself lucky to be offered the chance to build a physics department at Wilson College, a small liberal arts college for women in Pennsylvania. "It was the best place for me. I had the chance to start from the beginning and make the department exactly what I wanted it to be."

A student, who was strongly influenced by Miss Weeks, has fond memories of her physics classes and her teacher. "Miss Weeks was always well prepared and she had a wonderful sense of humor. She was far more energetic than any of the other teachers I had. We were always impressed with all the things that she did outside the Wilson community." The student, who eventually went on to work as a physicist at the Smithsonian Astrophysical Observatory, still stays in close touch with her mentor and friend.

THE OUTSIDE INTERESTS that took up so many of her weekends and summers revolved around her research in spectroscopy and her membership in the American Association of University Women and the International Federation of University Women.

As soon as her physics department was organized, Professor Weeks began to look for a sub-specialty in which she could do research. At a conference in 1932, she heard a provocative lecture about spectroscopy and she knew she had found what she was looking for. "I became interested in spectroscopy because it was a field that could be brought down to the level of undergraduates and one that I found intriguing."

The spectroscope, a precursor of contemporary laser technology, is an instrument which breaks the light admitted by an atom into a pattern. The wave lengths of the light can then be measured. "My contribution has been to apply theories developed by others to atoms not previously so analyzed." Her work on the iron atom, known throughout the world, eventually culminated in

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Prof. Weeks

a Guggenheim Fellowship, one of four so far awarded to a woman in the field of physics.

THE AMERICAN ASSOCIATION of University Women has been a force in academic life for three generations. Encouraged to join the organization in 1916, Dorothy Weeks did so as soon as she graduated from Wellesley. Her active participation began the same year and she maintains her membership today. Her work at both the national and international level took her all over this country and much of the world, serving on committees that awarded fellowships at the post doctoral level.

"When I served on selection committees we made awards solely on the basis of merit. We were given only the vitas of women who sought our support. I hope some day we reach the point where people selected for jobs are chosen because they are the most qualified persons available. When we begin to see people as people and not as men or women, or as members or a race or religion, then we'll know that we've gotten somewhere."

The AAUW recognized her contributions in 1969 when it presented her with its achievement award, an honor given in other years to Rachel Carson and Juanita Kreps. A few years later, the Dorothy Weeks International Fellowship Endowment was established by the AAUW.

After 24 years at Wilson, she resigned and moved back to Wellesley, a block away from her beloved college. Living in Wellesley did not signal retirement or even a slowdown in her busy life. She was a physicist at the Ordnance Materials Research Office for eight years and in her seventies she became a spectroscopist at the Center for Astrophysics at the Harvard College Observatory, and a lecturer at Newton College of the Sacred Heart. She worked until she was 83.

THE LAST FEW YEARS HAVE BEEN quieter but no less intense. She still lives as if she owes a debt to life. "I certainly find myself writing more letters than I ever did before. I didn't really get interested in politics until Watergate, but since then I've followed the political scene very closely. I'm concerned with the way things are going now, with the emotionalism in politics. I was in Germany in 1933 and 1934 and the country was in a frenzy. I watched Hitler get into his car in Nuremberg one night and the people went wild just watching him. It was pure emotion. I sense some of the same kinds of things going on here. The Moral Majority appeals to the emotional, not the rational."

Weeks is concerned with a potential nuclear war. "The weapons race has to be stopped. It's terrible that some of the best scientific minds in the country are concentrating their energy on designing instruments of destruction. I don't think we can even think ten years ahead, but that we must protest from day to day the things we think are amiss."

As a scientist, she is able to make connections in the physical world, but it is the human connections that she has always valued the most. "I'm always embarrassed when people emphasize my career as a physicist. I am primarily a teacher. I thoroughly enjoyed the teaching of physics, which was my tool of contact with my students, but from the time I was a child I wanted to be a teacher, long before I was sure what my field would be."

Her deep and lasting friendships with her classmates from Wellesley are nurtured by frequent phone calls and letters. "The four years at Wellesley is just the planting of the seed. The Wellesley experience ripens through a lifetime of shared experiences."

As she speaks, Professor Weeks evokes qualities of mind and manner and the devotion to institutionalized standards that she and members of her generation epitomize. It is a tribute to the loyalty and stamina of the class of 1916 that 27 of them, all over the age of 85, returned to the campus this past June for their 65th reunion.

SHE REACHES OUT TO TAKE a golf ball from her cocker spaniel and rolls it across the floor as she talks about the past five years of her life. "I never wanted to be in a retirement community. I want to be in the mainstream of things. I'd just be bored if I had to play bridge three times a week."

The children in her neighborhood are devoted to her, often stopping by for a cookie and a chat. Last year a ten-year-old boy chose her to be his godmother, a singular honor when most people her age are content to rest far away from the noise and confusion of young boys.

Now, in old age, she sees a clear definition to her life. "The pieces that seemed so unimportant and unrelated now fit like a jigsaw puzzle. I realize how lucky I was to have had a family which let me go in my own direction without any pressure to leave science."

She still feels a strong sense of connection to her teachers who encouraged her at crucial times from elementary school through her post-doctoral work and to her students, some of whom are now retired themselves. She doesn't dwell on missed opportunities or on things that are now out of her reach, but looks to the happy memories of both her professional and personal life.

She advises anyone facing retirement not to worry about it. "Just do anything that anyone wants you to do. You never know what will come out of doing something you've never done before. The past few years have been some of the best and most interesting of my life."

DOROTHY WEEKS HASN'T FALLEN into indifference, a major pitfall of advanced years. Her strong sense of who she is is evident in every sentence she speaks, a tribute to that 11-year-old girl who knew what she wanted to do and did it well.

Through her own determination, she was able to help open doors for women that were tightly closed when she was born in 1893. Still open to new experiences, she exhibits a quiet satisfaction with the life she has lived, not in the narrow personal sense, but because she had the chance to be a part of an important moral and academic tradition. ■