

Mention “chemist” and Jeanette Grasselli Brown probably doesn’t come to mind. But she should. After devoting fifty years to the “love of her life,” she continues to show that women and science form a powerful compound.



## THE WONDER OF SCIENCE

BY KRISTIN OHLSON



Ever since she discovered the workings of the world at the bottom of a test tube in a high school chemistry class, Jeanette Grasselli Brown has defied stereotypes about women in science, even among those who are barely old enough to know what a stereotype is.

One of her favorite stories concerns a visit six years ago to the fourth-grade class of her granddaughter Carolyn. Weeks before Mrs. Grasselli Brown's appearance, the teacher asked the class to draw a picture of a scientist. Carolyn drew a picture of a smiling, pretty woman in a green sleeveless jumpsuit bending over a microscope. Her classmates drew pictures of Einstein-coifed men and teased her for what they thought was a ludicrous misrepresentation of the world of science.

Of course, Mrs. Grasselli Brown (GRS '58, organic chemistry) wore her green sleeveless jumpsuit when she talked to the class. "Everyone thinks of scientists as nerdy men with pocket protectors wearing white lab coats," says this distinguished scientist and former prom queen, brushing a hand over her bright coral suit as if to dispel this notion. "Girls and women still need so much encouragement to go into science. We don't expose them nearly enough to the rewards and excitement of a career in science, and it's still not perceived as a field for women."

Throughout a remarkably busy and accomplished fifty-year career in analytical chemistry, Mrs. Grasselli Brown has devoted much of her time to this issue, so much so that she will be the 1999 recipient of the American Chemical Society's Award for Encouraging Women into Careers in the Chemical Sciences. Sponsored by the Camille and Henry Dreyfuss Foundation, the award allows Mrs. Grasselli Brown to direct \$15,000 to the organization of her choice. She has selected Hathaway Brown School, in Shaker Heights, Ohio, a private K-12 girls' school with exceptional science programming.

When she receives this award in March, Mrs. Grasselli Brown will become one of the few chemists in the nation to win three awards from the society, including its Garvan Medal in 1986 (given annually to the country's leading woman chemist) and its Fisher Award in Analytical Chemistry in 1993.

She has received many other awards in the last forty years, but even a full list of them only hints at her achievements. She rose from junior chemist at the Standard Oil Company in 1950 to director of corporate research of BP America by 1985 (so named after Standard Oil had been acquired by British Petroleum). For many of those years, she was part of the Standard Oil team that developed the process for making acrylonitrile (a monomer used to make Orlon, and a number of other polymers), used in clothing, carpeting, and other synthetic products.

THE YOUNG CHEMIST RECEIVES THE  
COMBINED CHEMICAL SOCIETY AWARD IN 1954.

She's written nearly eighty articles for scientific journals and nine books, including one that was the first to discuss the combined techniques of infrared spectroscopy and Raman spectroscopy and became widely used among universities. She's received eight honorary doctorates, spoken at 100 scientific conferences, and delivered another 500 lectures to the general public about science. She's been listed in *The World's Who's Who of Women* and *Foremost Women of the Twentieth Century*. She has held or continues to hold positions on more than forty government, nonprofit, and university boards, such as the National Science Foundation, the Martha Holden Jennings Foundation, the White House Initiative on Historically Black Colleges and Universities, and, currently, the White House Joint High Level Advisory Panel for US/Japan Science and Technology Agreements.

Amidst this flurry of professional activity, she makes time to indulge a fondness for wind surfing.

Her career not only defies the aforementioned stereotype about women scientists—specifically, that there aren't any—but it also has been free of the obstacles put in their way. Unlike many of the women she's met who are majoring in science or are already working as scientists, she encountered few barriers. On the contrary, many doors opened for her, and eager hands pulled her through.

"I have been so fortunate," she says. "I've had wonderful mentors, a great family, and all the encouragement that one could hope for." What makes her good fortune even more remarkable is that it hasn't made her oblivious to the struggles of other would-be scientists. "Now it's my turn to make sure that young women, as well as minorities, have these opportunities," she concludes.

#### THE LOVE OF HER LIFE

Her earliest years, while not affluent, were rich in life experience. She grew up as Jenny Gecsy in Cleveland's Buckeye neighborhood, then a thriving Hungarian enclave, where she danced in Hungarian groups, learned traditional Hungarian cooking from her mother, Veronica, and ran to the butcher and baker at her mother's bidding to deliver orders in their native tongue. While in high school, she often accompanied her father, Nicholas, to work at a foundry. There, she'd watch, fascinated, as he made the sand castings that were doused in hot steel and later, when the steel had cooled, knocked out to create the hollow cores inside equipment and machine parts.



These years were rich in intellectual stimulation, as well. By the fourth grade, in 1939, she had been identified as a child with promise and placed in the Cleveland Public Schools' Major Work program. This program provided her with a full complement of enriched courses all through her public schooling—French in the fourth grade, aeronautical engineering in the tenth grade, and woodworking, theater, and dance. English was her favorite subject until she “fell in love” with chemistry in her junior year.



“It was the fascination of learning about *things*, that attracted me,” Mrs. Grasselli Brown recalls. “Chemistry presented an opportunity to learn about the world around us: What happens when the sun comes up in the morning, what happens when you put a cake in the oven, what happens when you mix A and B and get something called C. With chemistry, you could unravel these mysteries and also have the opportunity to do something that might impact mankind.”

In a gesture that would change her life, her chemistry teacher suggested she consider majoring in chemistry at college and offered to help her get a scholarship to his alma mater, Ohio University. “He was ahead of his time in encouraging a girl to go in that direction,” she says. “He opened my eyes to a career I never would have considered.”

She won a scholarship to Ohio University in 1946, where she was the only female chemistry major. Again, she found tremendous support. Since she needed a part-time job, her chemistry professor, Jesse Day, arranged for her to be his laboratory assistant, helping him conduct research in metallography, in which she studied the grain structures of various

A MERIT AWARD CITES HER NOTABLE WORK IN CHEMISTRY.

metal alloys. She graduated and returned to Cleveland—diploma and Phi Beta Kappa key in hand—to work at Standard Oil’s laboratory on Cornell Road, the city’s premier employer of chemists.

There, she found another supportive environment for her intellect and hard work. Remarkably, about twenty-five percent of Standard Oil’s scientists were women, most of them recruited directly from Western Reserve University’s chemistry department by E. C. Hughes, the director of the lab and another scientist ahead of his time in ushering women into the field, she says. Mrs. Grasselli Brown points out that even by today’s standards, twenty-five percent is high: Overall, in all the natural sciences, women still represent only about fifteen percent. So the Standard Oil lab was unique—and somewhat notorious.

“We had a reputation,” Mrs. Grasselli Brown says, laughing. “We’d go as a group to professional meetings and conferences, and all those men would say, ‘Here come the women from Standard Oil. Beautiful and smart!’ ”

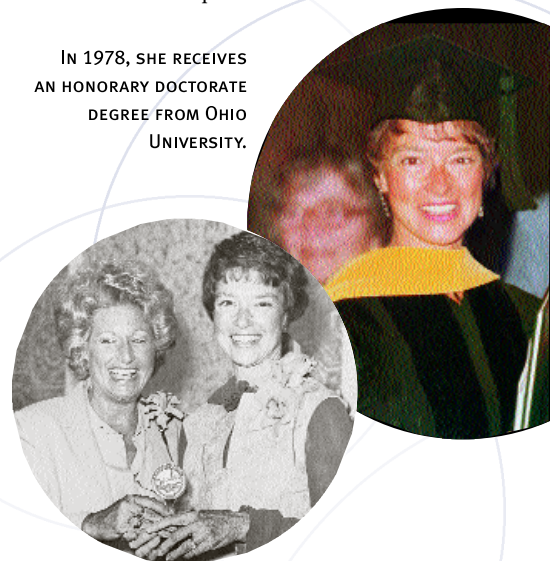
Once at Standard Oil, another bit of career-charting serendipity occurred. During World War II, a new tool, the infrared spectrometer, had been perfected by the military and was now available for commercial use.

A bench-top device that spits out a peaks-and-valleys chart, the spectrometer uses infrared light to perform a non-destructive analysis of various materials, whether in gas, solid, or liquid states. Mrs. Grasselli Brown was asked to experiment with this tool and see how the Standard Oil lab might be able to

solve problems with it, either customer service issues, such as complaints about sputtering engines, or research, in which the scientists were trying to figure out if they had achieved the results they sought in newly synthesized materials. She took up the infrared spectrometer as her own area of concentration—“her baby,” she calls it—and has since become one of the world’s leading authorities on its use.

Her specialty fit neatly into one of Standard Oil’s most promising research paths, in which scientists were trying to convert crude oil molecules into raw materials for the rapidly growing polymer industry. “We knew that someday, petroleum would be a dwindling resource,” she explains.

IN 1978, SHE RECEIVES AN HONORARY DOCTORATE DEGREE FROM OHIO UNIVERSITY.



CIVIC VOLUNTEER RENA BLUMBERG WITH MRS. GRASSELLI BROWN, THE 1980 YWCA WOMAN OF THE YEAR.

“At that point, we were just turning crude oil into gasoline and motor oil, and then it was burned and not recovered in any form. We thought, wouldn’t it be nice to save some of those molecules and turn them into something even more valuable than gasoline.”

The lab team worked on this project from the mid-1950s until 1969, finally emerging triumphantly with the patented Sohio Acrylonitrile Process, the method by which all the world's acrylonitrile is now made—and beating out a much larger lab at Dupont, hot on the tracks of this same breakthrough.

These were busy years for Mrs. Grasselli Brown. While working full time, she also was earning a master's degree in organic chemistry at Western Reserve University, cheered on by yet another mentor: chemistry Professor Frank Hovorka, advisor to Iota Sigma Pi, the women's honor society in chemistry. She also was settling into married life with her first husband, fellow Standard Oil scientist Robert Grasselli (GRS '55 and '59, chemistry), whom she married in

1957. While the couple could not have children, Mrs. Grasselli Brown filled her time with professional endeavors and cultural events. Her *Letter from America*, a monthly column written for a free European spectroscopy journal with a circulation of 40,000, developed collaborations and friendships for her around the world.

She also began to combine her longtime interest in theater and her love for chemistry in a lecture series, *Operation Super Sleuth*, in which she'd amuse audiences—Kiwanis groups, ladies' garden clubs, high school classes—with the marvels that analytical chemistry could perform. She was able to add a special dash of drama to these talks with forensic examples from various Cleveland police cases, including the infamous Sam Sheppard murder trial.

Mrs. Grasselli Brown also was rising through the ranks at Standard Oil, making her imprint on the lab's effectiveness and on her coworkers. She had an especially salutary effect on the careers of other women there, making sure they received salaries equal to that of their male peers and convincing Standard Oil's management to allow them flexible schedules while they were raising their children. And she encouraged professional development on the part of *all* her people, part time or full.

"She didn't keep anyone in a box," says Gordon Cross, a former manager of development at BP. "If you look back in the annals of Cleveland's professional societies, you'll see Standard Oil has been well-represented. That was her influence."

#### A SCIENCE ENVOY

Now that she's retired from BP America, Mrs. Grasselli Brown's sphere of influence has broadened. Nearly a week each month is spent traveling to board meetings and speaking engagements, including a twice-yearly trip to Europe for scientific conferences sponsored by the Hungarian Chemical Society and the Austrian Chemical Society. She is an honorary member of both.

Though her marriage to Robert Grasselli ended, she is enjoying a second marriage—and the grandchildren that came with it—to an old friend: Glenn Robbins Brown Jr. (GRS '54 and '58, chemical engineering), a former Case Western Reserve dean and a former Standard Oil senior vice-president, whom she married eleven years ago. They travel frequently for pleasure, such as a recent trip to Puerto Vallarta and another to the Caribbean.

The Chagrin Falls, Ohio, resident also devotes much of her time to projects that promote the quality of education

and access to it. She serves on the Ohio Board of Regents, the governor-appointed body that oversees programs and administers funds to the state's institutions of higher education. She chairs the Cleveland Scholarship Programs, an organization that provides financial-aid counseling and some scholarships to help Greater Cleveland students of average abilities go to college. She heads the education committees at the Great Lakes Science Center and the Musical Arts Association. She also gives talks around the United States to foundations and community groups about supporting education; to teachers and administrators about opening doors to science; and to students about her own lifelong zeal for analytical chemistry.

Mrs. Grasselli Brown didn't really plan for her retirement to be busier than most people's working lives; it just happened, as more and more people called to ask her if she'd take on another responsibility. "I like to be busy, and I like to stay relevant," she says, preparing to head out the door for yet another appointment. "When opportunities come along where I feel I can help people, I like to do it. When you've been fortunate, I believe you have to give back." ■■■

KRISTIN OHLSON, a Cleveland-area writer, is a regular contributor to CWRU Magazine.

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THE BROWNS IN THEIR CHAGRIN FALLS HOME.