

HELEN MURRAY FREE 1923-2021



Why don't you study Chemistry instead???

With these words, a wise housemother at Wooster College, conscious of WW II opening female opportunities in science fields, changed the lifepath of Helen Murray, an English/Latin major. She graduated with a BS in chemistry and hired by Miles Laboratory (Bayer Corp) to work in their quality control lab. She stayed with Bayer from hiring in 1944 until retirement in 1982.

IN 1945 Helen transferred to Alfred Free's more challenging biochemistry research group; they married in 1947, becoming lifetime research partners. They parented 6 children to create a family of 9 with Alfred's three offspring. She and Al also were tireless science education advocates, working with and encouraging youth by participating in STEM events, science fairs, giving scholarships, conducting Miles tours.

In 1956, Helen and Alfred perfected **CLINISTIX**, the revolutionary first "dip and read" test to determine the presence of sugar in urine, designated an **ACS NATIONAL HISTORIC CHEMICAL LANDMARK** in 2010 and a boon to doctors, clinicians, millions of diabetic sufferers.

The pair of researchers subsequently developed the multi-diagnostic urine test strip sold today as Siemens **MULTISTIX SG**, which allows for quick analysis of urinary tract infection, kidney disorders, liver function, and carbohydrate status. Modern technology has led to mechanized monitoring devices, but these diagnostic strips remain affordable, available "at home" options.

Helen earned 7 patents and published dozens of research papers; the Frees co-authored two texts on urinalysis which remain standard reference material.

Helen served as president of the **American Association for Clinical Chemistry** in 1990 and as president of the **American Chemical Society** in 1993. She was inducted into the **National Inventors Hall of Fame** in 2000, and the **National Women's Hall of Fame** in 2011. In 2009 she was awarded the **National Medal of Technology and Innovation** by President Obama.

https://en.wikipedia.org/wiki/Helen_Murray_Free

www.acs.org/content/acs/en/education/whatischemistry/landmarks/diagnosticteststrips.html

<https://www.nytimes.com/2021/05/03/science/helen-murray-free-dead.html>

<https://www.hartzlergutertermuthinman.com/obituary/Helen-Free>

[https://doi.org/10.1016/S0140-6736\(21\)01649-4](https://doi.org/10.1016/S0140-6736(21)01649-4)