



Editorial

Sarah Donaldson: Blasting cells & blazing trails



1. Early life and training: the power of sponsorship

Sarah S. Donaldson was born in Portland, Oregon on April 20, 1939. For as long as she can remember, her mother stressed the importance of hardwork and education.¹ As a child, her mother would often tell her “in order to take care of yourself, you need to do well in school, and get an education.”² These words fueled her early enthusiasm for knowledge. By the time she reached the age of 13, she began volunteering at the Multnomah County Hospital, and started working as a nurses’ aide when she turned 16. Donaldson later entered a dual BS/RN program at the University of Oregon. Charismatic and popular, as well as smart and hardworking, she enjoyed cheerleading, Greek-life, football games, and college parties. “The academics were not difficult, but I was most interested in socialization.”²

Upon graduating nursing school in 1961, Donaldson began working with Dr. William S. Fletcher, a surgical oncologist at the University of Oregon Medical School and mentor/sponsor who would change her life. Working with Dr. Fletcher, Donaldson said “I had an aptitude for the operating room. I loved surgery and I was driven to succeed.”² During her downtime, Dr. Donaldson would practice threading needles, preparing surgical instruments, and observing Dr. Fletcher’s surgical technique. In addition to working as his assistant in the operating room and the clinic, Sarah also aided Fletcher with clinical and laboratory research projects. Observing her scientific curiosity, enthusiasm, drive, and work-ethic, Fletcher knew that she, too, could make a great physician and hatched a plan to make it happen.³ “At the time, I was quite naïve, but Dr. Fletcher was a very visionary man. He was always strategizing a bigger picture for me.”² Fletcher surreptitiously incentivized Donaldson to take additional courses in night school and summer school, which she believed would help her as a research assistant. After completing these classes, Donaldson learned she had fulfilled the pre-med requirements. Despite having the qualifications, she was not confident in her ability to matriculate into medical school. “I had no self-confidence and no inner strength at the time.” She told her mentor “I am not smart enough to go to medical school” after which, Dr. Fletcher sat her down, and highlighted her many skill sets. “He never let me feel dejected or discouraged. He was like *my* cheerleader behind the scenes.” Soon after, Donaldson was invited for an interview at Dartmouth Medical School and in 1964, as only one of six females in her homogenously male class, she matriculated.¹ “So that’s how I went to medical school. Not because I had the idea, not because I had self-conviction, but because I had a mentor who saw someone with promise and opened the doors and pushed me through the doorway at every step.”²

With Dr. Fletcher encouraging her along her journey and following in his shoes, Dr. Donaldson completed her last two clinical years at Harvard

Medical School and graduated in 1968. Although she had passion about pursuing a career in surgery, she soon found an interest in medicine and went on to complete her internship in internal medicine at the University of Washington. During her internship year, Dr. Donaldson remained unsure about her ultimate choice of medical specialty, and again reached out to her mentor for advice. “The world of radiation oncology needs more surgically oriented people in it,” Dr. Fletcher said, recalls Dr. Donaldson.² A few weeks later, he arranged for her to meet the Radiation Oncology chairman and the program director at Stanford, and she soon accepted a position as a radiation oncology resident, one of the two first women in the program. “It’s that simple. I did nothing but follow the guidance I received from a strong mentor, and it’s because of that I feel so strongly about giving back.” After residency, Dr. Donaldson completed two pediatric oncology fellowships as well: one at the M.D. Anderson Hospital in Houston Texas, and another at the Institut Gustave-Roussy in Villejuif, France. In 1973, she returned to Stanford and has since remained an integral part of the Stanford faculty.

2. Mid to late career: the power of partnership

Indeed Dr. Donaldson herself has had much to give in terms of her oncological research, with a particular interest in pediatric populations. Her most impactful research contributions commenced after she treated an 18 -month-old baby with advanced stage Hodgkin’s Disease using a novel treatment protocol.² Prior to this approach, children with Hodgkin’s were given high dose radiation, and subject to a very poor prognosis. With the partnership of Dr. Henry Seymour Kaplan, a world-renowned pioneer in radiation therapy, Dr. Donaldson initiated clinical trials using low- dose radiation therapy and experimental chemotherapy and has subsequently changed the standard of care for children with Hodgkin’s disease. Since the advent of her protocol, Donaldson’s work has spared the lives of thousands of children with Hodgkin’s disease. She has focused her career on effective treatment of pediatric solid tumors and minimizing long term side-effects of radiation therapy. Soon after her success in Hodgkin’s lymphoma, she became a member of the Children’s Oncology Group, the world’s largest organization devoted to pediatric oncology, and has helped develop clinical trials for rhabdomyosarcoma and other soft tissue cancers, as well as Ewing’s sarcoma, Wilms’ tumor, and medulloblastoma.² Her impact has allotted her the status as one of the world’s leading authorities in pediatric radiation oncology. She has currently published over 270 scientific articles and given over 225 major presentations and has served on the editorial boards of numerous journals including: *Journal of Clinical Oncology*, *Journal of American College of Radiology*, *International Journal of Radiation Oncology, Biology, and Physics*. She has also been an ad hoc reviewer

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for *The New England Journal of Medicine, Cancer, Blood, and Journal of America Medical Association*, just to name a few.

At Stanford, Dr. Donaldson is recognized as pioneering Stanford's first pediatric oncology unit. She has served as Program Director in the Department of Radiation Oncology and the Catherine and Howard Avery Professor of Radiation Oncology, as well as Chief of the Radiation Oncology service at Lucile Packard Children's Hospital. In addition, she has held many leadership roles nationally outside of her home institution. She became the first female president of the American Society for Radiation Oncology (ASTRO) and the American Board of Radiology (ABR) in 1991 and 1996, respectively. In 2012, she also served as president of the Radiological Society of North America (RSNA) and was on the Board of Directors of the American Society of Clinical Oncology between 1999 and 2008. Throughout her career, she has been a strong proponent of collaboration, which she refers to as the "Power of Partnership." During her 2013 RSNA Presidential Address, she stated "The Power of Partnership is a theme that reminds all of us of the incredible power that comes from acting together and working together, as partners, to change the way we practice medicine".³ She uses every opportunity to bring people together and believes that having a culture of collaboration is essential. During the ABR trustee dinners, she introduced named place cards at the tables to promote people to interact with those with whom they might otherwise have not taken the opportunity to visit, as she appreciates fostering new partnerships.⁴ Donaldson often quotes Winston Churchill "We make a living by what we get, but we make a life by what we give."⁵ Through partnership, she believes that "we indeed have much to give."³

3. Awards and honors: "the heart and soul of radiation oncology"

In 2007, Dr. Donaldson received the ACR Gold Medal, the highest honor the college bestows, becoming only the sixth woman recipient in the history of the ACR after Marie Curie (1931), Edith Quimby (1963), Alice Ettinger (1984), Rosalyn Yalow (1993) and Kay Vydareny (2005).

Prior to this, she was also the recipient of the 2000 ASTRO Gold Medal. Dr. Donaldson has also received the prestigious Janeway Medal from the American Radium Society, the Marie Curie Award from the American Association for Women in Radiology (AAWR), and the Elizabeth Blackwell Award of the American Medical Women's Association. Her awards are not limited to her academic achievements. Since the beginning of her career, Dr. Donaldson has enjoyed teaching. She has been acknowledged for her strong commitment to education and has earned Stanford's Dean's Award in 2012, and the Henry S. Kaplan Teaching award in 1993 and 2010. Because of her contributions to the Stanford community, her peers have described her as the "heart and soul of radiation oncology."⁴

4. Paving the way for future generations: the power of mentorship

As a trailblazer in the field of radiation oncology, Dr. Sarah Donaldson has also served as a mentor for hundreds of oncology and radiology trainees. The mentorship she received through Dr. Fletcher has greatly contributed to her passion for mentorship today. "Having a supportive and successful mentor was my good fortune," Dr. Donaldson

said of her long-time mentor, William S. Fletcher, MD.⁴ When talking to others about the power of mentorship, she believes "there are so many talented people who just need somebody to have confidence in them, give them a chance, open the door, and become their cheerleader." Of all of her numerous contributions to the field of medicine, she believes that "the most valuable thing I've done is foster the careers of those talented people who represent the next generation. The payback is volumetric." Donaldson has opened the doors for many radiology trainees and has also sought to increase the representation of women in radiation oncology. In 2016 she was honored by receiving the inaugural Mentorship Award from the ASCO Conquer Cancer Foundation. She currently serves as Director of Mentoring in the Stanford Department of Radiation Oncology. As a woman, Dr. Donaldson recalls numerous instances when she was criticized or overlooked. With years of experience building up her resilience, she attributes much of her success to developing thicker skin and moving beyond impediments. Dr. Donaldson encourages her mentees "Do not revel in the bad times. You have to keep on going because you have a goal, you have a mission. You have to stay focused on that. You don't get anywhere by letting things get you down".²

5. Closing

Dr. Donaldson is truly a trailblazer who has sought every opportunity to advance the field of radiation oncology. As world-renowned researcher, highly respected leader and educator, and influential mentor, Dr. Donaldson continues to pave the way for future generations of women in medicine.

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