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Dr. Liane "Lee" Brauch Russell passed away on Saturday, July 20, 2019, at the age of 95. She continued to work on her passions, biology and conservation issues, until a few weeks before her death. Hers was a long and rewarding career into which she fit like a glove.

Fleeing Nazi-controlled Austria as a teen, Lee immigrated to America where she earned her citizenship, her B.A. from Hunter College in New York City and her Ph.D. from the University of Chicago. She and her husband, Bill, came to Oak Ridge in 1947 to work for Dr. Alexander Hollaender, who was intent on creating a world-class biology division at the Clinton Laboratories, (which became known as the Oak Ridge National Laboratory in March, 1948). When Dr. Hollaender recruited Bill Russell to Oak Ridge, Bill agreed to come only if Lee were given a position, too. The rest is history.

ORNL reported at her death: "Through Lee's extensive research, she discovered radiation's effects on developing embryos. This profound study lead to later developing X-ray health precaution guidelines for women of childbearing age to limit x-ray examinations that could possibly irradiate an early developing fetus. She also did extensive research in mice leading to her contributions to the understanding of the role of the Y chromosome, which is male-determining in mammals."

From this incredible breakthrough, Lee received in 1994 DOE's Enrico Fermi Award, the agency's highest scientific award. Numerous other awards were presented to Lee over the years.

Lee and Bill developed a love for the rivers and mountains of East Tennessee which resulted in their many years of environmental advocacy. In 1966, they, along with others, founded Tennessee Citizens for Wilderness Planning (TCWP). TCWP, still going strong today, was instrumental in preventing dams from being built on the Big South Fork of the Cumberland River and on the Obed River. TCWP went on to help draft legislation establishing the Big South Fork National River and Recreation Area and obtaining National Wild and Scenic River designation for the Obed River.

While much has been written about Dr. Liane Russell, the scientist and conservation activist, not as much has been written about Lee Russell, a trusted friend and treasured colleague. I have asked some of those friends and colleagues to comment on the Lee they knew.

Let's start with Dabney Johnson, once Lee's supervisor, always her close friend. "Write about Lee Russell - hmm? I felt this way about 15 years ago when I had become Lee's boss following her retirement and I had to write her performance appraisal. I was stymied; how does one, as ordinary as I am, write about someone as extraordinary as Lee?

"Two things about her stand out to me. When she disagreed with someone about facts or points of view, she was never sharp or critical. She quietly (and almost always successfully) set about correcting factual errors or giving a different view for consideration.

"Scientifically, she was one of the few who could make intellectual leaps from data that don't give an obvious answer. Her famous insight that in the cells of female mammals only one of the two X chromosomes is active was such a leap."

Do you sense the magnitude in someone who was so small in stature but massive as a person? Dabney was a long-time friend of Lee's but she also supervised Dr. Liane Russell. What a tremendous honor it must have been to have been so close to someone of Lee's dimension!

Next, is the perspective of respect for accomplishment from someone who directly benefits from Lee's environmental activism, a National Park Superintendent.

Niki Nicholas, Superintendent of the Big South Fork National River & Recreation Area, the Obed Wild & Scenic River and Site Manager for the Oak Ridge portion of the Manhattan Project National Historical

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Park, said of Lee, "Obed Wild & Scenic River and Big South Fork National River & Recreation Area are incredibly fortunate to have found their most tireless and passionate advocate in the person of Dr. Liane Russell. Along with her husband Bill, Liane fell in love with the Obed and the Big South Fork in the mid-1960s. Her fervent belief that these were two of the most special places on earth animated much of the rest of her illustrious life. Liane devoted the full force of her brilliance and unfaltering determination to the establishment and protection of the two parks, and there could be no greater or more fitting legacy than the fact that they are preserved for future generations in perpetuity as units of the National Park Service."

Niki's responsibility for two full parks and a portion of a third allows her to more fully appreciate what Lee did to help preserve our wild areas.

Here's another perspective from a national level, a Senior Advisor with a nationally respected national parks advocacy organization, the National Parks and Conservation Association (NPCA).

Don Barger, Senior Advisor of NPCA), knew Lee as a "quietly amazing human being," and said of her, "I started as NPCA's first Southeast Regional Director in 1992. One of my first acts was to nominate Lee Russell for NPCA's Marjory Stoneman Douglas Award, which she received in 1994. Named after the author of <a href="Everglades: River of Grass">Everglades: River of Grass</a>, Douglas was the driving force behind the creation of Everglades National Park. The award is intended to recognize and honor people who are the essence of citizen activism in the creation and care of America's national parks. No one I have ever known was more deserving. Over the thirty-five years I've worked in efforts to preserve the beauty and biology of the Cumberland Mountains, I cannot remember many public gatherings, hearings, or agency meetings at which she was not also participating."

Don went on to say, "It's difficult to express the quality of a life like hers in words. I guess I'd say: Lee Russell's life was one of dignity, delight and determination. She had a quiet intellect, a joyous heart, and an informed voice that inspired all of us to speak truth to power, connect to our natural world, and stand up for the preservation of intrinsic worth to the benefit of those who will follow us."

Don's perspective from some distance accurately portrays Lee's characteristics, and I especially like the "quiet intellect, joyous heart and informed voice" these ring true to the Lee I knew.

No writing about Lee would be complete without hearing from the director of the organization Lee helped form.

Sandra Goss, Executive Director of Tennessee Citizens for Wilderness Planning, said of Lee, "Working with Lee Russell was educational and delightful. Her curiosity and drive were inspiring. Lee had integrity and a surprising sense of fun. I miss her terribly, and count myself lucky to have known her."

Sandra is able to serve this grassroots organization today because of Lee's vision and determination that helped form TCWP over half a century ago.

Now, turning to ORNL, here is someone who worked in her organization there.

Gene Rinchik said, "Her passing is such a major loss both to our neighborhood of science and to me personally. But, having said that, Lee's contributions indicate that she lived a very full life professionally, and we have a lot to remember her by. She was a very important mentor to me, and shaped who I became as a scientist. I had admired her work, her intellect, her scientific 'cleverness', and her superior writing skills long before I went to work in her program at ORNL.

"Upon joining her program in 1985, I was also delighted to discover that she was one of the most personable and warm people I had ever met--an amazing combination of scientific and professional skills packaged in a sweet and caring person. Furthermore, she always effortlessly supported and augmented each staff person's scientific career and program while deftly taking care of her own substantial volume of

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experiments and program management. I still don't know how she did it, especially in the context of her considerable involvement in the 'environmental side' of her life.

"She was a very dear friend who taught me a lot about how to do science and how to be a scientist. I will miss her terribly."

Can't you just see the joy Gene experienced by getting to work closely with Lee as well as with Dr. Liane Russell? He knew and appreciated both aspects of her character.

Now for a close friend's perspective, I turned to Oak Ridger, Jenny Freeman.

Jenny said, "I was the fortunate beneficiary of Lee Russell's love for many years. Lee's love fueled everything – her science, her conservation efforts, the way she spent her time, the family and friends she drew around her. Lee noticed everything. She was totally present in her life. I reveled in how much she enjoyed being outdoors or talking about some article from the *New Yorker* she had just read or telling me a story from her early years of growing up in Vienna."

Jenny continued, "We loved celebrating with her – Christmas parties at our home with good friends; carving New Year's pigs from lemons for good luck while sipping Cherry Heering; various birthdays, hers and Bill's, over the years, many of them at a good friend's farm in Morgan County; watching odd old movies when Bill was alive such as *Whiskey Galore* and *The Titmouse Express*. She loved her life.

"I recently came across this quote from Toni Morrison's *Beloved*, 'Love is or it ain't. Thin love ain't love at all.' That was Lee. Her love was thick, and I was lucky. I got to love her back."

Special thanks to Cindy Kendrick who sent me a photo of Lee in a kayak. It is so special and revealing of her character. She also sent photos from a recent activity, the 2017 Knoxville March for Science, where Lee wanted to personally send a message to young people. That message was: "Science Yields Truth – deny it at the peril of the planet!" That simple yet elegant and powerful message was the way she communicated throughout her life.

Cindy, another good friend said, "Lee enjoyed spending time at the family's cabin on Watts Bar Lake. She kept detailed records of those experiences, including water and air temperatures and people present. She loved swimming and paddling, observing wildlife (including bats), and watching the sunset from their dock. Her passionate environmental advocacy was rooted in a deep and enduring love for the natural world."

What can I add to these wonderful testimonials to the enormously significant Lee Russell, whom we have known but who is no longer with us in the flesh? Her memory lingers, for sure, her accomplishments endure and her life, well lived indeed, serves as an excellent example for all of us.

One last quote comes from Lee's son, David "Ace" Russell. He recalls a memory from his youngest days that I think gives yet another insight into our beloved Lee Russell. Ace said, "I'm like Lee in at least one respect, having things 'just so'. I remember as a child, when she would put me to bed, I'd ask her to leave the door ajar, so a little light from the hallway would seep in. She'd guess how much I wanted it closed and then I'd say 'more closed' or 'open' until it was just right. This wasn't an easy procedure for her, as I remember myself as being fairly demanding. And I later realized that although this was the end of my day, it most certainly was not the end of hers. She typically worked late into the night, even up until the last few days. It was really very sweet of her to adjust that door to the perfect angle, and I have no memory of her losing her patience in those times."

What a wonderful tribute to a Mom. A renowned scientist who was a dedicated mother as well. Ah Lee, we miss you already!

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Documentary films featuring Lee Russell and the phenomenal ORNL Biology Division story can be seen here: <a href="https://www.y12.doe.gov/library/video/our-hidden-past-biology-part-1">https://www.y12.doe.gov/library/video/our-hidden-past-biology-part-1</a> and here: <a href="https://www.y12.doe.gov/library/video/our-hidden-past-biology-part-2">https://www.y12.doe.gov/library/video/our-hidden-past-biology-part-2</a>



Lee in January 2019 carving a good luck New Year's pig



Lee enjoying life in a kayak on the lake

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Lee at the Knoxville 2017 March for Science promoting the value of science, **S**cience **Y**ields **T**ruth – deny it at the peril of the planet!

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Lee Russell