

IMPACT

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Featured article:
CAROLYNE HART

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2022 Hall of Fame

COLLEGE OF ENGINEERING, ARCHITECTURE AND TECHNOLOGY



CAROLYN M. GOWDY HART

Carolyn M. Gowdy Hart was born in Memphis, Texas, in 1953. Six years later, her family moved to the farming and oil-producing community of Seminole, Texas, where Carolyn completed her primary and secondary education.

In 1975, Hart graduated from Howard Payne University with her bachelor's degree in mathematics and a minor in biology. Her

biology professor from HPU, Dr. Jack Stanford, was an Oklahoma State University alumnus who encouraged her to apply for OSU's summer National Science Foundation Undergraduate Research Participation Program, where she participated in both the microbiology and electrical engineering (EE) programs.

"I was able to attend both the microbiology and engineering summer seminars, but my research that summer was guided by Dr. Bob Mulholland from the OSU School of Electrical and Computer Engineering," Hart said. "That summer experience was transformative for me."

Hart graduated from OSU with a master's degree in EE in 1976 and with her doctoral degree in EE in 1978. However, she left OSU with more than just an education. Hart's favorite memory from the university was meeting and spending time with her future husband, Jay Hart.

After receiving her doctoral degree, Hart accepted a position at Sandia National Laboratories (SNL), a government-owned, company-operated Federally Funded Research and Development Center. She started the position during the 1970s energy crisis, when the U.S. Department of Energy tasked SNL to apply its capabilities to solve urgent energy issues.

"Because of the foundational knowledge that I'd acquired through my education in data acquisition, signal processing and computational science, I was fully prepared to lead the team that developed the scientific bases for seismic hydraulic fracture mapping in tight, lenticular gas sands," Hart said.

A second-level manager that remembered Hart's academic background from her initial Sandia interview contacted her with an opportunity to lead the navigation, guidance and control team for the Sandia hypersonic testbed. The team developed and demonstrated terrain-following and landmark

recognition navigation using real-time data from a small onboard synthetic aperture radar (SAR). Around 20 years later, that foundation of work was resurrected and informs today's U.S. hypersonic systems.

As her management career progressed, Hart broadened her experiences and led teams to solve other national security problems, including leading Sandia's innovative, next-generation ISR SAR and aided target recognition systems contributions, which she considers to be a highlight of her career. However, the final chapter of Hart's career was what she considers the most challenging and fulfilling. She served as the Vice President of Weapons Engineering and Product Realization and also as the Chief Engineer for Nuclear Weapons at SNL.

"I had a great career at SNL," Hart said. "I was able to move around in a number of different disciplines, contributing to the innovation and maturation of a variety of technologies. But, what really kept me there was the people. I enjoyed their enthusiasm, collaborative spirit, innovative nature and dedication to serving the nation."

Hart has been recognized various times throughout her career. A few of her honors include being an inductee of the U.S. Air Force Order of the Nucleus, receiving a U.S. Joint Improvised Explosive Device Defeat Organization (JIEDDO) commendation for technical and programmatic leadership of the most successful airborne IED detection asset in Afghanistan, receiving the U.S. National Research Council Applied Research Award for the significant, original contribution to research in rock mechanics, being selected as a Distinguished Member of the Technical Staff, an honor limited to 10% of Sandia Laboratories' technical staff, and many more.

Out of everyone in Hart's life, she considers her mother to be the most influential. When her mother was 12, she was diagnosed with rubella, which caused blindness. However, she only took a year off of her education and was allowed to return to the local sighted school. She graduated with her class and as salutatorian. Her mother's differences, perseverance and determination taught Hart values that she will carry with her throughout everything she does.

"For me, being inducted into the OSU College of Engineering, Architecture and Technology Hall of Fame and receiving the Lohmann Medal are more about honoring her life, love and dreams than about honoring my own accomplishments," Hart said.