

**Jorge L. Salazar-Cerreño**



**Position Statement**

It's a true honor to have been nominated for a potential role on the AMTA Board of Directors. As a prospective member of the AMTA Board of Directors, I am honored to be a candidate for election, bringing a steadfast dedication to advancing the organization's mission and vision. If elected, I assure you of my wholehearted commitment to actively contribute to the advancement, application, and worldwide propagation of advanced antenna and measurement technologies, with a particular focus on pioneering new measurement techniques for the characterization and calibration of phased array antennas.

My research is centered around pioneering technological innovations in the design of cutting-edge antennas and digital phased array systems, applicable across domains such as automotive, communication, defense, and remote sensing. Through robust collaborations with national labs and industry partners (including NOAA, NIST, NASA, JPL, ONR, NRL, AFRL, ARMY, NCAR, NSF, APL, BNL, Raytheon, NSI-MI, MVG, PMS, Epirus, SAGE, Amazon, and Tomorrow.io), I have been able to make significant advancements in the field of advanced antenna and measurement technologies. Additionally, my affiliations with countries in South America uniquely position me to extend AMTA's influence in disseminating antenna measurement technologies. With nearly a decade of experience in academia, my primary role revolves around educating and instilling foundational knowledge of emerging technologies within our community. As a potential member of the AMTA Board of Directors, I am dedicated to leveraging my extensive connections within both industry and academia, as well as my expertise in antenna metrology, to amplify the impact of the organization's mission and vision.

Phased array antenna technology has undergone significant evolution over the past decade. Undoubtedly, this technology has played and will continue to play a pivotal role in radar and communication systems, spanning both civil and military applications. Its advantages, encompassing graceful degradation, cost-effectiveness across lifecycles, multifunctional capabilities, and fast scanning updates, render it immensely appealing for a spectrum of purposes, including defense, automotive, atmospheric science, biomedical, security, and remote sensing applications. The assessment and testing of such systems demand advanced RF instrumentation and innovative measurement techniques capable of calibrating complex arrays with several thousands of active antenna elements. Drawing from my tenure at the Advanced Radar Research Center (ARRC) at the University of Oklahoma, where I've contributed to phased array antenna design, characterization, and calibration using state-of-the-art techniques, I am positioned to assist AMTA in disseminating novel measurement and calibration methodologies. This pertains not only to conventional phased array architectures but also extends to state-of-the-art digital phased array antennas.

Furthermore, my leadership, technical acumen, and collaborative approach are harmonious with the values of other AMTA Board of Directors members. I kindly request your support by casting your vote in favor of my

appointment to the AMTA Board of Directors. Together, we can advance the organization's growth trajectory and make valuable contributions to its mission.

## **Biography**

Jorge L. Salazar-Cerreño's journey in engineering began with a Bachelor of Science in Electrical and Computer Engineering from the University Antenor Orrego, Trujillo, Peru, in 1994. Following his graduation, Dr. Salazar embarked on a journey that would shape the wireless landscape of Peru. As an RF engineer and adept project manager, he spearheaded one of the nation's most pivotal wireless developments. Dr. Salazar's visionary leadership was instrumental in conceiving and realizing the intricate design of Peru's revolutionary cellular network. Under his guidance, a remarkable team united to establish an expansive wireless cellphone network. Comprising 345 carefully designed base stations, this network not only transformed connectivity but also introduced a new era of communication in Peru. Dr. Salazar's ingenuity was further evident in his role during the transition to digital wireless networks. His expertise and dedication played a key part in seamlessly incorporating advanced digital technologies, enhancing the efficiency, range, and dependability of the network infrastructure.

His thirst for knowledge led him to earn a Master's degree in the same field from the University of Puerto Rico, Mayaguez (UPRM) in 2002. Fueling his passion further, he accomplished his Ph.D. in Electrical and Computer Engineering from the University of Massachusetts, Amherst, in 2011. At the University of Massachusetts, Dr. Salazar-Cerreño's groundbreaking Ph.D. research pioneered the development of the first dual-polarized active phased array antennas for the National Science Foundation (NSF) Engineering Research Center for Collaborative Adaptive Sensing of the Atmosphere (ERC-CASA). This revolutionary work laid the foundation for enhanced atmospheric sensing capabilities. Following his academic success, in 2012, Dr. Salazar-Cerreño secured the prestigious National Center for Atmospheric Research (NCAR) Advanced Study Program (ASP) postdoctoral fellowship. During his tenure at NCAR's Earth Observing Laboratory (EOL) division, he championed the advancement of state-of-the-art phased array radar for airborne radar system, this initiative lead \$ 96M funding from NSF to develop the NCAR Airborne Phased Array Radar (APAR). APAR will be the first in its kind two-dimensional, electronically scanned, dual-polarized phased array radars transformed atmospheric research. His innovations allowed for in-depth studies of dynamic cloud and precipitation features over challenging terrains and open oceans, overcoming the limitations of traditional radar systems.

In 2014, Dr. Salazar-Cerreño joined the Advanced Radar Research Center (ARRC) at The University of Oklahoma, marking another pivotal step in his career. His role as a research scientist and subsequent elevation to associate professor at the School of Electrical and Computer Engineering in 2021 underscored his dedication to pushing the boundaries of radar technology. His diverse research portfolio encompasses high-performance, broadband antennas tailored for dual-polarized phased array radar applications, innovative array antenna architectures for reconfigurable radar systems, and advancements in antenna testing and metrology. His expertise extends to radome electromagnetic modeling, RF and hardware development, crucial for characterizing and calibrating of active phased array and millimeter-wave antennas. Dr. Salazar's exceptional contributions have earned him esteemed accolades, including the distinguished William H. Barkow Presidential Professorship in 2019. As a Presidential Professor, he embodies scholarly ideals through mentorship, research excellence, and impactful university and public outreach.

His accomplishments continue to shine, as evidenced by his receipt of the 2022 OU Outstanding Faculty Award and the 2021-2022 OU Annual Award for Excellence in Research Grants. Over his 9 years at OU, he has secured funds exceeding \$65M, enabling him to guide the successful graduation of 7 doctoral students and 16 master's

students. Dr. Salazar has coauthored 50 journal papers and contributed to more than 70 conference papers. Notably, he was both an author and coauthor of the first-paper awards on Antenna Measurements and Applications in 2021, as well as the Phased Array Antenna Symposium in 2016 and 2013. Dr. Salazar is an active senior member of the IEEE and AMTA, Dr. Salazar diligently serves as a reviewer for prestigious journals including IEEE Transactions on Antennas and Propagation (TAP), IET Microwaves, Antennas and Propagation (IET), Journal of Atmospheric and Oceanic Technology (JTECH), and IEEE Transactions on Geoscience and Remote Sensing (TGARS). Dr. Salazar's indelible mark on phased array antenna technology, radar technology, atmospheric sensing, and metrology stands as a testament to his unwavering dedication, pioneering spirit, and commitment to pushing the boundaries of scientific and education exploration.

**Candidate Speech**

<https://youtu.be/Jpu6PwpSd2U?si=DjA1POCksFPmONzD>