

Arthur Benjamin Weglein was recognized with the Reginald Fessenden award in 2010. However, since then his work on the inverse scattering series has made the significant leap from a conceptual advancement to an accepted practical solution not only for multiple removal, but also for other components of the seismic processing chain like wavelet analysis and depth imaging, particularly in complex geological environments where prior methods have not been robust. This broad application has elevated the ISS work to a major contribution to the science of exploration geophysics.

In addition to these technical achievements, Weglein has done a great job in writing and teaching for the seismic industry. He has written many papers for GEOPHYSICS and The Leading Edge, and has co-authored books on multiple attenuation (with Bill Dragoset) and seismic imaging and inversion (with Bob Stolt). His mentorship of graduate students has led to five of his students receiving the J. Clarence Karcher Award. In service, Weglein has served as the SEG 2003 Distinguished Lecturer and has served on the SEG Council as a District representative.

Maurice Ewing Medal for Arthur Benjamin Weglein

by Robert H. Stolt and James D. Robertson

Our association with Art Weglein goes back nearly forty years to when Art first entered the petroleum industry as a young researcher applying theoretical physics to seismic challenges. Art believed that the mathematics of quantum scattering theory was potentially applicable to the inverse seismic problem, an expectation fully supported by his subsequent research and mentoring of colleagues and students.

Art's formal education culminated in a Ph.D. in physics from the Graduate Center of the City University of New York in 1975 followed by a post-doctoral fellowship at the University of Texas at Dallas. He joined Cities Service in 1978 and progressed through a distinguished research career at Cities, Sohio and ARCO including short-term appointments as a visiting professor at the Federal University of Bahia in Brazil, a visiting professor at Delft University of Technology in The Netherlands and a scientific advisor at Schlumberger Cambridge Research in the United Kingdom. In 2000, he moved to the University of Houston in Texas where he is now the Hugh Roy and Lillie Cranz Cullen Distinguished University Chair in Physics and Founder and Director of the Mission-Oriented Seismic Research Program.

Art has always maintained a close collaboration with both academic professionals and industry practitioners, immersing himself in the direct practical applications of his research. He is a one-person bridge between the academic and industrial worlds, routinely on the leading edge of theoretical innovations in universities while focusing new scientific insights on the immediate seismic data problems of the geophysicist exploring for and developing oil and natural gas fields. In addition to SEG's Reginald Fessenden award in 2010, Art was recognized in 2008 for his contributions to exploration seismology when he received the Townsend Harris Medal, the highest honor of the City College of New York and an honor previously given to numerous Nobel laureates.

Art's work in recent years has expanded from removal of multiples in marine seismic data to more difficult challenges: eliminating internal multiples from land seismic data in desert environments where the multiples are generated by thin discontinuous layers in the near

surface; eliminating internal multiples from marine seismic data in areas of significant structural complexity caused by salt intrusion and layering; removing internal and surface multiples from land seismic data when both primary reflections and multiples are horizontal and not distinguishable by other multiple removal methods; and direct depth imaging of seismic data without requiring the a priori determination of an accurate velocity model. These advances have elevated Art's research to a major contribution to the science of exploration geophysics.

In addition to his technical achievements, Art has made outstanding contributions to the profession of exploration geophysics through his university teaching, mentoring of students and colleagues, organizing and chairing numerous symposia and research workshops, and publishing review papers and textbooks for both graduate student and professional education. He has been the principal thesis advisor of nearly twenty-five Ph.D. students at multiple universities, five of whom have received SEG's J. Clarence Karcher Award. Art has freely disseminated his research insights in comprehensive review papers in *The Leading Edge* and *GEOPHYSICS* and in talks at SEG Annual Meetings and as an SEG Distinguished Lecturer. He is the co-author with one of us (Bob Stolt) of the two-volume publication on Seismic Imaging and Inversion from Cambridge University Press that is both a textbook for graduate-level geophysics courses and a reference book for seismic R&D.

Throughout his career, Art has demonstrated a steadfast commitment to good science, always delivered with lively intellectual curiosity and good humor. He is devoted to his family as well as his profession. He and his wife Chris are the proud parents of wonderful and successful children and are engaged contributors to their community outside geophysics. We are honored to provide this citation for the award of the Maurice Ewing Medal to Arthur B. Weglein.