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In Memory of Richard W. (Dick) Adler

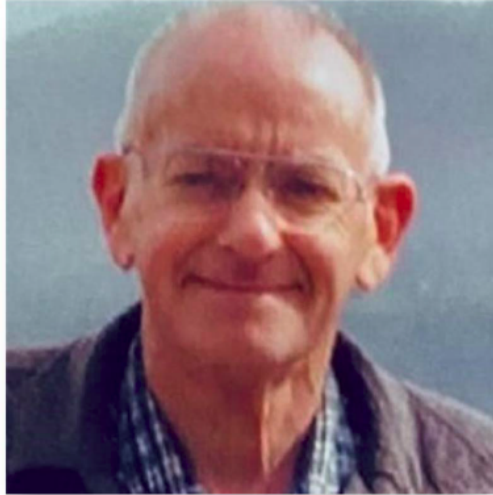


By: Edmund K. Miller

Dick Adler was a long-time mainstay of ACES. Dick, his wife Pat, sometimes with the help of one or two of their children, planned and handled all of the local arrangements during the years that ACES met at the Nave Postgraduate School in Monterey. This arrangement continued at NPS until security concerns required it to be shifted elsewhere in Monterey, a venue that remained a favorite for ACES members. Dick was also one of the founding members of TechEd Associates, a group of NEC users and developers who presented “hands-on” short-course workshops in Monterey for several years. He gave informative and entertaining presentations that could include observations like “epsilon sauce and gamma grease” that lightened up the mathematical details.

Dick himself was a hands-on engineer who contributed to a variety of antenna and communications application for military sponsors. He was an experimentalist as well as an experienced computational modeler who guided many students at the NPS through their degree work. His experimental results influenced modeling developments as well as providing data to validate the computed results. Dick was a valued colleague and friend.

Richard W. (Dick) Adler (1934–2021), a Founder of ACES



Richard W. (Dick) Adler, one of the founders of the Applied Computational Electromagnetics Society, passed away on December 30, 2021, in Bountiful, Utah, USA, at the age of 87, of a combination of causes including COVID-19.

Dick was born on November 28, 1934, in Farrell, Pennsylvania. He attended Penn State University, where he received B.S. and M.S. degrees in electrical engineering, in 1956 and 1958, respectively. He then worked in the industry, at Hughes Aircraft Company and Ford Aeronutronic, and later returned to Penn State as an Instructor in Electrical Engineering and received the Ph.D. in December 1970. In November 1969, he joined the faculty of the Naval Postgraduate School (NPS), in Monterey, California, where he taught in the Department of Electrical Engineering, and pursued research in antennas, propagation, and computational electromagnetics.

The Applied Computational Electromagnetics Society was officially launched on March 19, 1986, at the Second Annual Review of Progress in Applied Computational Electromagnetics, held at NPS in Monterey and organized by Dick Adler. Adler was the first ACES Secretary, serving with Ed Miller, the first ACES President. For decades to come, Richard was a leading force in all ACES activities and accomplishments, including ACES Conferences, Journal, Newsletter, organization, and finances.

Richard Adler will be remembered by all ACES Members and Friends as a leader and visionary without whom the field of applied computational electromagnetics and the ACES Society would not be what they have become during his most active ACES years and today.

We dedicate this issue of ACES Journal in tribute and memory of Dick Adler.

Branislav M. Notaros

President, ACES

Professor, Colorado State University

Fort Collins, Colorado, USA

In Memory of Prof. Richard “Dick” W. Adler, P.E.



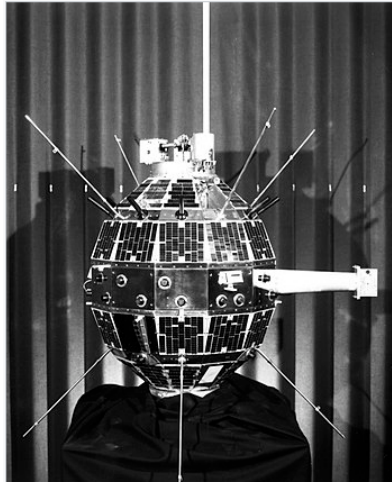
It is with great sadness that I inform ACES of the passing of Prof. Richard W. Adler on December 30th, 2021. R. W. Adler was born in Farrell, PA, in 1934. He received the BSEE and MSEE degrees from Penn State University, University Park, PA, in 1956 and 1958, respectively. He received a Ford Foundation Doctoral Forgivable Loan and completed the Ph.D. degree in electrical engineering in 1970 at the same institution.

He continued graduate studies at the Ohio State University as a Research Assistant in the ElectroScience Laboratory (ESL) until 1960, when he joined the staff at Hughes Ground Systems Group as a Design Engineer in frequency-scanned radar antennas. Graduate studies continued at the University of California, Los Angeles, until 1962, when he became a full-time instructor in the EE Department at Penn State University. In 1970 he accepted a position as an Assistant Professor at the Naval Postgraduate School (NPS), Monterey, CA. He finished as a Senior Lecturer in the Electrical and Computer Engineering Department at NPS, with academic and research interests in antennas, radiowave propagation, and electromagnetic environmental effects. His research projects supported the Naval Security Group (NSG) and later the Naval Information Warfare Activity (NIWA) and the Army Intelligence and Security Command in what was known as the Signal and Noise Enhancement Program (SNEP Team) directed at the enhancement of signal-to-noise ratio in receiving sites and the effects of terrain and platforms on the performance of communication antennas.

Prof. Adler was a licensed professional engineer and served as the Executive Officer and the Managing Editor of publications for the Applied Computational Electromagnetics Society (ACES). His memberships also included the IEEE, Eta Kappa Nu, Tau Beta Pi. and Sigma Xi.

I personally remember meeting Dr. Adler as an undergraduate student at Penn State working in what was called the Ionosphere Research Laboratory (IRL) and was working with Prof. Tony Ferraro on a project of modeling wires on a box like structure for an unnamed government agency. Dick Adler brought a software program on magnetic tape that was

named AMP for Antenna Modeling Program, the predecessor of what would eventually become the Numerical Electromagnetics Code (NEC). The object that we modeled was later declassified in 2005 as a satellite operated by the National Reconnaissance Office (NRO) named POPPY, and we received awards at a ceremony for this work that we never knew what it was at the time. That was the first time I met Dick, and I knew I needed to get to know him a lot more.



POPPY

Fortunately, I kept in touch with him and also developed a close relationship with Jerry Burke and Ed Miller at Lawrence Livermore National Laboratory (LLNL) while I was a Ph.D. student at Case Western Reserve University. LLNL was the originator of NEC, and I knew I had to go there and work with Prof. Adler and those at LLNL. I started at LLNL in 1983 and right away used to travel to Monterey, CA and work with Dick and learn from him how to really model antennas. He and I used to do consulting jobs for AM and FM broadcasting where we would try to optimize placement of antennas on towers and try to increase signal coverage and other projects. It seemed I was spending almost every weekend there in Monterey working with Dick and spending time at his house and with his family. They were so hospitable that I sometimes felt like this was my second family being with him and his wife and kids. Dick and I worked for many radio broadcasting stations in the 1980s and pushed for the use of antenna modeling to be used in addition or in the place of experimental proof antenna pattern measurements. We together presented several papers at IEEE Broadcast Technology Society annual symposiums and won the Matti S. Siukola Memorial Award for Best Paper in 1987.

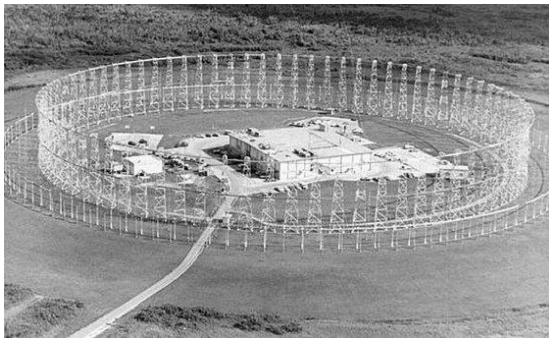
The development of NEC at LLNL was funded and directed from the Army at Ft. Monmouth and Ft. Huachuca and the Navy at San Diego and especially from Prof. Adler at the Naval Postgraduate School (NPS) at Monterey. Dick was always the one instrumental about saying what things were needed to be enhanced and put into the code. Dr. Ed Miller, Jerry Burke, Dick Adler, Jim Logan, Dr. Jay Rockway, and myself and others came up with the idea of starting an organization concerned mainly with antenna modeling and hands-on work, and this became the Applied Computational Electromagnetics Society (ACES) in 1985 with a four-day workshop at LLNL.

ACES became official at the Second Annual Review of Progress, held at NPS in March of 1986. The Review was organized by Prof. Adler, and it became an annual event for many years in March at Monterey. None of this would have ever happened without the painstaking planning and organization of Dick Adler. The first slate of officers included Ed Miller, President; James Logan (Naval Ocean Systems Center or NOSC), Vice President; Richard W. Adler, (NPS), Secretary; and James K. Breakall (LLNL), Treasurer. Dick was a mainstay for many memorable ACES conferences for many years, an annual event that many including myself really looked forward to. Dick and I both worked a lot behind the scenes to make every part of these meetings something very valuable, not just for the academic part, but also for the social gatherings. Being in Monterey/Carmel did not hurt with its picturesque setting.

Another activity that Dick took charge of for many years was putting on antenna modeling workshop short courses on either NEC or MiniNEC. He was involved in starting an organization named TechEd Associates to put on these courses, and it included Dick, Ed Miller, Jerry Burke, Jim Logan, Jay Rockway, and myself. We would usually put on a week-long series of presentations on the theory of antenna modeling and then hands-on learning how to use the codes with personal computers that were set up by Dick on each desk. Many were held in Monterey, but others would be held around the country too.

There are just too many projects to go into detail that Dick Adler was the catalyst and organizer for, but I will try to touch briefly on a few. Dick and I worked together as a team on many of these, and I know there are others that he did also with others that I was not up on as much. We worked on a multi-volume set of antenna handbooks for both the Army and Marine Corp that would be used by warriors to select the best antennas for the purpose at hand. Some other projects that come to mind are working with some other close colleagues of ours, George Hagn (SRI Intl.) and Steve Faust (Eyring Inst.) to develop and utilize methods to measure ground constants of the earth and characterize antennas in irregular terrain. Dick arranged all of the funding from the Navy and was again the organizer. One of his students, Capt. Hampshire, later took charge of the TACAMO VLF antenna that was on EC-130 and E-6A aircrafts for submarine communication, and Dick work on that with me. Dick was instrumental in a large project from NIWA with CDR Gus Lott, one of his Ph.D. students, named PENEX for Polar Equatorial Near Vertical Incidence Experiment that had the purpose of validating and exploring HF propagation codes through the auroral ionosphere and trans-equatorial paths. I remember fondly of him traveling to Cape Wales in Alaska under some interesting weather conditions to erect antennas and set up equipment. Dick would go anywhere to get the job done. In the 1990s to the 2000s, he arranged for funding to put a really nice graphical user interface (GUI) around NEC2 and NEC4 and helped set up a company, Nittany Scientific, that created NECWIN Basic and GNEC. Many versions of these packages were sold.

In the mid-1980s, Prof. Steve Jauregui at NPS along with Dick and another Prof. Ray Vincent created the Signal to Noise Enhancement Program (SNEP) to help isolate and resolve noise and other EMI issues at the Navy Security Group's large Wullenweber (Elephant Cage) antenna sites around the world. Dick was a key person involved in this work and advised many graduate students and other workers in this effort.



Wullenweber "Elephant Cage" Antenna



SNEP Van Used for Site Surveys

Dick (K6RWA) was an avid Amateur "Ham" Radio operator for many years and was involved in many activities of the Nittany Amateur Radio Club (W3YA) in State College, PA while there at Penn State and also one of the founding and active members of the Naval Postgraduate School Amateur Radio Club (K6LY) in Monterey, CA.

Following are some quotes about the passing of Prof. Adler:

Dean John Volakis of Florida International University said "His photo is exactly as I remember. As the obituary said, a helpful and very active man. I very much enjoyed my visits at Monterey because of him."

Prof. Alan Christman of Grove City College said "Dick was a great guy and a good friend – he will be missed!"

Prof. Emeritus Ronald Marhefka of Ohio State University said "Thanks for letting me know about Dick. I think about him from time to time hoping he was doing well. He had a good productive life living to 87. I too knew him well mostly in the 80's and 90's and appreciated all he did for ACES and many of us early attenders to the conference. Plus, we did a short course at Fort Huachuca for a week one time. I will miss him."

Dr. Jay Rockway (retired Navy NOSC, NRAD, SPAWAR) said "When I became a Federal employee with the Navy, Dick was one of first persons with whom I worked. It was my privilege to know such a creative and honorable person. You were always amazed by what would be the next project/effort."

Prof. Emeritus Ed Miller said "Sad news. We had many good meetings and times at the Postgraduate School over the years. Trying to remember when I first met Dick and think it might have been 1971 at a meeting or short course."

It is hard to believe he is not with us anymore. I would like to speak for all of his friends in ACES, IEEE APS, IEEE Broadcasting, NPS, Penn State, and Amateur Radio to pass on our sincere condolences to Dick's wife and family. We all will really miss him so much. Rest in peace our dear friend Prof. Richard W. Adler.

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