

CANDIDATES STATEMENTS
2003 ELECTION FOR THE BOARD OF DIRECTORS

DR. ALKIM AKYURTLU



GENERAL BACKGROUND

Alkim Akyurtlu was born in Madison, WI, in November 1972. She earned her B.S.E.E. at Virginia Polytechnic Institute and State University (Virginia Tech) in 1994. She earned the M.S. and Ph.D. degrees in Electrical Engineering at the Pennsylvania State University in 1996 and 2001, respectively. During her graduate studies, she was an Academic Computing Fellow, she won the ACES Best Student Paper Contest in 2000, and the Anthony Ferraro Best Doctoral Research Award in 2001.

After graduation Dr. Akyurtlu joined the Systems and Analysis Group at MIT Lincoln Laboratory, where she worked on statistical analysis of radar systems and applications of meta-materials.

Currently, she is an Assistant Professor in the Electrical and Computer Engineering Department at University of Massachusetts Lowell where she is conducting research in computational electromagnetics, teaching courses on antenna theory and radar systems, and supervising the research of M.S. and Ph.D. students. Prof. Akyurtlu's current research interests include computational electromagnetics with applications in meta-materials and antennas, and micro- and nano-scale device modeling. Prof. Akyurtlu has been awarded the NASA Faculty Fellowship Award for 2003 and the Teaching Award in the Electrical Engineering Department at UMass Lowell for the 2002-2003 academic year.

Dr. Akyurtlu is a member of ACES and the IEEE Antennas and Propagation and Microwave Theory and Techniques Societies.

PAST SERVICE TO ACES

The candidate's past service to ACES includes presentation of papers at the 2000 and 2001 ACES Conferences.

CANDIDATE'S PLATFORM

Computational electromagnetics has been very successful in answering the many complicated questions in the field of electromagnetics. It will play an even more important role in the future as we move into new ways of thinking about conventional problems at the nano-scale levels. Integration of electromagnetics with other research areas will also be very significant in the development of new technologies. I believe that ACES will be an integral venue to carry the area of computational electromagnetics into exciting future frontiers, increase interdisciplinary research, and raise the focus on applications of computational electromagnetics in the advanced technologies. In order to accomplish the aforementioned goals, advertisement of ACES activities and seminars so as to attract the most recent advances in the area of computational electromagnetics and relevant interdisciplinary research is necessary. I would like to contribute

to increasing participation in ACES and to continuing to make this society an arena for advancing technology. ACES is very important in bringing the electromagnetics community together and in exposing the newest and most significant advancements in the application of computational electromagnetics and should continue to maintain its strong role in the future.

DR. RANDY HAUPT



GENERAL BACKGROUND

Randy Haupt is an IEEE Fellow and Professor and Department Head of Electrical and Computer Engineering at Utah State University. He has a Ph.D. in Electrical Engineering from the University of Michigan, MS in Electrical Engineering from Northeastern University, MS in Engineering Management from Western New England College, and BS in Electrical Engineering from the USAF Academy. He was a Professor of Electrical Engineering at the USAF Academy and Professor and Chair of Electrical Engineering at the University of Nevada Reno. Randy was a project engineer for the OTH-B radar and a research antenna engineer for Rome Air Development Center. His research interests include genetic algorithms, antennas, radar, numerical methods, signal processing, fractals, and chaos. He was the Federal Engineer of the Year in 1993 and is a member of Tau Beta Pi, Eta Kappa Nu, URSI Commission B, and Electromagnetics Academy. He has numerous journal articles, conference publications, and book chapters on antennas, radar cross section and numerical methods and is co-author of the book *Practical Genetic Algorithms*, John Wiley & Sons, Jan 1998. Randy has eight patents in antenna technology and is director of the Utah State University Anderson Wireless Center. He teaches courses in antennas and computational electromagnetics.

PAST SERVICE TO ACES

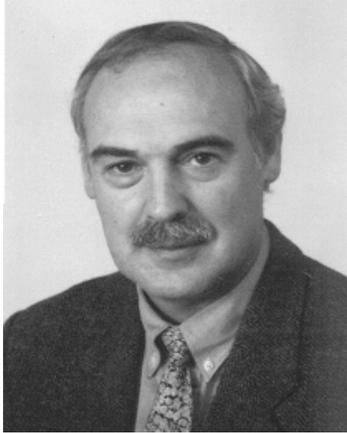
- Received ACES Valued Service Award in 2000
- Guest Editor for ACES Journal special issue on genetic algorithms in Jul 00
- Conference Chair for 1999 ACES International Symposium
- Co-chair of ACES conference Mar 1998
- Co-chair of ACES conference Mar 2000
- Presented ACES short courses in 97, 98, 99
- Took 8 ACES short courses
- Served as session chair at ACES conferences
- Presented 11 papers at ACES Conference
- Attended 10 ACES conferences

CANDIDATE'S PLATFORM

- I have always liked ACES because of its practical focus. I would continue to emphasize and expand this focus. The publications, the conference, the web site, and the short courses should be excellent references for members. Perceived value will result in growth.

- The international participation in ACES is extremely valuable and every effort should be made to encourage a broad participation.
- Some effort should be made to improve the impact factor of the ACES Journal.
- It would be worthwhile to have book reviews and software reviews for members.
- I would like to encourage the presentation of new and interdisciplinary approaches to computational methods.

DR. JUAN R. MOSIG



GENERAL BACKGROUND

Juan R. Mosig was born in Cadiz, Spain. He received his Telecommunication Engineering Degree (M. Sc. E.) from the Polytechnic University of Madrid, Spain in 1974 and the Ph.D. degree from the Swiss Institute of Technology (Ecole Polytechnique Fédérale) of Lausanne, Switzerland in 1983.

In 1985 he was a Senior Research Associate at R.I.T., Rochester, NY, working for DEC in a project under the direction of Prof. T. K. Sarkar. He has also held summer scientific appointments at University of Colorado at Boulder, CO, Technical University of Denmark, Universities of Rennes and Nice in France and University of Rome-La Sapienza in Italy.

Since 1991 he has been a professor at EPFL and since 2000 the Head of the EPFL Laboratory of Electromagnetics and Acoustics (LEMA). In 2003 he became the Director of the Institute for Transmissions, Electromagnetic Waves and Photonics (iTOP).

Dr. Mosig is the author of four chapters in books on microstrip antennas and circuits and more than hundred reviewed papers. He received twice the Best Paper Award at the JINA Conference on Antennas (Nice, France) and he is now a member of its Steering Committee. His research interests include electromagnetic theory, numerical methods and planar antennas and he is a Fellow of the IEEE.

Since 1987, Dr. Mosig has been actively involved in the organization of intensive short courses in Numerical Electromagnetics in the USA (with University of Syracuse NY, Boulder Microwave Technology, Ansoft...) that he has successfully introduced in Europe. He has been a member of the IEEE Antennas and Propagation Society AdCom as responsible of Transnational Activities. In 2000, Dr. Mosig was the Head of the National Swiss Committee for the European Millennium Antenna and Propagation Conference, organized by the European Space Agency in Davos, Switzerland.

Dr. Mosig has been a Steering Committee Member in the European Research programme MADS (Multipurpose Antenna Design Simulator, 1998-2002) which put together leading European universities and industrial R&D groups, targeting for the first time the development of a "universal antenna numerical tool". This effort is currently being pursued under a grant from the European Space Agency. He is also the Swiss representative in the European project "FractalComs" aiming at the electromagnetic analysis of fractal geometry antennas and a member of the European "Research Training Network MMCODEF", whose goal is the exchange of postgraduate students between participant European universities and subsequent training in the European microwave industries.

Since 1999, Dr. Mosig is a member, nominated by the Swiss Federal Government, of the Technological Policy Advisory Committee for the Swiss Space Office. He is also technical advisor for the curricula program of several newly created Polytechnic Universities in Spain.

Dr. Mosig is the responsible for introducing by the first time (year 2000) a session in Computational Electromagnetics in the European Congress on Computational Methods in Applied Science and Engineering (ECCOMAS), where is a member of the Technical Committee.

Currently, Dr. Mosig is the Chairman of an European COST (Scientific and Technological European Cooperation) Action, the COST-284 project "Innovative Antennas for Emerging Terrestrial and Space-based applications", which is a five years (2002-2006) project with the participation of 19 European countries aiming at fostering the development of antenna and electromagnetic research in Europe and including an active Working Group on antenna design softwares.

PAST SERVICES TO ACES

The candidate has contributed with several papers to ACES Symposia, which he considers the most adequate venue for presentation and dissemination of research works in numerical electromagnetics

CANDIDATE'S PLATFORM

With the increasing widening of electrical engineering domains and the consequent lack of focus of its traditional societies, ACES should now be the obvious society for any researcher, scientist or engineer concerned with Numerical Electromagnetics. I would like to strongly support this idea not only in the USA but elsewhere in the world and especially in Europe. ACES publications and ACES Symposia should become the reference for theoreticians, code developers and code users in the area of Electromagnetics.

At the research level, I believe that we need to strength the link from fundamental theoretical research and numerical applications, since tomorrow's successful commercial codes will be based in today's advanced mathematical algorithms. Also, Applied Computational Electromagnetics should explore more deeply the possible parallels and synergies with other engineering domains where numerical and computational methods play an important role. I think that we can still borrow many useful ideas from Fluid and Structural Mechanics or from Civil and Chemical Engineering, and in turn show to them the richness of Computational Electromagnetics and the specificity of our implementations. In this respect, the introduction of a "Computational Electromagnetic area" in the ECCOMAS Symposium has been a very positive experience and I would like to explore further possibilities of these synergies.

I am fully committed to engineering education and I believe ACES can play an essential role in influencing the future curricula for Bachelor, Master and Ph.D. programmes, not only in the USA but elsewhere in the world. In Europe, we are striving for keeping alive the teaching of courses in Numerical Electromagnetics at both undergraduate and postgraduate levels and ACES should provide an excellent source and frame for an active campaign in this direction. In parallel, ACES Conferences should be better advertised and their associated short courses systematically connected with University credits in order to encourage participation of young researchers which would look afterwards at ACES as a top professional society.

OTHER UNIQUE QUALIFICATIONS

Being actively present in both Higher Education (as an University Professor in a leading European Institute of Technology) and in Applied Electromagnetics Research (as a leader of a team deeply involved in many high-end numerical electromagnetics projects at the European level), I think I have an excellent vantage position to work towards the consecution of above mentioned goals. Moreover, in my role of Chairman of an European COST Action, I have excellent links with all the European Research Institutes in our domain and also in parallel engineering areas, where equivalent computational tools are used. I am currently involved in an ambitious proposal for creating a European Union "Network of Excellence on Antenna Research". If successful, this Network could become a privileged partner of ACES and contribute to the ACES worldwide recognition.

DR. OMAR RAMAHI



GENERAL BACKGROUND

Omar M. Ramahi received the BS degrees in Mathematics and Electrical and Computer Engineering, with highest honors, from Oregon State University, Corvallis, OR in 1984. He received his M.S. and Ph.D. in Electrical and Computer Engineering in 1986 and 1990 respectively from the University of Illinois at Urbana-Champaign. From 1990-1993, he held a visiting fellowship position at the University of Illinois at Urbana-Champaign including a one-year appointment as a Postdoctoral Fellow working with the Professor Y. T. Lo on microstrip antenna problems. In 1993, he joined Digital Equipment Corporation as a member of the Technology Development Group. In 1994 he became a member of the alpha server product development group at the same company. In August of 2000, he joined the faculty of the A. James Clark School of Engineering at the University of Maryland at College Park, where he presently holds a faculty appointment in the Mechanical Engineering Department and an affiliate appointment in the Electrical and Computer Engineering Department. Professor Ramahi is also a faculty member of CALCE Electronics Products and Systems Center at the University of Maryland.

Dr. Ramahi served as a consultant to several companies. He was instrumental in developing computational techniques to solve a wide range of electromagnetic radiation problems in the fields of antennas, high-speed devices and circuits and EMI/EMC. He has developed computational electromagnetic codes based on the Method of Moments, the Finite Element method, the Finite-Difference Time-Domain method, amongst others. His interests include theoretical, experimental and computational EMI/EMC studies, high-speed devices and interconnects, biomedical applications of electromagnetics, novel optimization techniques, interdisciplinary studies linking electromagnetic application with new materials. He has authored and co-authored over 110 journal and conference papers and presentations. He is a co-author of the book *EMI/EMC Computational Modeling Handbook*, 2nd Ed., (Kluwer Academic, 2001). Dr. Ramahi is a member of Eta Kappa Nu and Tau Beta Pi honor societies. He is also a Senior Member of IEEE and a member of the Electromagnetics Academy.

PAST SERVICE TO ACES

The candidate's past service to ACES includes presentation of numerous papers, organization of special sessions for the ACES Symposia and participation as short course instructor.

CANDIDATE'S PLATFORM

The field of electromagnetism (EM) is probably one of the very few fields in applied science that has reached a high level of maturity. Computational electromagnetism, which is considered the applied side of electromagnetism, has witnessed an explosive growth in the past fifteen years. Today, we have numerical algorithms that can characterize wave-matter electromagnetic interaction with a high degree of accuracy and with sufficient speed. Despite the maturity in both theoretical and computational electromagnetism, the application of computational EM to new technological frontiers remains in its infancy. For instance, in the emerging field of nanotechnology, sensors, biomedical devices, amongst others, electromagnetism is expected to play a significant role. For computational EM practitioners, the primary challenge is in the fact that these new technologies are driven by strong interdisciplinary research teams that are typically devoid of computational EM experts. Interestingly enough, the classical EM practitioner paradigm has changed. Instead of using computational EM to solve known problems, we need to look at applications that can be designed by harvesting the power of EM with the aid of computational EM.

Having the vintage point of working with mechanical, electrical, and aerospace engineers in the emerging technologies, I have the advantage of identifying new and significant applications of computational EM and bring these applications to the EM community through ACES. Furthermore, bringing a strong focus to ACES activities and seminars would be a priority. Despite the plethora of symposia and technical societies involved in electromagnetics, there is a distinct place for a society, such as ACES, which is devoted exclusively to practical computational electromagnetics. For this reason, ACES needs to have a strong focus through symposia and published media that reinforces its distinct thrust. The ACES annual meeting has been suffering in the past few years from lower attendance than in the earlier years. This phenomenon needs to be addressed and structural changes might become necessary to maintain the vitality, strength and relevance of ACES. These are some of the issues that I like to address if I become a Board Member.