

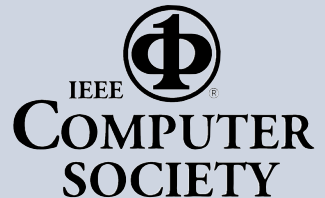
FIE

2000
KANSAS CITY

30th Annual Frontiers in Education Conference Awards Banquet

Kansas City, Missouri

October 21, 2000



The IEEE Education Society
The ASEE Education Research and Methods Division
The IEEE Computer Society

Award Coordinators

Awards and Recognition Coordinator Marion O. Hagler

Awards Committee Chairs

Frontiers in Education Conference

FIE Benjamin J. Dasher Best Paper Award Richard S. Culver

FIE Ronald J. Schmitz Award Richard S. Culver

IEEE Education Society

IEEE ES Hewlett-Packard/Harriett B. Rigas Award Karan L. Watson

IEEE ES McGraw-Hill/Jacob Millman Award James R. Rowland

IEEE ES Meritorious Service Award Edwin C. Jones Jr.

IEEE ES Achievement Award Chalmers F. Sechrist

ASEE ERM Division

ASEE ERM Division Distinguished Service Award Barbara M. Olds

ASEE ERM Division Helen Plants Award Julie Ellis

IEEE Computer Society

IEEE CS Undergraduate Teaching Award Ming T. (Mike) Liu

ASEE ECE Division

Hewlett-Packard Frederick Emmons Terman Award Randy H. Katz

IEEE Educational Activities Board

IEEE EAB Major Educational Innovation Award Richard S. Nichols

IEEE Awards Board H. Troy Nagel

Sponsoring Organizations

IEEE Education Society

Karan L. Watson, President

Ted E. Batchman, FIE Program Chair, and James (Jim) A. Roberts, FIE General Chair

ASEE Educational Research and Methods Division

Barbara M. Olds, Chair

Mike Pavelich, FIE Program Chair

IEEE Computer Society

Guyline M. Pollock, President

Jane C. Prey, FIE Program Chair

Awards Ceremony Agenda

Moderator: Marion O. Hagler, Vice President
IEEE Education Society

IEEE Technical Field Award for Undergraduate Teaching

Presenter:
Kenneth R. Laker, Past President
IEEE

IEEE Technical Field Award for Graduate Teaching

Presenter:
Kenneth R. Laker, Past President
IEEE

IEEE Third Millennium Medals

Presenter:
Kenneth R. Laker, Past President
IEEE

IEEE Educational Activities Board Major Educational Innovation Award

Presenter:
Lyle D. Feisel, IEEE Vice President–Educational Activities
IEEE Educational Activities Board

ASEE ECE Division Hewlett-Packard Frederick Emmons Terman Award

Presenter:
Alfred L. Moyé, Director of University Affairs
Hewlett-Packard Company

IEEE Computer Society Undergraduate Teaching Award

Presenter:
Gylaine M. Pollock, President
IEEE Computer Society

ASEE ERM Division Distinguished Service Award

Presenter:
Barbara M. Olds, Chair
ASEE ERM Division

ASEE ERM Division Helen Plants Award: Best Non-Traditional Session at FIE

Presenter:
Barbara M. Olds, Chair
ASEE ERM Division

IEEE Education Society Meritorious Service Award

Presenter:
Karan L. Watson, President
IEEE Education Society

IEEE Education Society Achievement Award

Presenter:
Karan L. Watson, President
IEEE Education Society

IEEE Education Society McGraw-Hill/Jacob Millman Award

Presenter:
Karan L. Watson, President
IEEE Education Society

IEEE Education Society Transactions Best Paper Award

Presenter:
Karan L. Watson, President
IEEE Education Society

IEEE Education Society Hewlett-Packard/Harriett B. Rigas Award

Presenter:
Karan L. Watson, President
IEEE Education Society

Frontiers in Education Conference Benjamin J. Dasher Best Paper Award

Presenter:
Larry Richards, Chair
FIE Benjamin J. Dasher Best Paper Award Committee

Frontiers in Education Conference Ronald J. Schmitz Award

Presenter:
Richard S. Culver, Chair
FIE Ronald J. Schmitz Award Committee

FIE

2000
KANSAS CITY

30th Annual
Frontiers in Education
Conference Awards Banquet



Haniph A. Latchman

Department of Electrical &
Computer Engineering
University of Florida
Gainesville, Florida

IEEE Technical Field Award for Undergraduate Teaching

Presented by: *Kenneth R. Laker*

“For innovative and inspirational teaching and advancing the use of information technology in education.”

Teaching enthusiastically, with high levels of student interaction, real-world applicability, innovation, and charisma, Dr. Haniph Augustus Latchman consistently inspires his students, peers, and superiors.

A natural educator, Dr. Latchman’s teaching abilities at the University of Florida have earned him numerous awards. Extending his reach beyond the classroom, his contributions also include leadership and development of an important and ongoing Internet-based learning process, key research, authorship of important books and articles, meaningful student mentoring, and success in industry.

Dr. Latchman developed a teaching system that uses synchronized streaming media and other resources for effective online learning, both to augment the experience of on-campus students and to facilitate distance learning. Based on the program’s success, the University of Florida is beginning to offer courses online.

Dr. Latchman was born September 3, 1959, in St. Catherine, Jamaica. He earned a BSc degree in electrical engineering from the University of the West Indies in 1981, then worked for the Jamaica Telephone Company. In 1983 he was awarded a Rhodes scholarship, and he earned a DPhil in engineering from Oxford University in 1986.

In 1987 Dr. Latchman joined the faculty of the University of Florida, where he has taught a variety of electrical engineering courses and directed eight PhD dissertations and 28 MS thesis projects. As director of the Laboratory for Information Systems and Telecommunications and co-director of the Research Laboratory for Control System and Avionics, his research centers on robustness issues in multivariable systems analysis and design, and on packet and wireless communications and networks.

Dr. Latchman is a team leader for the Southeastern University and College Coalition for Engineering Education (SUCCEED) program. He has taught and conducted research as a visiting faculty member at top universities around the world. A director and co-founder of Jamaica Online Information Systems Ltd. and Qualitech Computer Services, he has also consulted with and served as an expert witness for leading businesses and organizations.

A senior member of the IEEE, Dr. Latchman has published two books and more than 75 technical journal articles and conference proceedings, and has given key conference presentations. The numerous awards and honors he has won include the University of Florida Teacher-of-the-Year Award, two Teaching Improvement Project awards, a Boeing Welliver Faculty Fellowship, and a Fulbright Fellowship to the Czech Republic.

Dr. Latchman also is associate editor for the *IEEE Transactions on Education* and guest editor for the *International Journal of Nonlinear and Robust Control*.



Weng Cho Chew

Department of Electrical &
Computer Engineering
University of Illinois at
Champaign-Urbana
Urbana, Illinois

IEEE Technical Field Award for Graduate Teaching

Presented by: Kenneth R. Laker

“For contributions to the inspirational teaching of graduate students, developing graduate curricula, and inculcating enthusiasm in graduate research in classical and computational electromagnetics.”

An inspiration to countless students, Dr. Weng Cho Chew is an inventive educator and developer of graduate curricula in electromagnetics.

Dr. Chew’s approach to teaching is grounded in the strong belief that everyone can learn difficult concepts if the concepts are explained simply enough. His dedication to teaching excellence has landed him on the University of Illinois’ “List of Excellent Teachers” 18 times. He has supervised more than 30 theses, about half of which are doctoral.

Since joining the Electrical and Computer Engineering Department at the University of Illinois in 1985, Dr. Chew has developed advanced graduate-level courses in electromagnetics, including courses in waveguide theory, fields and waves in inhomogeneous media, and computational electromagnetics. These three have become the most popular courses among electromagnetics, optics, and solid state students.

Weng Cho Chew was born June 9, 1953, in Malaysia. He received a BS, an MS, an engineer’s degree, and a PhD in electrical engineering from the Massachusetts Institute of Technology, where he also spent two years of post-doctoral research from 1980 to 1981.

From 1981 to 1985 Dr. Chew worked at Schlumberger-Doll Research in Ridgefield, Connecticut, where he was a program leader and department manager. From 1985 to 1990 he was an associate professor with the University of Illinois, where he is a professor. From 1989 to 1993 he was associate director of the university’s Advanced Construction Technology Center, where he is director of the Center for Computational Electromagnetics and the Electromagnetics Laboratory.

Author of *Waves and Fields in Inhomogeneous Media*, considered a classic in its field, Dr. Chew has published more than 200 scientific journal articles and presented more than 270 conference papers.

An IEEE fellow, Dr. Chew has earned many honors, including being named an NSF Presidential Young Investigator and winning the MURI award in 1995. He is a speaker at numerous conferences and symposiums. He was also an AdCom member of the IEEE Geoscience and Remote Sensing Society, and for many years has been an associate editor of the *IEEE Transactions of Geoscience and Remote Sensing*, the *Journal of Electromagnetic Waves and Applications*, and *Microwave Optical Technology Letters*.

IEEE Third Millennium Medals

Presented by: Kenneth R. Laker

“For outstanding contributions to the IEEE Education Society.”

Ted E. Batchman
University of Nevada–Reno
Reno, Nevada

Alfred L. Moyé
Hewlett-Packard Company
Palo Alto, California

Patricia D. Daniels
Seattle University
Seattle, Washington

Burks Oakley II
University of Illinois at
Urbana-Champaign
Urbana, Illinois

Edward W. Ernst
University of South Carolina
Columbia, South Carolina

Pat L. Ransom
University of Illinois at
Urbana-Champaign
Urbana, Illinois

Hugo E. Hernandez Figueroa
Universidade de Estadual de
Campinas
Brazil

William E. Sayle II
Georgia Institute of
Technology
Atlanta, Georgia

Edwin C. Jones Jr.
Iowa State University
Ames, Iowa

Chalmers F. Sechrist Jr.
Florida Gulf Coast University
Fort Myers, Florida

David V. Kerns Jr.
Franklin W. Olin College of
Engineering
Needham, Massachusetts

Timothy L. Skvarenina
Purdue University
West Lafayette, Indiana

Sherra E. Kerns
Franklin W. Olin College of
Engineering
Needham, Massachusetts

Robert L. Sullivan
Florida Institute of
Technology
Melbourne, Florida

Donald E. Kirk
San Jose State University
San Jose, California

Karan L. Watson
Texas A&M University
College Station, Texas



Hidenori Akiyama

Department of Electrical &
Computer Engineering
Kumamoto University
Kumamoto, Japan

IEEE Educational Activities Board Major Educational Innovation Award

Presented by: Lyle D. Feisel

“For developing innovative educational material in high-voltage pulsed power engineering and Web-based laboratory experiments.”

Hidenori Akiyama (M '87, SM '99, F '00) received a BSEE in 1974 in electrical engineering from the Kyushu Institute of Technology, and MSEE and PhD degrees in 1976 and 1979, respectively, from Nagoya University in Japan. In 1979 he was on the faculty of Nagoya University. In 1985 he joined Kumamoto University, where he is professor of electrical and computer engineering. He was a visiting professor at Texas Tech University and Old Dominion University, USA; at the National Institute of Fusion Science, Japan; and at the Institute of Plasma Physics, Forschungszentrum Julich, Germany. He has authored two books and co-authored more than 160 publications in archival journals and refereed international conferences.

Professor Akiyama has guided the education of hundreds of students in pulsed power during the last 15 years. This tremendous effort has significantly influenced the development of pulsed power technology in several companies in Japan, where his students have been employed successfully.

Professor Akiyama developed innovative teaching laboratory experiments that simultaneously incorporate distance real and virtual experiments employing computer software. This unique combination has been put on the Web successfully. It is interactive, and students can choose the system best suited to them. It incorporates sound and vision and is continuously displayed. This is the first time this has been done in Japan.

Professor Akiyama is a member of the American Society for Engineering Education and the IEEE Education Society. He was elected a fellow of the IEEE in 2000 “for contributions to the development of pulsed power technology and its industrial application.”



Sergio Verdú

Department of Electrical
Engineering
Princeton University
Princeton, New Jersey

ASEE ECE Division Hewlett-Packard Frederick Emmons Terman Award

Presented by: Alfred L. Moyé

“Presented to an outstanding young electrical engineering educator in recognition of his contribution to the profession.”

Dr. Sergio Verdú is professor of electrical engineering at Princeton, where he teaches and conducts research in the Information Sciences and Systems Group. He received a telecommunications engineering degree from the Polytechnic University of Barcelona in 1980 and a PhD in electrical engineering from the University of Illinois at Urbana-Champaign in 1984.

Conducted at the Coordinated Science Laboratory of the University of Illinois, his doctoral research pioneered the field of multiuser detection. He is also affiliated with the Program in Applied and Computational Mathematics.

Dr. Verdú has received many awards and worldwide recognition for his papers. His book, *Multiuser Detection*, was published in 1998. He was elected a fellow of the IEEE in 1993 for “contributions to multiuser communications and to information theory.” He has been an elected member of the IEEE Information Theory Society Board of Governors and president of the IEEE Information Theory Society.



Joseph L. Zachary

School of Computing
University of Utah
Salt Lake City, Utah

IEEE Computer Society Undergraduate Teaching Award

Presented by: Guylaine M. Pollock

“For outstanding and sustained contributions to undergraduate computational science education, including writing innovative textbooks, developing innovative online educational materials, and teaching an exemplary introductory scientific programming course.”

Joseph L. Zachary is professor in the School of Computing at the University of Utah, where he has been a member of the computer science faculty for 14 years. He earned a PhD in 1987, an SM in 1983, and an SB in 1979, all in computer science from the Massachusetts Institute of Technology.

Dr. Zachary’s research and academic interests center on the application of computing to computer science education. He has worked since 1991 to develop and deliver online courses that cover introductory computer science topics, and to date he has created four such courses. An accomplished classroom teacher, since 1987 he has taught (in both his regular and online courses) more than 10,000 students in 17 courses at the University of Utah.

In 1993 Dr. Zachary became a charter member of the Department of Energy’s Undergraduate Computational Engineering and Science (UCES) project, where he was influential in promoting a new approach to teaching scientific programming to beginning science and engineering students. As a direct outgrowth of his work in the UCES project, he wrote two introductory scientific programming textbooks, the first in 1996 and the second in 1998, and developed an extensive suite of interactive courseware to accompany them.



Bruce W. Weide

Department of Computer and
Information Science
Ohio State University
Columbus, Ohio



Timothy J. Long

Department of Computer and
Information Science
Ohio State University
Columbus, Ohio

IEEE Computer Society Undergraduate Teaching Award

Presented by: Guylaine M. Pollock

“For innovative work in the content and pedagogy of introductory computer science education, linking research in software engineering with educational delivery of the material taught in the introductory courses.”

Bruce W. Weide is professor of computer and information science at Ohio State University, where he co-directs the Reusable Software Research Group with Tim Long, Bill Ogden, and Stu Zweben. His research includes all aspects of software component engineering, especially applying RSRG work to practice and teaching its principles to computer science students. Among RSRG’s technical innovations are the RESOLVE software component engineering discipline and the “swapping paradigm” for component design and implementation. RSRG work has been supported by NSF, FIPSE, DARPA, Microsoft Research, and Lucent Technologies. Dr. Weide holds a PhD in computer science from Carnegie Mellon University (1978) and a BSEE from the University of Toledo (1974). He is a member of IEEE, ACM, CPSR, and UCS.

Timothy J. Long is associate professor of computer and information science at Ohio State University. In the past decade the Reusable Software Research Group at Ohio State (which Dr. Long co-directs) has developed RESOLVE, a conceptually robust and sound technology for the design, specification, implementation, verification, testing, and application of reusable software components. His current interests concern injection of the RESOLVE technology into the undergraduate curriculum through the design, development, installation, and evaluation of an integrated sequence of courses in software design and development, starting with the first programming course for computer science majors. His research concerns the technical content of this sequence and the pedagogically most effective methods for development of student skills and knowledge. He holds a PhD in computer science from Purdue University (1978), an MS in computer and information science from Ohio State University (1974), and BS and BA degrees in mathematics from the University of Cincinnati (1972).



Richard S. Culver

Department of Mechanical
Engineering
SUNY-Binghamton
Binghamton, New York

Past Recipients

- '95 Wallace S. Venable
- '96 James E. Stice
- '98 Billy V. Koen
Alisha A. Waller
- '99 John C. Lindenlaub

ERM Division Distinguished Service Award

Presented by: Barbara M. Olds

*“For outstanding service to the ASEE Education
and Research Methods Division.”*

Richard S. Culver is professor of mechanical engineering and past director of the Division of Engineering Design at SUNY-Binghamton. He has been active in ASEE for more than 20 years, serving as chairman of the ERM Division, chairman of the St. Lawrence Section, and member of the board of directors as chair of PIC IV. He was voted Outstanding Campus Representative of Zone II in 1990 and Outstanding Educator of the St. Lawrence Section in 1998. He was elected a fellow of ASEE in 1998.

His research has focused on learning methods and student development. He was an early advocate of Perry's scheme of intellectual and ethical development as a basis for curriculum design. He was the first director of the EPICS program at the Colorado School of Mines, integrating instruction in communications, graphics, computers, and design. He also developed a similar program, DTeC, at Binghamton.

Active in the Frontiers in Education conference since 1979, he was general chairman of FIE in 1989. He received the Dasher Best Paper Award in 1986 and the Ron Schmitz Award in 1997.



Melinda Piket-May

Department of Electrical and
Computer Engineering
University of Colorado–Boulder
Boulder, Colorado



Julie L. Chang

Avaya Inc., the former Enterprise
Networks Group of Lucent
Technologies
Westminster, Colorado

Past Recipients

- '80 Helen Plants
- '81 Jim Russell
John C. Lindenlaub
- '82 Karl A. Smith
Harold Goldstein
- '83 E. Dendy Sloan
Charles F. Yokomoto
- '84 David W. Johnson
Karl A. Smith
- '85 Billy V. Koen
- '86 Martha A. Nord
Patricia H. Whiting
- '87 John C. Lindenlaub
- '89 Karl A. Smith
- '91 Troy E. Kostek
- '92 Barbara M. Olds
Ronald L. Miller
Michael J. Pavelich
- '93 John C. Lindenlaub
Alisha A. Waller
- '94 Billy V. Koen
- '95 Burks Oakley II
Mark A. Yoder
- '96 Alisha A. Waller
Edward R. Doering
Mark A. Yoder
- '97 Karl A. Smith
Elizabeth A. Eschenbach
James D. Jones
- '98 Alice Agogino

ASEE ERM Helen Plants Award: Best Non-Traditional Session at FIE

Presented by: Barbara M. Olds

*“Best Non-Traditional Session FIE 1999,
Encouraging Creativity Workshop.”*

Melinda Piket-May (S '89, M '92, SM '99 of IEEE) received a BSEE from the University of Illinois–Champaign in 1988 and MSEE and PhD degrees in electrical engineering from Northwestern University in 1990 and 1993. Her work includes internships at Fermi National Accelerator Lab, the Naval Research Lab, and Cray Research, and developing several teaching programs. In 1993 she joined the ECE Department at the University of Colorado–Boulder, where she is associate professor. Dr. Piket-May has an active research program in computational electromagnetics. Her work includes development of general methods to extract information from the numerical simulation. Her research is industrial based, with applications in high-speed analog and digital design, EMC/EMI, solar cell design, and wireless communication at companies such as Intel, Cisco, TRW, and Motorola. She has been elected to the International Administrative Committee of the IEEE Antennas and Propagation Society and is associate editor of the *IEEE Antennas and Propagation* journal. She was elected member-at-large for the U.S. National Council of the International Union of Radio Science. Her service on technical committees always includes educational issues.

Dr. Piket-May is active in engineering education. Her focus is on moving toward an interactive environment in which students are in charge of the learning. She works on undergraduate engineering design issues and incorporating research into the classroom in an interactive and meaningful way. She received a 1996 URSI Young Scientist Award and was named a Sloan New Faculty Fellow in 1997. She was awarded a National Science Foundation CAREER award in 1997 for her research and teaching. She is involved in engineering education activities that educate K–12 students, college students, and the population at large regarding technical literacy. She also has active undergraduate research projects funded by the National Center for Innovation and Invention in Academia.

Her first-year students have displayed their work at the Smithsonian American History Museum twice. Her biography is on the National Academy of Engineering's celebration of Women in Engineering Gallery to encourage young women to consider engineering as a career (www.nae.edu). Her biography will also be included in a new book, *Women Who Soar*. She is co-general chair for the Frontiers in Engineering 2003 conference to be held in Colorado.

Julie L. Chang received a BS in electrical engineering from the University of Cincinnati and MS and PhD degrees (1997) in electrical engineering from the University of Colorado–Boulder. Her dissertation investigated the importance of the nonmigrating component of the diurnal tide in the mesosphere and lower thermosphere using a meteor radar and model simulations. In addition, she researched whether tropospheric gravity wave activity could be quantified using 50 MHz radar data collected at tropical Pacific sites.

As a recipient of a 1997 NSF Postdoctoral Fellowship in Science, Mathematics, Engineering, and Technology Education, Dr. Chang was a research associate in the Department of Electrical and Computer Engineering and the Integrated Teaching and Learning Program at the University of Colorado. She developed assessment and evaluation tools, incorporating collaborative learning into the classroom, and coordinated a clustering program that provided more individualized support for first-year engineering students. She joined Avaya, Inc., the former Enterprise Networks Group of Lucent Technologies, in 2000 and is working in the Messaging R&D organization.



Ted E. Batchman

College of Engineering
University of Nevada–Reno
Reno, Nevada

Past Recipients

- '78 Warren B. Boast
- '79 Joseph M. Biedenbach
- '80 Edwin C. Jones Jr.
- '81 Lyle D. Feisel
- '82 Roy H. Mattson
- '83 Robert F. Fontana
- '84 Gerald R. Peterson
- '85 Luke H. Noggle
- '86 James A. Mulligan
Sidney S. Shamis
- '87 Thomas K. Gaylord
- '88 Robert F. Cotellessa
- '89 E. Ben Peterson
- '90 Darrell L. Vines
- '91 Victor K. Schutz
- '92 William K. LeBold
- '93 Frank S. Barnes
- '94 Patricia D. Daniels
- '95 Robert W. Ritchie
- '96 Marion O. Hagler
Donald E. Kirk
- '97 Robert Sullivan
- '98 Burks Oakley II
- '99 Gerald L. Engel

IEEE Education Society Meritorious Service Award

Presented by: Karan L. Watson

“For distinguished service as editor of the IEEE Transactions on Education and for contributions to the Frontiers in Education Conference.”

Ted Batchman earned his degrees, all in electrical engineering, at the University of Kansas, finishing his PhD in 1966. He has industrial experience with Sandia Corporation and the Missiles and Space Division of LTV, Inc. He has served on the faculty at the University of Queensland, 1970–75, and the University of Virginia, 1975–1988; as professor and director of the School of Electrical Engineering and Computer Science at the University of Oklahoma, 1988–92; and is professor and dean of engineering at the University of Nevada–Reno.

He is editor of the IEEE Transactions on Education, where he has made major contributions to engineering education through special issues, use of innovative technologies, and a high standard of operation in all aspects of the editing process. He will be general chair of the 2001 Frontiers in Education Conference, being held in Reno.

Ted received the Education Society Achievement Award in 1998 and an IEEE Millennium Medal in 2000. He has made major contributions to optical engineering, optical engineering education, and the administration of major programs in the country.



Irene C. Peden

Department of Electrical
Engineering
University of Washington
Seattle, Washington

Past Recipients

- '79 Lawrence P. Grayson
- '80 Demetrius T. Paris
- '81 Lindon E. Saline
- '82 Anthony B. Giordano
- '83 Joseph Bordogna
- '84 John C. Lindenlaub
- '85 John D. Ryder
- '86 James R. Rowland
- '87 Bruce Eisenstein
- '88 Mac Van Valkenburg
- '89 Edward W. Ernst
- '90 Ernst Weber
- '91 J. David Irwin
- '92 Jerrier A. Haddad
- '93 Chalmers F. Sechrist
- '94 Eric A. Walker
- '95 Stephen W. Director
- '96 William H. Hayt Jr.
- '97 Jerry R. Yeargan
- '98 Ted Batchman
- '99 Lyle D. Feisel

IEEE Education Society Achievement Award

Presented by: Karan L. Watson

“For outstanding contributions to engineering education.”

Irene C. Peden is professor emerita of electrical engineering at the University of Washington–Seattle. She is a graduate of the University of Colorado–Boulder and of Stanford University, where she received MS and PhD degrees in electrical engineering. She holds honorary doctorates from Michigan State and Southern Methodist universities.

From 1991 to 1993 she was director of the Division of Electrical and Communications Systems at the National Science Foundation; her term included nine months as director of the former Engineering Infrastructure Division. During that period she started the grant initiative that has since been institutionalized as the Research and Curriculum Innovation program, offered yearly by the Engineering and Computer/Information Science and Engineering Directorates.

Dr. Peden is a former IEEE vice president for educational activities. She was 1989 president of the IEEE Antennas and Propagation Society, originating and developing the CAEME concept (Computer Applications in ElectroMagnetics Education), initially supported by NSF and IEEE. The program, now a University of Utah center, has expanded to include additional IEEE societies and specialty areas and corporate sponsors. She is a member and former chair of the ABET Engineering Accreditation Commission and the Army Science Board and a member of the Naval Research Advisory Committee. She is a member of the Engineering Advisory Council of the University of Colorado–Boulder and the boards of Visitors of Duke University and the University of California–Davis, the National Advisory Board of GATEWAY Engineering Education Coalition, and the Oversight Council of the International Arctic Research Center of the University of Alaska–Fairbanks.

Education awards and honors include the 1991 ABET Grinter Award, the 1989 Meritorious Achievement Award in Accreditation Activities of the IEEE EAB, IEEE Centennial and Third Millennium Medals, the ASEE Centennial Medal, election to the ASEE Engineering Educators Hall of Fame, and the Dean's Medallion of the Michigan State University College of Engineering. She is a fellow of IEEE, ASEE, ABET, AAAS, and the Society of Women Engineers, and a member of the National Academy of Engineering.



Matthew N.O. Sadiku

Avaya Communication
Holmdel, New Jersey

Past Recipients

- '93 J. David Irwin
- '94 A. Bruce Carlson
- '95 James W. Nilsson
- '96 Simon Haykin
- '97 Donald E. Kirk
Robert D. Strum
- '98 Richard C. Jaeger
- '99 John B. Peatman

IEEE Education Society McGraw-Hill/Jacob Millman Award

Presented by: Karan L. Watson

“For outstanding contributions to electrical engineering education in terms of excellent text-book writing.”

Matthew N.O. Sadiku was born at Shagamu, Nigeria, May 17, 1955. He received a BSc degree in 1978 from Ahmadu Bello University in Zaria, Nigeria, and MSc and PhD degrees from Tennessee Technological University in Cookeville, Tennessee, in 1982 and 1984. From 1984 to 1988 he was assistant professor at Florida Atlantic University, where he did graduate work in computer science. Starting in 1988 he was with Temple University, which he left at the rank of full professor. He is the author of more than 100 professional papers and 15 books, including *Elements of Electromagnetics* (Oxford, third ed., 2000); *Fundamentals of Electric Circuits* (McGraw-Hill, 1999, with C. Alexander); *Numerical Techniques in Electromagnetics* (CRC, second ed., 2000); *Metropolitan Area Networks* (CRC Press, 1995); and *Simulation of Local Area Networks* (CRC Press, 1995, with M. Ilyas). Some of his books have been translated into Korean, Chinese, Italian, and Spanish.

His research interests are in numerical techniques in electromagnetics and computer communication networks. He is a registered professional engineer and a member of American Society of Engineering Educators (ASEE) and the Institute of Electrical and Electronics Engineers (IEEE). He was the IEEE Region 2 Student Activities Committee chairman. He is an associate editor for *IEEE Transactions on Education*.



David J. Russomanno

Department of Electrical
Engineering
Herff College of Engineering
The University of Memphis
Memphis, Tennessee

Ronald D. Bonnell

Department of Electrical and
Computer Engineering
Swearingen Engineering Center
The University of South
Carolina
Columbia, South Carolina

Past Recipients

'99 J.A. Buck
H. Owen
J.P. Uyemura
C.M. Verber
D.J. Blumenthal

IEEE Education Society Transaction Best Paper Award

Presented by: Karan L. Watson

D.J. Russomanno, R.D. Bonnell, "A Pedagogical Approach to Database Design via Karnaugh Maps," IEEE Transactions on Education, Vol. 42, No. 4, pp. 261–270, November 1999.

The study of normalization is a fundamental topic covered in most introductory database courses taught in departments of computer/electrical engineering and computer science. The typical pedagogical approach to normalization presents several classical algorithms, which are based on the application of axioms and lemmas for manipulating functional decomposition and synthesis. This paper presents an augmentation to the traditional pedagogical strategy for introducing students to normalization and relational synthesis concepts. This augmentation transforms semantic concepts into Boolean form that can be manipulated easily with the Karnaugh map. The Karnaugh map provides an especially useful method for illustrating the process of determining the candidate keys of a relation, dependencies that are required for database decomposition and synthesis. Moreover, students find the Karnaugh-map-based techniques faster for most calculations, as well as easier to apply than conventional algorithms, since most engineering students are more familiar with combinatorial Boolean algebra than the algebra of functional relations.



Leah Jamieson

School of Electrical and
Computer Engineering
Purdue University
West Lafayette, Indiana

Past Recipients

- '95 Denice D. Denton
- '96 Karan L. Watson
- '97 Patricia D. Daniels
- '98 Delores M. Etter
- '99 Sherra E. Kerns

IEEE Education Society Hewlett-Packard/Harriett B. Rigas Award

Presented by: Karan L. Watson

“Outstanding woman engineering educator in recognition of her contribution to the profession.”

Leah Jamieson, professor in the School of Electrical and Computer Engineering and co-director of the Engineering Projects in Community Service Center (EPICS) at Purdue University, receives this award in recognition of her leadership in innovative approaches to engineering education. Dr. Jamieson is an IEEE fellow who has received national and university awards for contributions to engineering education and to women in engineering. She has been president of the IEEE Signal Processing Society and is a member of the advisory committee for the NSF Computer and Information Science and Engineering Directorate. Through Dr. Jamieson's innovative activities, students enrolled in engineering strengthen their understanding and skills for helping the community and society, and more precollege students, especially women and minorities, are attracted to engineering.



Wayne Burleson



Aura Ganz



Ian Harris

Department of Electrical and
Computer Engineering
University of Massachusetts at
Amherst
Amherst, Massachusetts

Frontiers in Education Conference Benjamin J. Dasher Best Paper Award

Presented by: Larry Richards

*“Educational Innovations in Multimedia Systems.”
Paper 1191, Session 12a3, 1999 FIE Conference.*

Multimedia systems have emerged as one of the fastest-growing segments of computing systems and thus need to be well-integrated into a computer engineering curriculum. Fortunately, the teaching and learning of multimedia systems can be aided with novel instructional techniques based on multimedia. The DVD project at the University of Massachusetts–Amherst is developing an integrated set of instructional modules on the engineering techniques used in the design and test of hardware, software, and networks for multimedia. This large project includes three facets: 1) multimedia instructional modules, 2) multimedia instructional utilities, and 3) multimedia component design projects. In this paper, we briefly present preliminary results in each of these three areas.

Past Recipients

- | | | |
|-----|----------------------|--------------------------|
| '73 | Walter D. Story | James R. Jones |
| '74 | Richard Hooper | M.G. Rekoﬀ Jr. |
| '75 | John J. Alan III | Dennis G. Smith |
| | J.J. Lagowski | Gregg L. Vaughn |
| '76 | John Hipwell | '88 Richard M. Felder |
| | David Blaume | '89 Richard C. Compton |
| '77 | John W. Renner | '90 Cindy A. Greenwood |
| '78 | Albert J. Morris | '91 Robert Whelchel |
| '79 | Donald R. Woods | '92 William LeBold |
| | Cameron M. Crowe | Dan D. Budny |
| | Terrence W. Hoffman | '93 Daniel M Hull |
| | Joseph D. Wright | Arthur H. Guenther |
| '80 | Marilla D. Svinicki | '94 Burks Oakley II |
| '81 | Martha Montgomery | Roy E. Roper |
| '82 | A.L. Riemenschneider | '95 Curtis A. Carver Jr. |
| | Lyle D. Deisel | Richard A. Howard |
| | James M. Trosino | '96 Val D. Hawks |
| '83 | Davood Tashayyod | '97 Edwin Kashy |
| | Banu Onaral | Michael Thoennesen |
| '84 | Bill V. Koen | Yihjia Tsai |
| '85 | Bill V. Koen | Nancy E. Davis |
| '86 | Richard S. Culver | Sheryl L. Wolfe |
| '87 | David A. Conner | '98 A.B. Carlson |
| | David G. Green | W.C. Jennings |
| | Thomas C. Jannett | P.M. Schoch |



Larry J. Shuman

School of Engineering
University of Pittsburgh
Pittsburgh, Pennsylvania

Past Recipients

- '84 Carol Schmitz
- '85 Lawrence P. Grayson
- '86 John C. Lindenlaub
- '87 George Burnett
- '88 James R. Rowland
- '89 Lyle D. Feisel
- '90 Edwin C. Jones Jr.
- '91 Karl A. Smith
- '92 Victor K. Schutz
- '93 Bruce A. Einstein
- '94 David V. Kerns Jr.
- '95 David R. Voltmer
- '96 William E. Sayle II
- '97 Richard S. Culver
- '98 Dan Budny
- '99 Robert J. Herrick

Frontiers in Education Conference Ronald J. Schmitz Award

Presented by: Richard S. Culver

“For outstanding service to the Frontiers in Education Conference.”

Larry J. Shuman is associate dean for academic affairs in the School of Engineering at the University of Pittsburgh and professor of industrial engineering. His areas of interest are improving the engineering educational experience and the ethical behavior of engineers and engineering managers. With Cynthia Atman, Dr. Shuman was co-chair of the 1997 Frontiers in Education Conference in Pittsburgh. He is a co-author with Rosa L. Pinkus, Norman Humon, and Harvey Wolfe of *Engineering Ethics: Balancing Cost Schedule and Risk—Lessons Learned from the Space Shuttle* (Cambridge University Press, 1997). As associate dean of engineering, Dr. Shuman was responsible for creating a successful cooperative engineering education program and an innovative study-abroad program. He is working with Dan Budny to develop and implement an integrated curriculum at the University of Pittsburgh School of Engineering.

Dr. Shuman is principal investigator of the National Science Foundation-supported study, “Engineering Education: Assessment Methodologies and Curricular Innovations.” The study involves the Colorado School of Mines (Barbara Olds and Ronald Miller), Columbia University (Jack McGourty), the Rose-Hulman Institute of Technology (Gloria Rogers), the University of Washington (Cynthia Atman), and the University of Pittsburgh (Mary Besterfield-Sacre and Harvey Wolfe). He has been principal or co-principal investigator on more than 25 sponsored research projects funded from such government agencies and foundations as the National Science Foundation, the U.S. departments of Health and Human Services and Transportation, the Robert Wood Johnson Foundation, and the Pennsylvania Department of Health. He has published widely in the *Journal of Engineering Education*, *IEEE Transactions on Engineering Education*, *Computers and Industrial Engineering*, and the *Journal of the Society for Health Systems*. Dr. Shuman and his colleagues have been regular contributors to all recent ASEE and FIE national meetings and he is an associate editor of the *Journal of Engineering Education*.

Dr. Shuman holds a PhD in operations research from Johns Hopkins University and a BSEE from the University of Cincinnati. He is a member of the FIE steering committee and the ERM board of directors, and will be the academic dean for the “Semester at Sea” spring 2002, a 100-day around-the-world academic program involving 650 students and 30 faculty.

Notes

Notes

