1999-2000 ANNUAL REPORT

School of Electrical and Computer Engineering
FACULTY CREDO

School of Electrical and Computer Engineering

UNITY OF PURPOSE
Our purpose is to provide students at all degree levels with the highest quality preparation for successful professional careers, and through dedicated scholarship, to advance our profession. We will contribute to the expansion and responsible application of knowledge to the benefit of society. Our relentless pursuit of these goals will fulfill our vision of a Georgia Tech preeminent in information and telecommunications systems, energy and automation systems, and in the underlying enabling technologies.

DIVERSITY OF FUNCTION
We recognize and embrace the technical diversity of our profession. We seek to enhance this diversity by active engagement with relevant associated Georgia Tech and external professional activities. We will encourage cultural diversity within the ranks of the profession by being a leader in the education of minority and women electrical engineers and computer engineers, students attracted and taught by a faculty equally rich in role models.

PROFESSIONALISM OF METHOD
We participate in the most noble aspect of a noble profession. We will honor that profession by example, instilling in our students by our own conduct, the highest standards of professional behavior.
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The School of Electrical and Computer Engineering (ECE) remains among the largest producers of electrical engineering and computer engineering graduates in the United States and continues to develop a program of exploratory research in new and existing technologies. Our commitment to supporting our outstanding faculty, creating innovative research programs, and providing first-rate educational programs to our students is reflected in the following highlights for 1999-2000.

**Major Faculty, Student, and Alumni Honors**

**FACULTY**

**Phillip E. Allen** received the IEEE Circuits and Systems Society Golden Jubilee Medal.

Fifteen ECE faculty members were named IEEE Millennium Medal recipients by their respective IEEE societies, sections, regions, and major boards to honor their outstanding contributions. Presentations of these medals are to take place at designated meetings or special presentation venues. ECE recipients and the awarding organizations were: **James D. Meindl** (IEEE Solid-State Circuits Society); **Ronald W. Schafer, James H. McClellan, Russell M. Mersereau, Thomas P. Barnwell,** and **Nikil Jayant** (IEEE Signal Processing Society); **Hans B. Püttgen** (IEEE Power Engineering Society); **William E. Sayle** (IEEE Education Society); **John O. Limb** (IEEE Communications Society); **George P. Rodrigue** (Regents’ Professor Emeritus, IEEE Publications Activities Board); **Rao R. Tummala** (IEEE Components, Packaging, and Manufacturing Technology Society); and **Nan Marie Jokerst, John A. Buck, Andrew F. Peterson, and Roger P. Webb** (IEEE Atlanta Section).

**Mark A. Clements** was named director of the Interactive Media Technology Center.

**James D. Foley** was named executive director of Yamacraw and holds a joint professorship with ECE and the College of Computing.

**Vincent J. Mooney, III** received a National Science Foundation (NSF) CAREER Award “for hardware/software co-design of a modular, synthesizable real-time operating system for system-on-a-chip designs.”

**John B. Peatman** received the IEEE Education Society McGraw-Hill/Jacob Millman Award “for the development of pioneering, design-oriented textbooks for digital systems.”

**Andrew F. Peterson** was named an IEEE Fellow “for contributions to computational electromagnetics and electrical engineering education.”

**Hans B. Püttgen** received the Georgia Tech Outstanding Achievement in Research Program Development Award. Dr. Püttgen received the award for founding and developing Georgia Tech Lorraine in Metz, France; establishing Georgia Tech’s National Electric Energy Testing, Research, and Applications Center; and leading ECE’s Capital Campaign.

**W. Whitfield Smith** received the Richard M. Bass-Beta Kappa Nu Outstanding Teacher Award, which was decided by a majority vote of the ECE senior class.

**Allen Tannenbaum** was named the Julian Hightower Chair Professor.

**Emmanouil M. Tentzeris** received a NSF CAREER Award “for novel multiresolution time-domain schemes for the adaptive analysis and design of high-frequency circuits and packaging structures.”

**Roger P. Webb** served as president of the National Electrical Engineering Department Heads Association (NEEDHA) during 1999-2000 and will serve on NEEDHA’s board of directors in 2000-01.

**Guotong Zhou** was presented an Excellence in Teaching Award, which was decided by a vote among women engineering students. Meritor Automotive, Inc. and Georgia Tech’s Women in Engineering Program sponsored the award.

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**FACTS**

**Number of Faculty/Staff**

- Number of faculty (tenure-track) 94
- Joint appointments 3
- Adjunct and part-time faculty 39
- Professors Emeriti 14
- Research and administrative staff 156

**Number of Undergraduate Students**

(= 1,788)

**Number of Graduate Students**

(Fall Semester 1999)

- Doctoral 435
- Special 3
- Master of Science/M.S.E.C.E. 341
- Total 779

**Number of Degrees Awarded**

- B.Cmp.E. 16
- B.S.Cmp.E. 82
- B.E.E. 42
- B.S.E.E. 181
- M.S. 41
- M.S.E.C.E. 181
- Ph.D. 49
- Total 592

**Grants and Contracts**

- Total funds received on external grants in FY 00 $26,438,072
- Number of proposals submitted to external agencies during FY 00 193

**Expenditure Summary**

- State support $24,885,226
- Sponsored instruction support** 12,655,620
- Sponsored research support** 40,790,431
- Total expenditures $40,790,431

*Graduate program offers combined electrical and computer engineering degrees

**Direct expenditures**
STUDENTS

**Gregory A. Martin** received the Tau Beta Pi Outstanding Engineering Student Award.

**Joe Haralson, II** received a Sigma Xi Outstanding Doctoral Thesis Award for his dissertation entitled “Design, Analysis, and Macroscopic Modeling of High Speed Photodetectors Emphasizing the Joint Opening Effect Avalanche Photodiode and the Lateral p-i-n Photodiode.” His thesis advisor was **Kevin F. Brennan**.

**Girish Patel** received a Sigma Xi Outstanding Doctoral Thesis Award for his dissertation entitled “A Neuromorphic Architecture for Modeling Intersegmental Coordination.” His thesis advisor was **Stephen P. DeWeerth**.

ALUMNI

**H. Allen Ecker** (BEE ’57, MSEE ’59) was inducted into the Georgia Technology Hall of Fame in October 1999. This honor recognizes the achievements of outstanding members of Georgia’s technology business community. Dr. Ecker is a senior vice president and chief technical officer of Scientific-Atlanta, Inc. and a member of the ECE Advisory Board.

**Shirley C. Mewborn** (BEE ’56) received the Georgia Institute of Technology Dean’s Appreciation Award “for extraordinary contributions to the advancement of the College of Engineering.” Ms. Mewborn is a vice president of Southern Engineering and a member of the ECE Advisory Board.

**Gabriel Rincon-Mora** (MSEE ’94, PhD ’96) received the National Hispanic in Technology Award at the Society of Hispanic Professional Engineers National Technical and Career Conference on January 28, 2000. A senior design engineer at Texas Instruments in Dallas, TX since 1997, Dr. Rincon-Mora also serves as an ECE adjunct professor.

**Michael Wach** (BEE ’83, MSEE ’86) received the Georgia Institute of Technology Wallace H. Coulter Award for Innovation and Entrepreneurship “for the potential to achieve the highest of engineering innovation, resulting in technological advances with practical application to the quality of human life and health.” He is the president of Visionex, Inc.

Research and Educational Milestones

1999-2000 GRANTS AND CONTRACTS ECE faculty members amassed a record-breaking $26,438,072 in research grants and contracts during the last fiscal year. This total represents 35 percent of the research funding in the College of Engineering and 11 percent of the entire Institute’s.

**U.S. NEWS AND WORLD REPORT RANKINGS** For the second year in a row, the School’s graduate electrical engineering program was ranked seventh in the nation. The College of Engineering graduate program was tied for fourth with the University of Michigan at Ann Arbor and placed second among the rankings of public colleges.

**INTELLECTUAL PRODUCTS** Faculty members, in conjunction with their graduate students and peers, produced 207 journal publications, 447 conference presentations, 133 miscellaneous presentations, 29 books and parts of books, and 12 patents.

**GEORGIA TECH REGIONAL ENGINEERING PROGRAM** Enrollment in the Georgia Tech Regional Engineering Program (GTREP) reached nearly 130 students, doubling its originally projected figures. GTREP began in fall 1999 as a way to help meet the demand for engineers in Southeast Georgia and to spur economic development in that region of the state. The program offers undergraduate degrees in computer engineering and civil engineering in collaboration with Armstrong Atlantic State University, Georgia Southern University, and Savannah State University. GTREP students matriculate in either Statesboro or Savannah for the duration of their degree program, physically remaining in Southeast Georgia while academically becoming Georgia Tech students in their junior year.
SEMESTER CONVERSION Georgia Tech converted to semesters in August 1999. Under the semester curriculum, both the bachelor of science in electrical engineering and the bachelor of science in computer engineering programs require 132 hours of coursework, the M.S.E.C.E. degrees 30 semester hours, and the Ph.D. degree 43 hours. The conversion required extensive student advising, and assessment efforts continued throughout the academic year, especially in preparing and reviewing objectives and outcomes for the required core courses.

HP EDUCATIONAL TECHNOLOGY INITIATIVE The Hewlett-Packard (HP) Company provided ECE with a $1.7 million recipient-enhanced grant of equipment for high-tech classrooms. This grant is the second of two HP grants totaling $3 million that will place computers in more of ECE’s classrooms and will support curriculum development and enhanced delivery of engineering courses.

EXPLICITLY PARALLEL INSTRUCTION-SET COMPUTING HP has provided Georgia Tech and three other universities with grants totaling more than $2 million in cash and equipment to fund the teaching of Explicitly Parallel Instruction-set Computing (EPIC). EPIC is the foundation for IA-64 (Intel Architecture-64 bit), a next-generation computer architecture developed jointly by HP and Intel. The HP EPIC Architectures Initiative in Computer Science, a program sponsored by HP’s University Grants Program, will fund curricula for training a new generation of computer engineers and software designers in EPIC-related concepts and will encourage the development of advanced technologies. Krishna V. Palem, ECE professor and director of the new Center for Research in Embedded Systems and Technology, leads the Georgia Tech portion of this program, which focuses on developing classroom technology and modules, laboratory modules and manuals, and teacher-training materials. Other participating universities are the University of Illinois at Urbana-Champaign, North Carolina State University, and the California State University, Los Angeles.

YAMACRAW ACTIVITIES Yamacraw, formerly known as the Yamacraw Mission, is a strategic economic development initiative that combines the efforts of academia, industry, and state government to develop high-bandwidth communications education, research, and businesses in Georgia. Eight state universities are involved in this effort, including Georgia Tech, the University of Georgia, Georgia State University, Georgia Southern University, Southern Polytechnic State University, Kennesaw State University, Savannah State University, and Armstrong Atlantic State University. During FY 2000, the participating universities hired 22 Yamacraw faculty members; ten of these faculty members are based in ECE. It is anticipated that six new Yamacraw faculty members will join ECE in 2000-01.

The research agenda of Yamacraw extends from basic system-on-a-chip electronics through the design of wireless and broadband communications systems. Three major research areas are under way, led by three ECE professors: Vijay K. Madisetti (embedded software), Joy Laskar (broadband access hardware), and Nikil Jayant (system prototyping).

In its first year, the Yamacraw Design Center reached 70 percent of its five-year goal in recruitment of member companies. The seven participating companies include StarCore, Broadcom, Wi-LAN, National Semiconductor, CIENA, Echostar Data Systems, and Nortel Networks. Yamacraw’s Seed Capital Fund funded its first start-up company, RF Solutions, which was founded by Dr. Laskar and Carl Rust, associate director of Georgia Tech’s Packaging Research Center.

YAMACRAW DIRECTOR James D. Foley was named executive director of Yamacraw in November 1999. In addition, Dr. Foley also serves as a professor of computer science and electrical and computer engineering at Georgia Tech. He was previously chairman and CEO of ITA-Mitsubishi Electric Information Technology Center America in Cambridge, MA, where he was responsible for North American corporate research and development. From 1991-95, Dr. Foley was on the faculty of the College of Computing at Georgia Tech, where he also served as director of the Graphics, Visualization, and Usability Center.

GEORGIA TECH BROADBAND INSTITUTE The Georgia Tech Broadband Institute (GTBI) consists of nearly 40 faculty and staff members in ECE, the College of Computing, the Georgia Tech Research Institute, the Georgia Tech Information Security Center, the School of Textile and
Since May 1996, Georgia Tech has been engaged in a Capital Campaign entitled “Threshold of a New Era.” The Institute’s goal was originally set for $400 million, with ECE committed to raise $50 million. Georgia Tech’s goal was then raised twice, now standing at $600 million. Due to the dedicated efforts of the staff of ECE’s Office of External Affairs–Suzy Briggs, Harry L. Vann, and Hans B. Püttgen–the School surpassed its goal and then soared past an internal goal of $55 million. As of June 30, 2000, ECE raised $57.4 million that will endow chaired professorships; junior faculty positions; graduate fellowships; undergraduate scholarships; and upgrades to classrooms, laboratories, and equipment.

ECE’s Office of External Affairs teamed up with the School’s Student-Faculty Committee to coordinate ECE Career Day, which was held in March 2000. The event targets companies that need only electrical and computer engineers for full-time employment, summer internships, and co-op positions. Over 400 students attended the event, visiting with representatives from 18 companies.

The Aware Home project called “Aging in Place” is aimed at finding applications that will allow senior adults to live independently in their homes as long as possible. One major project already under way at the Residential Laboratory is a College of Computing–interdisciplinary project called the An Aware Home project. The Aware Home project will be used for the first five years to initiate and support two junior faculty positions and to provide support for eight graduate students who are studying analog electronics. After the first five years, the ON Semiconductor Chair will be formally established. J. Stevenson Kenney, an associate professor, was appointed to one of the junior faculty positions in November 1999, and the second junior position will be filled in 2001.

The Georgia Tech Analog Consortium (GTAC) enjoyed yet another productive year. In addition to the ON Semiconductor gift, three more companies–Agilent Technologies (Santa Rosa, CA), Motorola (Plantation, FL), and RF Micro Devices (Greensboro, NC)–joined GTAC, thus bringing the total number of industrial members to eight. The spring 2000 review saw the Consortium’s highest attendance ever, with 23 industry representatives coming to the event. GTAC consists of 13 faculty and staff members and approximately 50 graduate students.
PACKAGING RESEARCH CENTER The Packaging Research Center (PRC) received an A+ evaluation from a panel of academic and industrial experts formed by the NSF in October 1999. Established in 1994, the PRC encompasses 11 different research areas and brings together researchers from industry, government agencies, and universities, who are creating the next-generation of electronic packaging technologies and educating students in engineering, management, and cultural diversity. Forty academic and research faculty members participate in the Center; 25 who are affiliated with ECE.

NEETRAC The National Electric Energy Testing, Research, and Applications Center (NEETRAC) is a non-profit, member-supported research and testing center at Georgia Tech. During FY 2000, NEETRAC’s industrial membership consisted of 13 companies. Eight faculty members participated in the Center—four from ECE, one from mechanical engineering, one from materials science and engineering, and one from industrial and systems engineering; 17 students also participated in its activities.

CENTER FOR BOARD ASSEMBLY RESEARCH The Center for Board Assembly Research (CBAR) conducts problem-based research for the surface mount technology industry in the areas of process technology, factory information systems, and production and manufacturing systems. During FY 2000, CBAR underwent an expansion of its laboratory capabilities valued at over $1.5 million, which included the addition of five new machines. Two new industry sponsors—Asymtek, a Nordson company, and Philips Electronic Manufacturing Technology—joined forces with CBAR, bringing the program to over 30. The Center is comprised of a multidisciplinary team of individuals, including faculty from electrical and computer engineering, industrial and systems engineering, materials science and engineering, and mechanical engineering.

TANNENBAUM HIGHTOWER CHAIR Allen Tannenbaum was named the Julian Hightower Professor, effective August 1999. Previously an electrical engineering professor at the University of Minnesota at Minneapolis, Dr. Tannenbaum is involved in systems and controls, computer engineering, and bioengineering.

FUTURE TRUCK COMPETITION Fifteen teams across the U.S. competed in the first of the two-year Future Truck competition, which was held in June 2000 in Mesa, AZ. The Georgia Tech team, dubbed “FutureWreck,” consisted of 55 undergraduate students from mechanical, industrial, electrical, computer, and civil engineering, and was advised by Jerome Meisel, an ECE visiting professor. The team received first place awards in “best acceleration” and “best trailer towing performance.” With material, technical, and financial support from General Motors and the U.S. Department of Energy, the team had to transform a Chevy Suburban sports utility vehicle (SUV) into a hybrid electric vehicle. Among the team’s challenges were to maintain the ability of a SUV to carry cargo and pull heavy loads, such as trailers, while reducing fuel consumption and greenhouse gas emissions.

FACULTY PROMOTIONS

Effective July 1, 1999

PROFESSOR
Mark G. Allen
Nan Marie Jokerst
Vijay K. Madisetti
Andrew F. Peterson

PROFESSOR WITH TENURE
April S. Brown

TENURE
John A. Copeland
David C. Keezer

ASSOCIATE PROFESSOR WITH TENURE
Abhijit Chatterjee
Steven W. McLaughlin

Effective July 1, 2000

PROFESSOR
Elias N. Glytsis
Thomas G. Habetler
Gary S. May
Waymond R. Scott, Jr.

ASSOCIATE PROFESSOR WITH TENURE
G. Tong Zhou
Eleven new faculty members joined ECE during 1999-2000, the second largest group of faculty hired in a single fiscal year in the School’s history, and one faculty member retired. The total number of faculty employed during FY 2000 was 94.

Nine new faculty members joined ECE during fall semester 1999, including Yucel Altunbasak, assistant professor of digital signal processing (DSP) and telecommunications; David V. Anderson, assistant professor of DSP and computer engineering; Farrokh Ayazi, assistant professor of microelectronics and electronic design and applications; Douglas M. Blough, professor of computer engineering; Jeffrey A. Davis, assistant professor of computer engineering and microelectronics; A. Bruno Frazier, assistant professor of bioengineering and microelectronics; J. Stevenson Kenney, associate professor of electronic design and applications and telecommunications; Allen Tannenbaum, Julian Hightower Chair Professor in bioengineering, computer engineering, and systems and controls; and Anthony J. Yezzi, Jr., assistant professor of systems and controls and bioengineering.

In 2000, two new faculty members joined ECE, while one retired after a 14-year career. Krishna Palem joined the ECE faculty as a professor of computer engineering and Ali Adibi as an assistant professor in optics and photonics. Carl Verber retired as the Byers Eminent Scholar Professor in the area of optics and photonics.

Seventy-eight percent of the ECE faculty is tenured, with all members holding doctorates. The following list includes all academic faculty employed during FY 2000.

### FACULTY PROFILE

#### Rank
- Regents’ Professors: 5
- Professors: 42
- Associate Professors: 32
- Assistant Professors: 15
- **Total**: 94

#### Tenured
- Regents’ Professors: 5
- Professors: 39
- Associate Professors: 29

#### Female and Minority Representation
- Female: 6
- African-American: 2
- Multi-racial: 1
- Asian: 13

### Academic Faculty

#### REGENTS’ PROFESSORS

**Thomas K. Gaylord**, Julius Brown Chair Professor, Ph.D., Rice University
Research interests: Diffractive optics; optical interconnects; fiber optic devices; optics instrumentation; semiconductor quantum devices; nanstructure optoelectronics

**Russell M. Mersereau**, Sc.D., Massachusetts Institute of Technology
Research interests: Enhancement, modeling, and coding of computerized images and video; digital signal processing (DSP) for communications; acoustic arrays for echo removal and object tracking; pattern recognition

**Ajeet Rohatgi**, Georgia Power Distinguished Professor, Director of the University Center of Excellence for Photovoltaics Research and Education, Ph.D., Lehigh University
Research interests: Solar cells; low-temperature and high-performance dielectrics; semiconductor defects and carrier lifetimes; rapid thermal processing of silicon devices; compound semiconductors

**Ronald W. Schafer**, Institute Professor, Ph.D., Massachusetts Institute of Technology
Research interests: Nonlinear signal processing systems; speech processing and multimedia systems; DSP in medicine and biology; DSP for communications

**Glenn S. Smith**, John Pippin Chair in Electromagnetics, Ph.D., Harvard University
Research interests: Basic electromagnetic theory and measurements; antennas and wave propagation in materials; radiation and reception of pulses by antennas

#### PROFESSORS

**Ian F. Akyildiz**, Ph.D., University of Erlangen
Research interests: Wireless networks; satellite networks; ATM (Asynchronous Transfer Mode) networks; next generation Internet

**Mark G. Allen**, Ph.D., Massachusetts Institute of Technology
Research interests: Micromachining; microsensor and microactuator fabrication compatible with integrated circuit (IC) fabrication; microelectromechanical systems (MEMS)

**Phillip E. Allen**, Schlumberger Chair Professor in Microelectronics, Ph.D., University of Kansas
Research interests: Analog IC design; analog filters; analog modeling and computer-aided design (CAD); analog circuits and systems for telecommunication applications

**Thomas P. Barnwell, III**, Ph.D., Massachusetts Institute of Technology
Research interests: Computer-enhanced education; speech analysis, synthesis, and coding; multiprocessor architectures for DSP; DSP algorithms; objective speech quality measures

**Douglas M. Blough**, Ph.D., The Johns Hopkins University
Research interests: Multicomputer architecture; fault-tolerant computer systems; operating systems and middleware

**Kevin F. Brennan**, Ph.D., University of Illinois at Urbana-Champaign
Research interests: High field carrier transport in semiconductors; optoelectronic device physics; wide band gap semiconductors; electronic device modeling and theory

**April S. Brown**, Associate Dean of the College of Engineering, Ph.D., Cornell University
Research interests: Compound semiconductor heterojunction bipolar transistors and high electron mobility transistors; nanoscale synthesis and devices; molecular beam epitaxy; heterojunction device design and process

**Mark A. Clements**, Director of the Interactive Media Technology Center; Sc.D., Massachusetts Institute of Technology
Research interests: DSP and analysis; speech recognition; analysis and compensation of stress in speech; sensory aids for the hearing impaired; pattern recognition

**J. Alvin Connelly**, Vice Chair for ECE Operations and Faculty Development, Ph.D., University of Tennessee
Research interests: CMOS (complementary metal-oxide-semiconductor) and bipolar IC design; macromodeling of analog/digital systems; low noise circuit and system design; phase locked loops
John A. Copeland, John H. Weitnauer, Jr. Technology Transfer Chair, GRA Eminent Scholar, Director of the Communications Systems Center, Ph.D., Georgia Institute of Technology
Research interests: Computer communication networks; digital cable television networks; computer architecture and operating systems

John F. Dorsey, Ph.D., Michigan State University
Research interests: Modeling and control of large-scale systems; power system models; on-line power system security assessment; eliminating sustained oscillations in power systems; stability of nonutility generation

Robert K. Feeney, Ph.D., Georgia Institute of Technology
Research interests: CAD and fabrication of printed-circuit-phased-array antennas; integration of advanced monolithic microwave integrated circuits with microwave antennas; CAD for RF and microwave circuit analysis and design

Ronald G. Harley, Duke Power Company Distinguished Professor, Ph.D., London University
Research interests: Power system stability and control, including flexible AC systems devices; power electronics, motor drives, and electric vehicles; neural networks applied to power electronics and electrical machines

Monson H. Hayes, III, Sc.D., Massachusetts Institute of Technology
Research interests: Stereo image processing; face and gesture recognition; multimedia signal processing; adaptive signal processing; Internet education

David R. Hertling, Vice Chair for ECE Graduate Affairs, Ph.D., University of Illinois at Urbana-Champaign
Research: Modeling of linear and non-linear active devices; CAD and analysis of electronic circuits; computer-CAD of planar dipole phased antenna arrays

William D. Hunt, Ph.D., University of Illinois at Urbana-Champaign
Research interests: Thin film piezoelectric materials; surface acoustic wave and bulk acoustic wave devices; microelectronic acoustics in chemical sensing and biology; device physics and fabrication of microelectronic acoustic devices

Nikil S. Jayant, John Pippin Chair in Wireless Systems, GRA Eminent Scholar; Director of the Georgia Tech Broadband Institute, Ph.D., Indian Institute of Science, Bangalore
Research interests: Signal compression; multimedia communications; wireless systems; broadband access

Nan Marie Jokerst, Ph.D., University of Southern California
Research interests: Integrated optoelectronic links; integrated microsystems and nanosystems; optical network interfaces and imaging systems; alignment tolerant high performance optoelectronic interfaces

Edward W. Kamen, Julian T. Hightower Chair Professor in Manufacturing Engineering, Associate Director of the Manufacturing Research Center, Ph.D., Stanford University
Research interests: Mathematical system theory; control theory; estimation theory; signal processing

W. Marshall Leach, Jr., Ph.D., Georgia Institute of Technology
Research interests: Electroacoustic modeling of transducers; audio signal processing; analog circuit design; low-noise electronics; electromagnetics

James H. McClellan, Ph.D., Rice University
Research interests: Computer technology applied to education; sensor array signal processing; radar signal processing; software for DSP

Vijay K. Madisetti, Ph.D., University of California at Berkeley
Research interests: Embedded software systems; digital system design; VLSI (Very Large Scale Integration) systems; system-on-package and system-on-chip technologies; DSP hardware and software

James D. Meindl, Joseph M. Pettit Chair in Microelectronics, Director of the Microelectronics Research Center, Ph.D., Carnegie-Mellon University
Research interests: Microelectronics; gigascale integration (GSI)

A.P. Sakis Meliopoulos, Ph.D., Georgia Institute of Technology
Research interests: Power system reliability and risk assessment; power systems operations; electromagnetics and power systems; power quality; protective relaying and disturbance analysis
Krishna V. Palem, Director, Center for Research in Embedded Systems and Technology, Ph.D., University of Texas at Austin
Research interests: Adaptive hardware, compiler optimizations for instruction level parallel processors; embedded and fault-tolerant systems; parallel computing; real-time systems, string, and pattern matching

John B. Peatman, Ph.D., Case Western Reserve University
Research interests: Development of low-cost tools for designing microcontroller applications; low-cost, dedicated logic analyzer design using FPGA technology; embedded microcontroller applications

Andrew F. Peterson, Ph.D., University of Illinois at Urbana-Champaign
Research interests: Computational electromagnetics; radar signature prediction; signal integrity in electronic packaging applications; antennas and microwave devices

Hans B. Püttgen, Vice Chair for ECE External Affairs, President of Georgia Tech Lorraine, Director of the National Electric Energy Testing, Research, and Applications Center, Ph.D., University of Florida
Research interests: Power systems analysis and planning; utility deregulation; electric transportation vehicles and systems

William T. Rhodes, Ph.D., Stanford University
Research interests: Image formation; partially coherent optical systems; Fourier optics; information processing and telecommunications; secure communication technology

William E. Sayle, Vice Chair for ECE Undergraduate Affairs, Ph.D., University of Washington
Research interests: Power electronics devices and circuits; analog electronics

Jay H. Schlag, Ph.D., Georgia Institute of Technology
Research interests: Computer applications; CAD; neural networks

Mark J.T. Smith, Executive Assistant to Georgia Tech President G. Wayne Clough, Ph.D., Georgia Institute of Technology
Research interests: Image and video processing; telemedicine; object detection and reception; data compression for transmission and storage

Paul G. Steffes, Ph.D., Stanford University
Research interests: Remote sensing of planetary atmospheres and surfaces; microwave and millimeter-wave properties of terrestrial and planetary atmospheres; satellite communications and navigation systems; radio astronomy

Gordon L. Stüber, Ph.D., University of Waterloo
Research interests: Wireless physical communications; cellular mobile radio systems; broadband wireless access systems

Allen Tannenbaum, Julian Hightower Professor; Ph.D., Harvard University
Research interests: Computer vision; image processing; computer graphics; control theory; cryptography; biomedical imaging

Rao R. Tummala, Director of the Packaging Research Center, Joseph M. Pettit Chair in Electronics Packaging, GRA Eminent Scholar, Ph.D., University of Illinois at Urbana-Champaign
Research interests: Microelectronics systems packaging; electronic materials; display technologies; magnetic storage

John P. Uyemura, Ph.D., University of California at Berkeley
Research interests: CMOS digital IC techniques; VLSI system design; optical telecommunication networks; mixed-signal gallium arsenide chip design

George J. Vachtsevanos, Ph.D., The City University of New York
Research interests: Hierarchical/intelligent control of large-scale industrial processes; unmanned aerial vehicles; vision and infrared-based inspection technologies; use of EEG signals for detecting and predicting epileptic seizures

Carl M. Verber, Ph.D., University of Colorado
Research interests: Integrated optics; optical communication; optical nonlinear effects

Erik I. Verriest, Ph.D., Stanford University
Research interests: Mathematical system theory; algorithms for optical signal processing; effects of finite precision on control; model reduction; stochastic realization theory; data compression
Roger P. Webb, ECE Chair and Georgia Power Distinguished Professor, Ph.D., Georgia Institute of Technology
Research interests: Electric power systems; instrumentation; control systems

Sudhakar Yalamanchili, Ph.D., University of Texas at Austin
Research interests: Cluster interconnection networks; embedded communication networks; reconfigurable logic in high performance communication

ASSOCIATE PROFESSORS

John R. Barry, Ph.D., University of California at Berkeley
Research interests: Communication theory; coding, equalization, and synchronization; wireless communications; signal processing for multuser systems

Miroslav M. Begovic, Ph.D., Virginia Polytechnic Institute and State University
Research interests: Wide area disturbances in transmission networks; distributed energy resources in power systems; sustainable energy systems; distribution network analysis; applications of DSP to power system protection

Paul J. Benkeser, Ph.D., University of Illinois at Urbana-Champaign
Research interests: Biomedical signal and image processing; ultrasonic bioengineering; biomedical sensors and transducers

Martin A. Brooke, Ph.D., University of Southern California
Research interests: High-speed, high performance signal processing

John A. Buck, Ph.D., University of California at Berkeley
Research interests: Nonlinear pulse propagation in optical fibers and fiber amplifiers

W. Russell Callen, Jr., Ph.D., Stanford University
Research interests: Engineering educational methods; integration of engineering and the humanities; professional engineering education

Abhijit Chatterjee, Ph.D., University of Illinois at Urbana-Champaign
Research interests: VLSI and mixed-signal testing; fault tolerant computing; low power circuit design; computer algorithms; digital automation

Stephen P. DeWeerth, Ph.D., California Institute of Technology
Research interests: Neuromorphic engineering; hybrid neuronal-MEMS systems; biologically-inspired sensorimotor systems and motor learning; analog VLSI circuits and systems; remote interfacing to embedded systems

Timothy J. Drabik, Ph.D., Georgia Institute of Technology
Research interests: Optically interconnected digital systems; optoelectronic integration; neural analog VLSI systems

K.-H. Michael Fan, Ph.D., University of Maryland
Research interests: Robust control and optimization; optimization-based engineering system design

Bonnie S. Heck, Ph.D., Georgia Institute of Technology
Research interests: Control theory; power electronics; software architecture for control systems

Elias N. Glytsis, Ph.D., Georgia Institute of Technology
Research interests: Diffractive optics; optical interconnections; integrated and fiber optic devices; numerical techniques in electromagnetic problems

Thomas G. Habetler, Ph.D., University of Wisconsin at Madison
Research interests: Current-based condition monitoring of electric machines; control of electric machine drives; power electronics; design and protection of electric machines

James O. Hamblen, Ph.D., Georgia Institute of Technology
Research interests: Rapid prototyping; embedded systems; computer architecture; CAD

Joseph L.A. Hughes, Vice Chair for Computer Engineering and ECE Program Development, Ph.D., Stanford University
Research interests: IC testing; VLSI system design; optical communication networks
Mary Ann Ingram, Ph.D., Georgia Institute of Technology
Research interests: Wireless communication systems; RF propagation measurements and modeling; array signal processing; antenna pattern synthesis

David C. Keezer, Ph.D., Carnegie-Mellon University
Research interests: Test methods for high performance electronic systems; high-speed logic systems; advanced electronics packaging methods; computer applications for music

J. Stevenson Kenney, ON Semiconductor Junior Professor, Ph.D., Georgia Institute of Technology
Research interests: RF and microwave power amplifier design; behavioral simulation of RF and microwave components; advanced RFIC design; microwave transmission and propagation

Arthur Koblasz, Ph.D., California Institute of Technology
Research interests: Rehabilitation engineering; medical diagnostic protocols

Joy Laskar, Ph.D., University of Illinois at Urbana-Champaign
Research interests: RF and microwave ICs; integration and packaging techniques for RF/microwave applications; next generation IC applications

Gary S. May, Ph.D., University of California at Berkeley
Research interests: Computer-aided manufacturing of ICs and devices; semiconductor fabrication processes; IC design for manufacturability; IC yield modeling; computer-enhanced education

Steven W. McLaughlin, Ph.D., University of Michigan at Ann Arbor
Research interests: Communications and information theory; error control coding; coding and signal processing for magnetic and optical recording; source coding and data compression

Mohamed F. Moad, Ph.D., Georgia Institute of Technology
Research interests: Circuits; systems analysis

Henry L. Owen, Ph.D., Georgia Institute of Technology
Research interests: Internetworking; computer networks; quality of service in the Internet; network protocol implementations in operating systems

Stephen E. Ralph, Ph.D., Cornell University
Research interests: Ultrafast optical devices for high speed optical communications; ultrafast processes in photonic devices; all-optical switching; optical telecommunication networks; optical materials and phenomena

David E. Schimmel, Ph.D., Cornell University
Research interests: Parallel computer architecture and reconfigurable computing; VLSI system design; system area computer network design; asynchronous and self-timed system design

Waymond R. Scott, Jr., Ph.D., Georgia Institute of Technology
Research interests: Detection techniques using electromagnetic and acoustic waves; measurement of electromagnetic properties of materials; transient electromagnetic fields; numerical methods in electromagnetics

Madhavan Swaminathan, Ph.D., Syracuse University
Research interests: Numerical methods in electromagnetics; interconnect design and analysis; power distribution for GHz systems; time domain characterization methods; IC package co-design

David G. Taylor, Ph.D., University of Illinois at Urbana-Champaign
Research interests: Nonlinear and adaptive control systems theory; adaptive identification and control for electromechanical systems and devices; differential geometric approach to controller synthesis for nonlinear systems

Yorai Y. Wardi, Ph.D., University of California at Berkeley
Research interests: Analysis and optimization of discrete event dynamical systems; gradient estimation via simulation; modeling for rapid simulation of high-speed networks; optimal control of manufacturing systems

Douglas B. Williams, Ph.D., Rice University
Research interests: Statistical signal processing; signal processing techniques for communications; adaptive radar signal processing; applications of chaos and nonlinear dynamics to communications

D. Scott Wills, Sc.D., Massachusetts Institute of Technology
Research interests: Portable multimedia supercomputers; short wire VLSI architectures; GSI system modeling; parallel computing-embedded SMD architectures; high efficiency computation; multicomputer interconnection networks
ASSISTANT PROFESSORS

Ali Adibi, Ph.D., California Institute of Technology
Research interests: Electromagnetics; semiconductor quantum well lasers and detectors; optical information processing; holographic memories

Yucel Altunbasak, Ph.D., University of Rochester
Research interests: Multimedia processing and communications; scalable video coding; audio-visual information management; 3-D graphics streaming; inverse problems in signal processing

David V. Anderson, Ph.D., Georgia Institute of Technology
Research interests: DSP for speech and audio enhancement; signal processing for the hearing impaired; ultra-low power signal processing systems; Internet-based engineering education

Farrokh Ayazi, Ph.D., University of Michigan at Ann Arbor
Research interests: Integrated MEMS; VLSI analog/mixed-mode circuits for sensor readout and control; integration of high aspect-ratio silicon technologies with CMOS circuits; high-precision inertial sensing microsystems

Robert J. Butera, Jr., Ph.D., Rice University
Research interests: Neural control of breathing; pattern-generating neural circuits; real-time computing applied to electrophysiology; nonlinear dynamics in electronic circuits; nonlinear dynamics in biological circuits

Jeffrey A. Davis, Ph.D., Georgia Institute of Technology
Research interests: System-level interconnect prediction; interconnect limits for GSI; compact distributed RLC interconnect device modeling; interconnect-centric design methodologies; on-chip high speed networks

David R. DeBoer, Ph.D., Georgia Institute of Technology
Research interests: Atmospheric microwave remote sensing; radio astronomy; antenna characterization; wave propagation-planetary science

A. Bruno Frazier, Ph.D., Georgia Institute of Technology
Research interests: MEMS; biomedical micro systems; integrated biodetection systems; micro systems fabrication technologies

Paul E. Hasler, Ph.D., California Institute of Technology
Research interests: Mixed-signal ICs; floating-gate metal-oxide-semiconductor transistors for “smart” interfaces with MEMS sensors; low power electronics; analog VLSI models of on-chip learning and sensory processing

Vincent J. Mooney, III, Ph.D., Stanford University
Research interests: System level design; hardware-software co-design; synthesis of reconfigurable architectures; logic synthesis; application-specific system design

Emmanouil M. Tentzeris, Ph.D., University of Michigan at Ann Arbor
Research interests: Real-time multiresolution algorithms for wireless communications; RF packaging; RF MEMs; antenna integration techniques; adaptive transient analysis of active circuits

Chai-Keong Toh, D. Phil., University of Cambridge
Research interests: Wireless broadband networks; ad hoc wireless networking; next generation satellite networking; next generation Internet protocols; mobile and pervasive computing

Linda M. Wills, Ph.D., Massachusetts Institute of Technology
Research interests: Reverse engineering; retargeting concurrent software to multiple parallel architectures; dynamically reconfigurable, self-adaptive software; real-time embedded systems; interactive architectural simulators

Anthony J. Yezzi, Jr., Ph.D., University of Minnesota
Research interests: Image processing; computer vision; estimation and control; computation and algorithms; applied differential geometry

G. Tong Zhou, Ph.D., University of Virginia
Research interests: Statistical signal processing; signal processing for communications; DSP-based linearization of nonlinear power amplifiers; network traffic analysis; seismic deconvolution; bio-signal analysis
PROFESSORS EMERITI AND LENGTH OF SERVICE

Cecil O. Alford
1968-98

Henry C. Bourne
1982-92

Aubrey Bush
1965-92
Now employed with the National Science Foundation

Daniel C. Fielder
1948-88
Employed with ECE on a part-time basis

Joseph L. Hammond
1955-84
Now employed with Clemson University

Richard J. Higgins
1987-99

John W. Hooper
1957-88

Edward B. Joy
1970-98

Richard P. Kenan
1986-99

Dale C. Ray
1966-99

George P. Rodrigue
1968-96

Kendall L. Su
1954-94
Employed with ECE on a part-time basis

Carl M. Verber
1986-2000

Thomas M. White
1948-88
Employed with ECE on a part-time basis

JOINT FACULTY APPOINTMENTS

William L. Ditto, Associate Professor, School of Physics
James D. Foley, Professor, College of Computing, and Executive Director of Yamacraw
John O. Limb, GRA Eminent Scholar in Advanced Telecommunications, College of Computing

ADJUNCT AND PART-TIME APPOINTMENTS

Daniel J. Blumenthal, University of California at Santa Barbara
David E. Bockelman, Motorola
Bertrand Boussert, Georgia Tech Lorraine
Giorgio Casinovi, Georgia Tech Research Institute
Marvin Cohen, Georgia Tech Research Institute
Donald D. Davis, Antec Corp.
Jim D. Echard, Georgia Tech Research Institute
Robert Eisner, Emory University
Irfan Essa, College of Computing
Albin J. Gasiewski, National Oceanic and Atmospheric Administration
Gary G. Gimmesst, Georgia Tech Research Institute
Jean-Pierre Goedgebuer, Georgia Tech Lorraine
Nile F. Hartman, Georgia Tech Research Institute
E. Jefferson Holder, Georgia Tech Research Institute
Morris Kesler, Georgia Tech Research Institute
Fred Kitson, Hewlett-Packard
P.O. Lauritzen, University of Washington
François J. Malassenet, Georgia Tech Lorraine
Kenneth M. Mackenzie, College of Computing
Bill McKinnon, Georgia Tech Research Institute
Robert McNally, Cryolife, Inc.
Jerome Meisel, Georgia Tech
Stephan C. Mettler, Lucent Technologies
J.W. Monaco, Line Imaging Systems
Romain Murenzi, Clark Atlanta University
William R. Owens, Georgia Tech Research Institute
Umakishore Ramachandran, College of Computing
Edward K. Reedy, Georgia Tech Research Institute
Mark A. Richards, Georgia Tech Research Institute
Craig Richardson, ASPI Digital
Gabriel Rincon-Mora, Texas Instruments
Tariq Samad, Honeywell
Robert E. Schwerzel, Georgia Tech Research Institute
Bhushan L. Sopori, Solar Energy Research Institute
Christopher Summers, School of Materials Science and Engineering
Kwan K. Truong, ASPI Digital
Gisele Welch, Georgia Tech Research Institute
Stephen B. Wicker, Cornell University
standing committees

David V. Anderson  
Lonnie D. Harvel

Phillip E. Allen  
A.P. Sakis Meliopoulos

Abhijit Chatterjee  
Gordon L. Stüber

Mark G. Allen  
David E. Schimmel

Miroslav M. Begovic  
Andrew F. Peterson*

John R. Barry*  
Thomas K. Gaylord

Paul J. Benkeser  
Paul E. Hasler

Thomas P. Barnwell, III  
David C. Keezer

Phillip E. Allen  
Monson H. Hayes, III  
William E. Sayle

K.-H. Michael Fan  
Emmanouil M. Tentzeris

Ian F. Akyildiz  
Waymond R. Scott, Jr.

Robert K. Feeney*  
David E. Schimmel

Yucel Altunbasak  
Michael D. Furman

Martin A. Brooke  
Steven W. McLaughlin

Douglas M. Blough  
Allen Tannenbaum

Robert K. Feeney  
John B. Peatman

J. Alvin Connelly  
Chai-Keong Toh

April S. Brown  
Roger P. Webb*

Stephen P. DeWeerth  
Hans B. Pütten

Kevin F. Brennan  
David R. Hertling

Thomas E. Brewer  
W. Marshall Leach

Joseph L.A. Hughes  
Ronald W. Schafer

Mark A. Clements  
Nan Marie Jokerst

Elias N. Glytsis  
George J. Vachtsevanos*

Ronald G. Harley  
Madhavan Swaminathan

Thomas K. Gaylord  
Sudhakar Yalamanchili

Robert J. Buten, Jr.  
Arthur Koblasz

Thomas G. Habetler  
William E. Sayle

John A. Copeland  
David S. Webb

A. Bruno Frazier  
David G. Taylor

Ajeet Rohatgi  
Rao R. Tummala*

Mary Ann Ingram  
G. Tong Zhou

Mark A. Clements  
Nan Marie Jokerst

John A. Buck  
Henry L. Owen

William D. Hunt  
Jay H. Schlag

J. Alvin Connelly*  
Edward W. Kamen

Nikil Jayant  
Glenn S. Smith

Vijay K. Madisetti*  
John P. Uyemura

Joy Laskar  
Andrew F. Peterson

Jeffrey A. Davis  
Mohamed Moad

Gary S. May*  
Yorai Y. Wardi

Nominating

Standing Committees of the Academic Faculty

Academic Services  
Bonnie S. Heck

Faculty Status and Grievance  
Erik I. Verrist

Graduate  
April S. Brown

Stephen P. DeWeerth  
Monson H. Hayes, III  
Andrew F. Peterson**

Nominating  
William E. Sayle*

Student Academic and Financial Affairs  
Miroslav M. Begovic  
D. Scott Wills

Student Activities  
Arthur Koblasz  
Steven W. McLaughlin

Student Honor  
Gary S. May*

Student Regulations  
Paul J. Benkeser*

Undergraduate Curriculum  
D. Scott Wills

* Indicates committee chair
** Indicates committee vice chair

computer resources
continuing education
faculty honors
faculty recruitment
graduate
graduate student recruitment
laboratory
program improvement
reappraisal, promotion, and tenure
research
seminar
statutory advisory
student/faculty
undergraduate

faculty service on institute governing bodies and committees

Executive Board
W. Russell Callen, Jr.
William E. Sayle
Yorai Y. Wardi

Academic Senate
William D. Hunt
Yorai Y. Wardi

General Faculty Assembly
Miroslav M. Begovic
Yorai Y. Wardi

* Committee chair
FACULTY technical interest areas

bioengineering

Mark G. Allen
Stephen P. DeWeerth* 
Allen Tannenbaum
G. Tong Zhou

Paul J. Benkeser
William L. Ditto**
George J. Vachtsevanos

Robert J. Butera, Jr.
A. Bruno Frazier
Erik I. Verriest

Mark A. Clements
Paul E. Hasler
Anthony J. Yezzi, Jr.

computer engineering

Ian F. Akyildiz
Robert J. Butera, Jr.
James O. Hamblen
Vijay K. Madisetti
Krishna V. Palem
Gordon L. Stüber
Linda M. Wills

David V. Anderson
Abhijit Chatterjee
Joseph L.A. Hughes
James H. McClellan
John B. Peatman
Madhavan Swaminathan
Sudhakar Yalamanchili

Thomas P. Barnwell, III
Jeffrey A. Davis
Nikil Jayant
Vincent J. Mooney, III
David E. Schimmel*
Rao R. Tummala

Douglas M. Blough
Stephen P. DeWeerth
David C. Keezer
Henry L. Owen
Jay H. Schlag
D. Scott Wills

digital signal processing

Yuce Altmbasasak
Monso H. Hayes, III
Ronald W. Schafer

David V. Anderson
Vijay K. Madisetti
Mark J.T. Smith

Thomas P. Barnwell, III
James H. McClellan
Douglas B. Williams

A.P. Sakis Meliopoulos
David G. Taylor

electric power

Miroslav M. Begoovic
Hans B. Püttgen*
George J. Vachtsevanos

John A. Buck
Joy Laskar
Waymond R. Scott, Jr.
Emmanouil M. Tentzeris

David R. DeBoer
W. Marshall Leach, Jr.
Glenn S. Smith*

Thomas K. Gaylord
Andrew F. Peterson
Paul G. Steffes

Elias Glytsis
Stephen E. Ralph
Madhavan Swaminathan

electromagnetics

Phillip E. Allen
J. Alvin Connelly
David R. Hertling
William E. Style

Farrokh Ayazi
Stephen P. DeWeerth
J. Stevenson Kenney
John F. Uyemura

Paul J. Benkeser
Robert K. Feeney
Joy Laskar*

Martin A. Brooke
Paul E. Hasler
W. Marshall Leach, Jr.

electronic design and applications

Ali Adibi
Martin A. Brooke
Timothy J. Drabik
Elias N. Glytsis

Farrokh Ayazi
J. Alvin Connelly
Robert K. Feeney
Joseph L.A. Hughes

Kevin F. Brennan
Jeffrey A. Davis
Thomas K. Gaylord
William D. Hunt

A.P. Sakis Meliopoulos
David G. Taylor

microelectronics

Ali Adibi
W. Russell Callen, Jr.
William D. Hunt
William T. Rhodes
Erik I. Verriest

Mark G. Allen
April S. Brown
Robert K. Feeney
David R. Hertling
David C. Keezer
James D. Meindl
Joy H. Schlag

Farrokh Ayazi
J. Alvin Connelly
Robert K. Feeney
Joseph L.A. Hughes

John A. Buck*
Elias N. Glytsis
Stephen E. Ralph
Carl M. Verber

optics and photonics

Ali Adibi
Gary S. May
David G. Taylor
Yormi Y. Wardi*

Kevin F. Brennan
Timothy J. Drabik
Mary Ann Ingram
Ajeet Rohatgi

April S. Brown
Thomas K. Gaylord
Nan Marie Jokerst
Glenn S. Smith

John O. Limb**

oni Ann Ingram
Steven W. McLaughlin
Gordon L. Stüber*
Yormi Y. Wardi

Bonnie S. Heck
Mohamed F. Moad
George J. Vachtsevanos

Edward W. Kamen
Allen Tannenbaum
Erik I. Verriest

systems and controls

John F. Dorsey
Gary S. May
David G. Taylor
Yormi Y. Wardi*

John R. Barry
Mary Ann Ingram
Steven W. McLaughlin
Gordon L. Stüber*
Yormi Y. Wardi

Martin A. Brooke
Nikil Jayant
Henry L. Owen
Chai-Keong Toh

John A. Copeland
J. Stevenson Kenney
Ronald W. Schafer
Carl M. Verber

telecommunications

Ian F. Akyildiz
Joseph L.A. Hughes
John O. Limb**
Paul G. Steffes
Erik I. Verriest

K.-H. Michael Fan
A.P. Sakis Meliopoulos
Chai-Keong Toh
Anthony J. Yezzi, Jr.

Bonnie S. Heck
Mohamed F. Moad
George J. Vachtsevanos

Edward W. Kamen
Allen Tannenbaum
Erik I. Verriest

*Area Chair
**Joint Appointment
During 1999-2000, both active and retired ECE faculty members offered and taught 20 sections of courses through Georgia Tech's Distance Learning, Continuing Education, and Outreach Department. To the left is a listing of course dates, titles, and ECE-based instructors and administrators. All classes were taught at Georgia Tech's Atlanta campus, unless indicated otherwise.
RESEARCH AND ADMINISTRATIVE

One hundred and fifty-six administrative and research staff members, who are listed below, were employed during 1999-2000. There were 10 terminations and resignations, one death, two transfers, 37 new hires, and 24 promotions. As of June 30, 2000, there were 125 administrative and research employees.

Research Personnel

Randal T. Abler, Research Engineer II
Enrico Bellotti, Research Engineer II
Keith Bernhardt, Research Engineer II
Swapan K. Bhattacharya, Senior Research Scientist
Dhananjay Bhusari, Postdoctoral Fellow
John Bordelon, Senior Research Engineer
Thomas C. Champion, Research Engineer I
Thomas Chen, Postdoctoral Fellow
Young Cho, Research Engineer II
Larry T. Coffeen, Research Engineer II
Timothy Collins, Research Technician II
Didier Contis, Research Engineer I
Lorand Csiszar, Research Technologist I
Kathleen Cummings Maloney, Research Engineer II
Seddik Djouadi, Postdoctoral Fellow
William A. Doolittle, Research Engineer II
Abasifreke U. Ebong, Research Engineer II
Peter W. Flur, Research Engineer II
Alex Z. Goldstein, Research Engineer II
Mason Graff, Research Scientist I
Michael Hamai, Research Engineer I
Richard A. Hartlein, Senior Research Engineer
Lonnie D. Harvel, Research Scientist II
Comas Haynes, Postdoctoral Fellow
Jeffrey Hildreth, Research Engineer I
Raymond C. Hill, Research Technologist II
Joel Jackson, Research Engineer II
Jimmie Jones, Research Technician II
Youngjoong Joo, Research Engineer II
Sachin Kamra, Research Scientist II
Tae S. Kim, Postdoctoral Fellow
Frank C. Lambert, Senior Research Engineer
Kyeongkyun Lee, Postdoctoral Fellow
Seock-Hee Lee, Postdoctoral Fellow
Yuan T. Li, Research Engineer II
David Lin, Postdoctoral Fellow
Ralf Ludemann, Postdoctoral Fellow
Ramanamurtty Malladi, Research Eng. II
Pulugurtha Markondeya-Raj, Postdoctoral Fellow
Janeen McReynolds, Research Engineer I
Giacomo Morabito, Research Engineer I
Zhao Yuan Ning, Visiting Research Scientist
Kyung Paik, Senior Research Engineer
Thomas J. Parker, Research Technologist II
Shashikant G. Patel, Research Engineer II
Mark Richards, Senior Research Engineer
Caryn Riley, Research Engineer II
Samuel F. Smith, Research Scientist I
W. Whitfield Smith, Senior Research Engineer
Paul L. Springer, Research Engineer II
Jegannathan Srinivasan, Research Eng. II
Youngsuk Suh, Research Engineer II
Harry T. Sullivan, Research Scientist I
Venkatesh Sundaram, Research Engineer I
Dean A. Sutter, Electrical Engineer III
Pazhamaneri Thilagarajan, Visiting Professor
Greg Van Wiggeren, Postdoctoral Fellow
Mahesh Varadarjan, Research Engineer II
Martin Von Arx, Postdoctoral Fellow
Irene G. Wells, Research Engineer II
George White, Senior Research Engineer
Wei Fai Wong, Visiting Assistant Professor
Wei Dong Xiang, Postdoctoral Fellow
Guang Yuan, Postdoctoral Fellow
Ilgu Yun, Postdoctoral Fellow

Administrative Staff

Nancy L. Baines, Administrative Assistant I
Debra Balkcom, Accountant I
Erick Beebe, Systems Support Specialist III
Margaret Boehme, Admin. Assistant I
Margarita Bolet, Administrative Coordinator
Robert C. Boozer, Business Operations Manager
Thomas E. Brewer, Assistant to the Chair and Laboratory Manager II
Suzy Briggs, Director of Development
Jamie Brinkley, Senior Administrative Secretary
Lynda D. Buescher, Assistant Director for ECE Personnel Services
Valarie Burnett, Senior Accounting Assistant
Donnie Gayle Bur, Admin. Assistant II
Darlene Bush, Administrative Assistant I
Dale E. Callaway, Research Coordinator II
Stephanie Cappello, Systems Support Specialist I
Mary Jane Chappell, Admin. Assistant II
Kathy B. Cheek, Administrative Assistant II
Tracy Childers, Computer Services Spec. III
Tina Clonts, Accountant III
Leyla Sutcu Conrad, Academic Professional
Sherrie Cooper, Academic Assistant I
Sharon Crouch, Assistant Director for ECE Accounting
RESEARCH AND
ADMINISTRATIVE
PERSONNEL

Marion Crowder, Sr. Information Specialist
Sharise J. Cunningham, Information Specialist II
MaryJo Davis, Academic Advisor II
Wayne Devezin, Research Equip. Specialist
Charlotte A. Doughty, Sr. Admin. Secretary
Heather L. Emmert, Program Coordinator II
Lajana F. Ennis, Administrative Manager I
Barry N. Fairley, Research Coordinator I
Claudia Ford, Academic Advisor I
Diana L. Fouts, Graphics Specialist
Michael D. Furman, Academic Professional
Kayron C. Gilstrap, Accountant III
Pamela F. Halverson, Admin. Assistant II
David W. Harwell, Research Coordinator I
Fanchette Hillery, Computer Services Specialist II
Robert R. House, Electronics Technician III
Richard L. Howell, Research Coordinator I
Angela Hughes, Administrative Manager I
Joseph F. Jackson, Director for Operations and Assistant to the Chair
Kesha L. Jackson, Administrative Assistant II
Valerie C. Johnson, Admin. Coordinator
Minionette R. Jolly, Senior Administrative Secretary
Edgar L. Jones, Electronics Technician III
Rajib Joshi-Acharya, Computer Services Specialist III
Debra B. Kelley, Administrative Manager I
Deborah K. King, Administrative Assistant II
Rochelle F. Kraehe, Admin. Assistant II
Warren M. Lanier, Academic Professional
Sharon D. Lawrence, Academic Assistant II
Angelo Lawton, Research Coordinator I
Herbert Lehman, Director of Operations
Judith C. Lorier, Accountant III
François J. Malassenet, Director of Georgia Tech Lorraine
Keith May, Computer Services Specialist III
W. Bruce McFarland, Laboratory Coordinator
Thomas McKoon, Research Coordinator II
Rachel Melton, Computer Services Spec. II
Marvin Mims, Mechanical Technician I
Doria Moore, Accountant III
Marilouise Mycko, Academic Advisor II
Janet M. Myrick, Senior Administrative Secretary
Jacqueline L. Nemeth, Senior Information Specialist
Linda Newton, Administrative Assistant I
Lisa Novak, Accounting Manager I
Joe Novosel, Research Equipment Specialist
James I. Nowell, Mechanical Technician III
Gail O. Palmer, Program Specialist
Rokha Patel, Financial Manager I
Matthew Perry, Program Manager
Boyd M. Pettitt, Research Coordinator II
Gail A. Reeves, Program Coordinator II
Kathleen Robichaud, Senior Academic Professional
Gail Rothman, Program Coordinator II
Carl A. Rust, Business Operations Manager for the Packaging Research Center
Gwendolyn J. Satchel, Administrative Assistant II
Stacy V. Schultz, Administrative Assistant II
Melissa Sherrer, Administrative Assistant II
Fred T. Stanley, Research Coordinator I
Florence I. Stoia, Program Coordinator II
Jennifer P. Tatham, Administrative Coordinator
Denise D. Taylor, Administrative Assistant I
Jacqueline Trappier, Records Coordinator II
Nancy Trent, Program Coordinator I
Alvis Turner, Assistant to the Director of NEETRAC Operations
Judith Vanderboom, Accountant III
Harry L. Vann, Development Officer I
Gene A. Ward, Electronics Technician III
David S. Webb, Senior Academic Professional and Assistant to the Chair for Computer Support
Todd E. Whitehurst, Computer Services Specialist IV
Dean Williams, Research Coordinator II
Rochelle Y. Williams, Accountant III
Suzzette Willingham, Academic Assistant II
Carla Zachery, Accountant II
STUDENT BODY PROFILE
(Based on Fall 1999 Enrollment)

<table>
<thead>
<tr>
<th>Degree</th>
<th>% Women</th>
<th>% African Americans</th>
<th>% Other Minorities</th>
</tr>
</thead>
<tbody>
<tr>
<td>BSEE</td>
<td>11.7%</td>
<td>16.6%</td>
<td>4.5%</td>
</tr>
<tr>
<td>BSCmpE</td>
<td>16.6%</td>
<td>16.6%</td>
<td>4.5%</td>
</tr>
<tr>
<td>Total</td>
<td>1,788</td>
<td>14.0%</td>
<td>4.5%</td>
</tr>
<tr>
<td>MS/MSECE</td>
<td>13.7%</td>
<td>6.4%</td>
<td>2.7%</td>
</tr>
<tr>
<td>Special</td>
<td></td>
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<tr>
<td>PhD</td>
<td>13.7%</td>
<td>6.4%</td>
<td>2.7%</td>
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<tr>
<td>Total</td>
<td>779</td>
<td>14.0%</td>
<td>4.7%</td>
</tr>
<tr>
<td>Total</td>
<td>2,567</td>
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</table>

DEGREES AWARDED
(Summer 1999-Spring 2000)

<table>
<thead>
<tr>
<th>Degree</th>
<th>% Women</th>
<th>% African Americans</th>
<th>% Other Minorities</th>
</tr>
</thead>
<tbody>
<tr>
<td>BEE</td>
<td>10.6%</td>
<td>14.0%</td>
<td>4.7%</td>
</tr>
<tr>
<td>BSEE</td>
<td>14.0%</td>
<td>14.0%</td>
<td>4.7%</td>
</tr>
<tr>
<td>BCmpE</td>
<td>16.0%</td>
<td>16.0%</td>
<td>4.7%</td>
</tr>
<tr>
<td>BSCmpE</td>
<td>12.2%</td>
<td>8.1%</td>
<td>1.5%</td>
</tr>
<tr>
<td>Total</td>
<td>321</td>
<td>14.0%</td>
<td>4.7%</td>
</tr>
<tr>
<td>MS</td>
<td>41</td>
<td>8.1%</td>
<td></td>
</tr>
<tr>
<td>MSECE</td>
<td>181</td>
<td>8.1%</td>
<td></td>
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<tr>
<td>PhD</td>
<td>49</td>
<td>8.1%</td>
<td></td>
</tr>
<tr>
<td>Total</td>
<td>271</td>
<td>8.1%</td>
<td>1.5%</td>
</tr>
</tbody>
</table>

Total 592

*Includes Hispanics, Native Americans, and persons of multiracial origins

Honors and Awards

Mubashir Alam, John Elmore, David Fann, Suzanne Fike, Tyson Hall, Ryan McCowan, Jaime Morales, Anh Nguyen, Mike Reid, Filip Schmole, Mustafa Turkboylari, and P. Spencer Whitehead each received an ECE Outstanding Graduate Teaching Assistant Award.

Stephanie Ann Augburger, Keith C. Brouse, Michael Hui, Daniel R. James, and Stacy N. Rodd each received the ECE Faculty Award, which is given to the students who, in the opinion of the ECE faculty, have done the most to improve the educational environment within ECE or Georgia Tech and have contributed significantly to both student welfare and student-faculty interactions.

Tico Ballagas and Sophia Carreker received Georgia Tech Alumni Association Student Leadership Awards for International Study.

Avalon S. Blenman, Deborah Stutz, Mary Thomas, and Frances Williams received Georgia Tech Women’s Forum Scholarships.

Shannon Brenner and Chunyan He received Georgia Tech Faculty Women’s Club Scholarships.

Adam C. Brown, Murat Guler, Tyson S. Hall, Seth D. Robinson, and Matthew J. Wellman each received an ECE Scholar Award for having the highest academic averages in their class.

Jeffrey A. Cole received the ECE Outstanding Senior Award for his excellent scholastic average and his active role in extracurricular activities.

Yuhua Ding and Azad Naeemi received Colonel Oscar P. Cleaver Awards for their outstanding scores on the doctoral preliminary examinations.

John Elmore received a Center for the Enhancement of Teaching and Learning (CETL)/BP Amoco Outstanding Teaching Assistant Award.

Joe Haralson, II received a Sigma Xi Outstanding Doctoral Thesis Award for his dissertation entitled “Design, Analysis, and Macroscopic Modeling of High Speed Photodetectors Emphasizing the Joint Opening Effect Avalanche Photodiode and the Lateral p-i-n Photodiode.” His thesis advisor was Kevin F. Brennan.

Paul Brian Hultz, Michael Thomas Miller, William Lester Plishker, Kaushik Ravindran, and Andrew Neill Stein each received a Henry Ford II Scholar Award, which is presented to the engineering students with the best academic records at the end of the third year of undergraduate study.

Chung-Tse Mar received the ECE Outstanding Sophomore Award for having the highest scholastic average in his class.

Gregory A. Martin received the Tau Beta Pi Outstanding Engineering Student Award.

Girish Patel received a Sigma Xi Outstanding Doctoral Thesis Award for his dissertation entitled “A Neuromorphic Architecture for Modeling Intersegmental Coordination.” His thesis advisor was Stephen P. DeWeerth.

Arthur J. Redfern received the 1999 Center for Signal and Image Processing Research Award. His advisor was G. Tong Zhou.

David Stokes received the 1999 Packaging Research Center Outstanding Ph.D. Student Award. His advisor is Gary S. May.
STUDENTS

ph.d students graduated

Anuj Batra—Advisor: Barry—Spring 2000
Thesis: Extensions of the Constant-modulus Algorithm and the Phase-locked Loop for Blind Multiuser Detection
Current Status: Employed as a technical staff member at the Texas Instruments Digital Signal Processing (DSP) Research and Development Center in Dallas, TX.

Philip Bingham—Advisor: Alford—Fall 1999
Current Status: Employed with Oak Ridge National Laboratories in Oak Ridge, TN.

Richard A. Causey—Advisor: Barry—Summer 1999
Thesis: Blind Multiuser Detection Based on Second-order Statistics
Current Status: Employed as a senior staff scientist at Adtran, Inc. in Huntsville, AL.

Sek Chai—Advisor: D.S. Wills—Fall 1999
Thesis: Real Time Image Processing on Parallel Arrays for Gigascale Integration
Current Status: Employed as a staff engineer at Motorola Research Laboratories in Schaumburg, IL.

Mohammad Chaichimansour—Advisor: Summers—Spring 2000
Current Status: Not known.

Kwang Choi—Advisor: Swaminathan—Fall 1999
Thesis: Modeling and Simulation of Embedded Passives Using Rational Functions in Multi-layered Substrates
Current Status: Employed at Electromagnetic Sciences in Atlanta, GA.

Myung Choi—Advisor: Owen—Summer 1999
Thesis: Traffic Flow Management for RSVP/ATM Edge Devices
Current Status: Employed as a research engineer in the Information Technology and Telecommunications Laboratory at the Georgia Tech Research Institute in Atlanta, GA.

Kee Shik Chung—Advisor: D.S. Wills—Spring 2000
Thesis: ILP-SIMD: An Instruction Parallel SIMD Architecture with Short-wire Interconnects
Current Status: Employed as a technical staff member at Intel Corp. in Chandler, AZ.

Lucian Codrescu—Advisor: D.S. Wills—Spring 2000
Thesis: ATLAS: A Dynamically Parallelizing Chip-multiprocessor for Gigascale Integration
Current Status: Employed as an assistant professor in the School of Electrical and Computer Engineering at Georgia Tech in Atlanta, GA.

Jeffrey A. Davis—Advisor: Meindl—Summer 1999
Thesis: A Hierarchy of Interconnect Limits and Opportunities for Gigascale Integration (GSI)
Current Status: Employed as an assistant professor in the Department of Electrical and Computer Engineering at the University of Alabama at Huntsville in Huntsville, AL.

Jennifer English—Advisor: M. Allen—Spring 2000
Thesis: Wireless Micromachined Ceramic Pressure Sensors for High Temperature Environments
Current Status: Employed as an assistant professor at the University of North Carolina in Asheville, NC.

Rosana Esteller—Advisor: DeWeerth—Spring 2000
Thesis: Detection of Seizure Onset in Epileptic Patients from Intracranial EEG Signals
Current Status: Employed as a research engineer at IntelliMedix, Inc. in Atlanta, GA.

Tammy Gammon—Advisor: Pütgten—Fall 1999
Thesis: Improved Arcing Fault Current Models for Low-voltage Systems (<1 kv)
Current Status: Employed as an assistant professor at the University of North Carolina in Asheville, NC.

Sangwoo Han—Advisor: Laskar—Spring 2000
Thesis: Development of MMIC-based Modules for RF/Optical Subcarrier Multiplexed Communications
Current Status: Employed as a senior technical staff member at RF Solutions in Atlanta, GA. Dr. Han is also an original co-founder of the company.

Ramhi Hezar—Advisor: Madisetti—Spring 2000
Thesis: Oversampled Digital Filters: A Design Methodology and Implementation
Current Status: Employed with Texas Instruments in Dallas, TX.

Chi-Jui Ho—Advisor: Lea—Fall 1999
Thesis: Call Admission Control in Cellular Networks
Current Status: Employed with Nortel Networks in Richardson, TX.

David A. Jackson—Advisor: Gasiwski—Summer 1999
Thesis: Calibration of Millimeter and Submillimeter-wave Radiometers with Application to Clear Air Remote Sensing of the Troposphere
Current Status: Employed as a senior engineer with the U.S. Central Intelligence Agency in Washington, DC.
STUDENTS

Randall Janka–Advisor: L.M. Wills–Fall 1999
Thesis: A Model-continuous Specification and Design Methodology for Large Multiprocessor DSP Systems
Current Status: Employed as a senior research engineer in the Sensors and Electromagnetic Applications Laboratory at the Georgia Tech Research Institute Cobb County Facility in Marietta, GA.

Robert Johnston–Advisor: Owen–Fall 1999
Current Status: Employed at General Dynamics in Cleveland, OH.

Jinsoup Joung–Advisor: Stüber–Spring 2000
Thesis: Co-channel Interference Canceling Receivers for TDMA Systems
Current Status: Employed with the Electronics and Telecommunications Research Institute in Seoul, South Korea.

Todd Kaiser–Advisor: M. Allen–Spring 2000
Thesis: A Micromachined Pendulous Oscillating Gyroscopic Accelerometer
Current Status: Employed as an adjunct professor in the School of Electrical and Computer Engineering at Montana State University in Bozeman, MT.

Mohammad Khan–Advisor: M. Smith–Fall 1999
Thesis: Trellis-coded Residual Vector Quantization
Current Status: Employed as an assistant professor at King Fahd University of Petroleum and Minerals in Dhahran, Saudi Arabia.

Wasim Khan–Advisor: Taylor–Fall 1999
Thesis: Nonlinear Adaptive Control of Motor Drives
Current Status: Employed as the manager of operations control software at Ciena Corp. in Linthicum, MD.

Christopher Lanciani–Advisor: Schafer–Summer 1999
Thesis: Compressed-domain Processing of MPEG Audio Signals
Current Status: Employed at TASC, Inc. in Chantilly, VA.

Kyeongkyun Lee–Advisor: May–Fall 1999
Thesis: Modeling and Optimization of Molecular Beam Epitaxy for III-V Compound Semiconductor Growth
Current Status: Employed as a postdoctoral fellow in the School of Electrical and Computer Engineering at Georgia Tech in Atlanta, GA.

Sangyoun Lee–Advisor: Madisetti–Spring 2000
Thesis: Design and Implementation of Robust Signal Processors and Applications to Video Coding
Current Status: Employed as a technical staff member at Korea Telecom in Seoul, South Korea.

Miguel Maldonado–Advisor: Higgins–Fall 1999
Thesis: Fabrication of Mesoscopic Semiconductor Devices and Their Transport Characteristics
Current Status: Employed at Cypress Semiconductor in northern California.

Hong Man–Advisor: M. Smith–Fall 1999
Thesis: Efficiency and Robustness of Adaptive Quantization for Subband Coding of Images and Video Sequences
Current Status: Employed as an assistant professor in the Department of Electrical and Computer Engineering at the Stevens Institute of Technology in Hoboken, NJ.

Darnell Moore–Advisor: Hayes–Spring 2000
Thesis: Methodologies for Human Activity Recognition and Computer Awareness
Current Status: Employed as a senior software design engineer at the Texas Instruments DSP Research and Development Center in Dallas, TX.

Fernando Mujica–Advisor: M. Smith–Fall 1999
Thesis: Spatio-temporal Continuous Wavelet Transform for Motion Estimation
Current Status: Employed as a technical staff member at the Texas Instruments DSP Research and Development Center in Dallas, TX.

Ara Nefian–Advisor: Hayes–Fall 1999
Current Status: Employed as a research staff member at Intel in Santa Clara, CA.

Chanin Nilubol–Advisor: Mersereau–Spring 2000
Thesis: Two Dimensional HMM Classifier with Density Perturbation and Weighting Techniques for Pattern Recognition Problems
Current Status: Employed as a DSP engineer at Aware, Inc. in Bedford, MA.

Sreemala Pannala–Advisor: Swaminathan–Fall 1999
Thesis: Development of Time Domain Characterization Methods for Packaging Structures
Current Status: Employed at Sun Microsystems in Menlo Park, CA.
Gwangcheol Park—Advisor: M. Smith—Spring 2000
Thesis: Multiscale Deformable Template Matching for Image Analysis
Current Status: Employed as a technical staff member at Samsung in Suwon City, Kyungki-Do, South Korea.

Sanji Park—Advisor: M. Smith—Fall 1999
Thesis: New Directional Filter Banks and Their Applications in Image Processing
Current Status: Employed as a staff electrical engineer at Motorola in Austin, TX.

Rajesh Pendurkar—Advisor: Chatterjee—Fall 1999
Thesis: Design for Testability Techniques and Optimization Algorithms for Performance and Functional Testing of Multi-chip Module Interconnections
Current Status: Employed with Sun Microsystems in Santa Clara, CA.

Jeffrey Piepmeier—Advisor: Gasiewski—Summer 1999
Current Status: Employed as a research assistant professor in the Department of Electrical and Computer Engineering at the University of Tennessee in Knoxville, TN.

Jeffery Price—Advisor: Hayes—Summer 1999
Thesis: A Framework for Adaptive Image Interpolation
Current Status: Employed as a research engineer in the Sensors and Electromagnetic Applications Laboratory at the Georgia Tech Research Institute Cobb County Facility in Marietta, GA.

Arthur Redfern—Advisor: Zhou—Fall 1999
Thesis: Data Aided and Blind Equalization of Nonlinear Communications Channels
Current Status: Employed as a technical staff member at the Texas Instruments DSP Research and Development Center in Dallas, TX.

Christopher Scholz—Advisor: Blumenthal—Fall 1999
Thesis: Multi-wavelength Switching in Semiconductor Optical Amplifiers
Current Status: Employed as a member of the Optic Technology Group at Intel Corporation in Santa Clara, CA.

Stephen Schultz—Advisor: Gaylord—Fall 1999
Thesis: High Efficiency Volume Grating Coupler
Current Status: Employed as an engineer at Raytheon in Tucson, AZ.

Gregory Showman—Advisor: McClellan—Spring 2000
Thesis: Polarimetric Calibration of Ultra-wideband SAR Imagery
Current Status: Employed as a research engineer at the Georgia Tech Research Institute Cobb County Facility in Marietta, GA.

Mihai Sipitca—Advisor: Mersereau—Spring 2000
Thesis: A Conditional Entropy Approach to Encoding DCT Coefficients for Low Bit Rate Video Coding
Current Status: Employed at Intel Corp. in Portland, OR.

Octavian Stan—Advisor: Kamen—Fall 1999
Thesis: New Recursive Algorithms for Training Feed Forward Multilayer Perceptions
Current Status: Employed as an engineer at Retek in Atlanta, GA.

Xinghai Tang—Advisor: Meindl—Summer 1999
Thesis: Intrinsic and Extrinsic Parameter Fluctuation Limits on GSI
Current Status: Employed as an engineer at Motorola, Inc. in Austin, TX.

Trevor Trinkhaus—Advisor: Clements—Spring 2000
Thesis: Perceptual Coding of Audio and Diverse Speech Signals
Current Status: Employed as a research engineer at the U.S. Air Force Research Laboratory in Rome, NY.

Pramodchandran Variyam—Advisor: Chatterjee—Summer 1999
Thesis: Efficient Testing Techniques for Analog and Mixed-signal Circuits
Current Status: Employed at Texas Instruments in Dallas, TX.

Karim Wassef—Advisor: Peterson—Summer 1999
Thesis: Nonlinear Transient Finite Element Analyses of Conductive and Ferromagnetic Regions Using a Surface Admittance Boundary Condition
Current Status: Employed as a research engineer in the Power Systems Division of Lucent Technologies in Mesquite, TX.

Philip Zhou—Advisor: Ingram—Fall 1999
Thesis: Array Pattern Synthesis and Adaptive Beamforming with Pattern Control
Current Status: Employed as a lead systems engineer at Motorola, Inc. in Arlington Heights, IL.
1999-2000
IEEE Student Branch Officers

Chair
Vice Chair, Internal Relations
Vice Chair, External Relations
Treasurer
Secretary
Publicity Chair
Social Chairs
National Engineers Week Chair
Web Site Committee Chair
Hardware Committee Chair
Mailing Lists Chair
Web Group

Keith Brouse
Michael Hui
Nishant Nagda
Matthew Bryan
Catherine Thorn
Emem Akpan
Phil Black, David Spiller
Terence Haran
Ryan Holman
Danny James
Satish Sambandham
Samir Parikh

1999-2000
Eta Kappa Nu Officers

President
Vice President
Treasurer
Recording Secretary
Corresponding Secretary
Bridge Correspondent
Graduate Liaison

Heather Jegel
Nick Bronn
Deborah Stutz
Aaron Jackson
Sherry Womack
Ryan Holman
Stephanie Augsburger

1999-2000
ECE Student Advisory Council

Stephanie Augsberger
Dan Barton
Shannon Brenner
Nick Bronn
Keith Brouse
Michael Hui
Heather Jegel
John D. Kitt
Gregory Martin
Elliot Moore

Chris Murray
David Peters
Stacey Rodd
Gregory Scherrer
David Skinner
Andrew Stein
Deborah Stutz
Catherine Thorn
Chip Vorndran
Undergraduate Instructional Operations

The 1999-2000 academic year was a year of continuing conversion and additional workload. The School of Electrical and Computer Engineering devoted considerable resources and effort to implementation of the calendar conversion from quarters to semesters.

The conversion required extensive advising of virtually all of our 1,850 undergraduate computer engineering and electrical engineering majors. Group advising sessions had been held throughout the 1998-99 academic year. Transition courses had been developed for sequences that were not being continued under semesters. Early versions of two semester courses had been taught in spring 1999 using a quarter schedule. Trailer versions of certain quarter courses were taught during fall and spring semesters to accommodate students who were unable to complete critical quarter sequences. A comprehensive listing of the School’s 1999-2000 courses is detailed in this part of the annual report.

Assessment efforts continued throughout the academic year. In February 2000, the faculty assembled for the annual retreat, with assessment as a significant part of the activity. The ECE undergraduate committee devoted substantial effort to preparing and reviewing objectives and outcomes for the required core courses. Faculty members teaching multiple sections of required core courses were required to meet on a regular basis to coordinate course material. This coordination was especially critical for ECE 2030, as 12 sections of this required course were offered in fall 1999.

The advising staff in the ECE Academic Office was strained by the massive advising effort required during fall 1999 because of the conversion to the semester calendar. MaryJo Davis and Associate Chair Emeritus Tom White bore the brunt of the load. Fortunately, the School was able to generate a second academic advisor position, which was filled by Claudia Ford, formerly of the Georgia Tech Registrar’s Office. Minionette Jolly continued to provide vital administrative support in undergraduate affairs, which includes her service as textbook coordinator for the School.

Graduate Instructional Operations

During FY 2000, the ECE Graduate Affairs Office increased its staff to five in order to serve the School’s graduate students more effectively and efficiently. In the last year, Jacqueline Trappier, records coordinator, and Suzzette Willingham, academic assistant, joined this operation, which also consists of Associate Chair David R. Hertling, Academic Advisor Marlouise Mycko, and Academic Assistant Sherrie Cooper. These personnel are responsible for recruitment, admission, financial support, advisement, and record keeping. They also work in tandem with the ECE Graduate Committee and Graduate Student Recruitment Committee to enact sound academic policies and to attract high quality master’s and doctoral students to the program.

International Study Opportunities

GEORGIA TECH LORRAINE

Georgia Tech Lorraine (GTL), Georgia Tech’s platform into Europe, is a non-profit corporation operating under French law. Its four areas of emphasis are graduate education, sponsored research, undergraduate summer education, and continuing education.

Established in October 1990, GTL is a highly innovative program. Students may earn an undesignated master’s degree, a master’s degree in electrical engineering or mechanical engineering, or a Ph.D. degree, all from Georgia Tech. As of fall 1999, 132 students were enrolled in GTL’s year-round academic programs, with 77 students in M.S.E.C.E., 35 students in M.S.M.E., and 20 students in the Ph.D. program.

GTL also offers an undergraduate summer program that includes courses in electrical engineering, mechanical engineering, management, and international affairs. Forty-one students enrolled in the 1999 summer undergraduate program, and 63 students registered for the summer 2000 program.

Cooperative agreements with local partner institutions enable students to pursue double degree programs in engineering and sciences, in addition to degrees from the Georgia Tech. Upon successful completion of these highly innovative and integrated programs, students are awarded a master’s degree from Georgia Tech and a graduate diploma from a partner institution.

Hans B. Pütten and François J. Malasseinet serve as GTL’s president and directeur, respectively. Florence I. Stoia is the GTL program coordinator at the Atlanta campus, and Jennifer Pereira is the program coordinator at the GTL campus, which is located in Metz, France.

OXFORD STUDY ABROAD

The Oxford Study Abroad Program offers two excursions—one to Australia and New Zealand during the spring semester and one to England during the summer semester.

The Australia program allows students to take courses in biology, geology, engineering, and social sciences. Coursework is taught at Melbourne University and Victoria University, as well as on the islands of Fiji, Cook, and Hawaii. The 1999-2000 Australia program had an enrollment of 91.

Coursework for the England program is taught at Oxford University, and students also choose from one of three travel itineraries in continental Europe. The program offers classes in engineering, architecture, music, and social sciences. The 1999-2000 England program had an enrollment of 155.

Arthur Koblasz and Paul J. Benkeser served as Oxford’s program director and academic program director, respectively. Jason Seletos and Heather Emmert serve as program coordinators.
### Summer 1999 Graduate Courses

<table>
<thead>
<tr>
<th>Course</th>
<th>Title</th>
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<tbody>
<tr>
<td>EE 4701</td>
<td>Cryptography &amp; Data Security</td>
</tr>
<tr>
<td>EE 4702</td>
<td>Digital Communication Systems</td>
</tr>
<tr>
<td>EE 4703</td>
<td>Feedback Control Systems I</td>
</tr>
<tr>
<td>EE 4704</td>
<td>Feedback Control Systems II</td>
</tr>
<tr>
<td>EE 4705</td>
<td>Optical Modulation</td>
</tr>
<tr>
<td>EE 4706</td>
<td>Frequency Synthesizers</td>
</tr>
<tr>
<td>EE 4707</td>
<td>Digital Image Processing</td>
</tr>
<tr>
<td>EE 4708</td>
<td>Advanced Communication Theory</td>
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### Summer 1999 Undergraduate Courses

<table>
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<tr>
<th>Course</th>
<th>Title</th>
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<tr>
<td>EE 4701</td>
<td>Cryptography &amp; Data Security</td>
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<td>Digital Communication Systems</td>
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<td>EE 4703</td>
<td>Feedback Control Systems I</td>
</tr>
<tr>
<td>EE 4704</td>
<td>Feedback Control Systems II</td>
</tr>
<tr>
<td>EE 4705</td>
<td>Optical Modulation</td>
</tr>
<tr>
<td>EE 4706</td>
<td>Frequency Synthesizers</td>
</tr>
<tr>
<td>EE 4707</td>
<td>Digital Image Processing</td>
</tr>
<tr>
<td>EE 4708</td>
<td>Advanced Communication Theory</td>
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### Fall 1999/Spring 2000 Undergraduate Courses

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<tr>
<th>Course</th>
<th>Title</th>
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<td>EE 4701</td>
<td>Cryptography &amp; Data Security</td>
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<td>EE 4702</td>
<td>Digital Communication Systems</td>
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<td>EE 4703</td>
<td>Feedback Control Systems I</td>
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<td>Digital Image Processing</td>
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<td>EE 4708</td>
<td>Advanced Communication Theory</td>
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</table>

### Summer 1999 Undergraduate Special Topics Offerings

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<th>Course</th>
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<tr>
<td>EE 4701</td>
<td>Oxford Research Seminars*</td>
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<tr>
<td>EE 4702</td>
<td>Lecture Portion of Biomedical Instrumentation</td>
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<tr>
<td>EE 4703</td>
<td>Case Studies in Rehabilitation Engineering</td>
</tr>
<tr>
<td>EE 4704</td>
<td>Network Design &amp; Simulation</td>
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### Summer 1999 Graduate Courses

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<thead>
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<th>Total Enroll</th>
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<tr>
<td>77</td>
<td>EE 6086</td>
<td>Cryptography &amp; Data Security</td>
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<td>16 (Video)</td>
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<td>Feedback Control Systems III</td>
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### Fall 1999/Spring 2000 Undergraduate Courses

<table>
<thead>
<tr>
<th>Course</th>
<th>Title</th>
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<tbody>
<tr>
<td>EE 4701</td>
<td>Cryptography &amp; Data Security</td>
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<td>EE 4702</td>
<td>Digital Communication Systems</td>
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<tr>
<td>EE 4703</td>
<td>Feedback Control Systems I</td>
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<td>EE 4704</td>
<td>Feedback Control Systems II</td>
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<tr>
<td>EE 4705</td>
<td>Optical Modulation</td>
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<tr>
<td>EE 4706</td>
<td>Frequency Synthesizers</td>
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<tr>
<td>EE 4707</td>
<td>Digital Image Processing</td>
</tr>
<tr>
<td>EE 4708</td>
<td>Advanced Communication Theory</td>
</tr>
</tbody>
</table>

*Not for electrical engineering or computer engineering majors

*Oxford Study Abroad Program
### Fall 1999/Spring 2000 Graduate Courses

<table>
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<tr>
<th>Total Enrollment</th>
<th>Atlanta</th>
<th>Video</th>
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<td>Combinatorial Strategies for Engineers</td>
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<td>Advanced VLSI Systems</td>
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<td>Fundamentals of Radar Signal Processing</td>
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### Fall 1999/Spring 2000 Undergraduate Special Topics Offerings

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### Fall 1999/Spring 2000 Graduate Special Topics Offerings

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<td>ECE 8803c</td>
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Georgia Institute of Technology Dean’s Appreciation Award

The Dean’s Appreciation Award is a newly established honor that recognizes alumni who have made extraordinary contributions to the advancement of the College of Engineering. The first recipient of this award was Shirley C. Mewborn (BEE ’56), vice president of Southern Engineering Company in Atlanta, GA, and the first woman to graduate with an electrical engineering degree at Georgia Tech. She is an advisory board member for ECE and the College of Engineering, and she is a past member of the Institute’s National Advisory Board. Ms. Mewborn serves the Institute in other prominent positions such as chair of the board of trustees of the Georgia Tech Research Corporation and as a trustee of the Georgia Tech Foundation. She is past president of the Georgia Tech Alumni Association and a member of the Futurescape Speakers Bureau, an organization of women who visit schools and science expos to promote science and engineering.

Georgia Institute of Technology Wallace H. Coulter Award for Innovation and Entrepreneurship

The newly established Wallace H. Coulter Award for Innovation will be given on an annual basis. It recognizes those unique individuals with the potential to achieve the highest of engineering innovation, resulting in technological advances with practical application to the quality of human life and health. The award recipient demonstrates the vision, commitment, and passion necessary to take an invention from conception to application for the benefit of mankind, despite enormous odds.

Michael Wach (BEE ’83 and MSEE ’88) received the 1999 Coulter Award for his work as president at Visionex, Inc. Under his direction, Visionex developed and is commercializing a technology that employs optical fibers and microscopic light manipulations as a platform for highly integrated optics, which has been applied to a new generation of medical instruments to conduct sophisticated in-the-body tissue analyses. It is also being used in the telecommunications field for a cost-effective generation of dense wavelength division multiplexing systems that increase bandwidth. He was selected for the 1999 Georgia Trend “40 Under 40” list, which honors 40 industry leaders under 40 years of age, and he was inducted into the 1997 class of the Georgia Tech Council of Outstanding Young Engineering Alumni.

The following honors were awarded to ECE alumni at the College of Engineering Awards Ceremony, which was held in October 1999.

College of Engineering Hall of Fame

Membership in the College of Engineering Hall of Fame is reserved for individuals who have made sustained and meritorious engineering and/or managerial contributions during their careers. Two ECE alumni received this award.

Thomas B. Gurley, PE
District Manager-Real Estate & Construction (Retired)
AT&T
Atlanta, GA
B.E.E. 1959

Dayton B. “Bones” Howe
President
B.H. Productions, Inc.
Montecito, CA
B.E.E. 1956

Academy of Distinguished Engineering Alumni

The College awards membership in the Academy of Distinguished Engineering Alumni to persons whose contributions to Georgia Tech, the engineering profession and field, and/or society have brought distinction to themselves and to the Institute. Eight ECE alumni received this award.

Alex B. Best, Jr.
Executive Vice President, Engineering
Cox Communications
Atlanta, GA
BEE 1963, MSEE 1964

Thomas S. Blackstock, PE, MBA
Vice President, Manufacturing
Coca-Cola Fountain, Coca-Cola USA
The Coca-Cola Company
Atlanta, GA
BEE 1975

Jean Breedlove
Principal Director
Space-based Infrared Systems
Space-based Surveillance Division
The Aerospace Corporation
El Segundo, CA
BEE 1978, MSEE 1979

James F. Chen
Founder, V-O-N Corporation
CEO/Chair & Co-founder, DrFirst.com
Potomac, MD
BEE 1973

Frank B. Fortson, PE, MBA
President
SpatialAge Solutions
Atlanta, GA
BEE 1971

Robert M. Gemmell, MBA
Chair & CEO
Digital Wireless Corporation
Norcross, GA
BEE 1979, MSEE 1980

A. Eugene Sapp, Jr.
Chief Executive Officer
SCI Systems, Inc.
Huntsville, AL
BEE 1959

William H. Williams, Jr., MBA
President
BellSouth Information Systems
Atlanta, GA
BEE 1973

Council of Outstanding Young Engineering Alumni

Membership in the Council of Outstanding Young Engineering Alumni is bestowed upon alumni under 40 years of age who have demonstrated outstanding professional achievements. Two ECE alumni received this award.

Jefferson W. Hall
Design Engineering Manager
New Product Development
ON Semiconductor
Phoenix, AZ
BEE 1991, MSEE 1992

Scott N. Madigan
Vice President, Sales and Marketing
Future Networks, Inc.
Atlanta, GA
BEE 1979
During FY 2000, donors contributed $7,975,915 to ECE through the Georgia Tech Foundation. The first table shows the amount of funds designated for specific categories. The second table alphabetically lists the various constituencies and individuals that donated funds to ECE.

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<td><strong>Grand Total</strong></td>
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**Athletic Foundations & Organizations**
- Atlanta Falcons Football Club
- Bobby Dodd Charities Foundation, Inc.
- Bobby Dodd Coach of the Year Award
- Georgia Tech Athletic Association
- Ladies Professional Golf Association
- PGA Tour, Inc.
- The Touchdown Club of Atlanta

**Individuals**
- Mr. Ernest W. Accorsi, Jr.
- Mrs. Phyllis H. Adams
- Mr. William T. Andrade
- Mr. Gene Asher
- Mr. & Mrs. Antoine H. Ayoub
- Mr. Brian Banner
- Mr. Tommy W. Barnes
- Dr. Samuel C. Barnett
- Mr. Steve A. Barton
- Mr. Gregory A. Beck
- Mr. Ray M. Beck
- Ms. Heather S. Bellville
- Mr. Richard L. Bestwick
- Ms. Elizabeth T. Bisher
- Mr. James Furman Bisher
- Mr. Thomas J. Boyle
- Ms. Suzy Briggs
- Dr. Robert J. Butera, Jr.
- Mrs. Lynda D. Buescher
- Mr. W. Cothran Campbell
- Mr. James R. Carreker
- Mr. R.H. Carswell, Jr.
- Mr. Jim Clarkson
- Mr. J. Philip Cleaveland
- Mr. David A. Cleghorn
- Mr. & Mrs. Henry T. Collinsworth
- Mr. & Mrs. Lawrence D. Cook
- Mr. William L. Cooper
- Mr. Ralph H. Daily
- Mr. Clayton J. Davis
- Mr. Robert G. Dawson
- Ms. Louise P. Day
- Mr. Howard G. Dean, Jr.
- Mrs. Linda L. Dobbins

**Media Organizations**
- The Atlanta Journal/Constitution
- Turner Broadcasting System, Inc.

**Schools & Universities**
- Clay Elementary School
- Life University
- Morris Brown College

**Financial Institutions**
- Charter Bank

**Medical Offices**
- HL B Gross Collins, PC
- Phillip J. Ensen, M.D.
- R. Screven Farmer, M.D.
C. Dean Alford  
Chair, ECE Advisory Board  
President & CEO  
Allied Utility Network  
Conyers, GA

Antonio R. Alvarez  
Vice President, Research & Development  
Cypress Semiconductor  
San Jose, CA

Michael B. Bartlett  
Vice President, Display Solutions  
Business Unit  
Texas Instruments, Inc.  
Dallas, TX

Michael J. Buckler  
Director, OSBU Program & Process Management  
Lucent Technologies, Inc.  
Warren, NJ

James R. Carreker  
President & CEO  
Aspect Telecommunications  
San Jose, CA

Steve W. Chaddick  
Senior Vice President, Products & Technology  
Ciena Corporation  
Linthicum, MD

Michael A. Coleman  
CEO  
Coleman Technologies, Inc.  
Orlando, FL

H. Allen Ecker  
President, Subscriber Networks  
Scientific-Atlanta, Inc.  
Norcross, GA

R.M.G. Frame  
Vice President, Broadband Networks  
NorTel  
Alpharetta, GA

Scott Madigan  
Vice President, Sales and Marketing  
Future Networks  
Atlanta, GA

Michael R. McQuade  
Senior Research Associate  
E.I. DuPont de Nemours & Company  
Wilmington, DE

Shirley C. Mewborn  
Vice President  
Southern Engineering Company  
Atlanta, GA

Joe Neel  
Director, Planning & Strategy, Technology  
Development  
ON Semiconductor  
Phoenix, AZ

E. Jock Ochiltree  
President  
ShareWave, Inc.  
El Dorado Hills, CA

Randall E. Poliner  
President  
Anatares Corporation  
Melbourne, FL

John W. Pope  
Manager  
Southern Company Services  
Atlanta, GA

Richard A. Snelling  
Chair & CEO  
Home Wireless, Inc.  
Norcross, GA

C. Meade Sutterfield  
SSPCS Corporation  
Atlanta, GA

Mr. Roy L. Doyal, Jr.  
Mr. Thomas A. Edwards  
Mr. & Mrs. Saul Feldman  
Dr. James D. Foley  
Mrs. Pattie B. Frierson  
Dr. Thomas K. Gaylord  
Mr. Soumen Ghosh  
Mr. W.S. Griffin  
Mr. James K. Harper, Jr.  
Mr. Paul R. Haugen  
Mr. Bill F. Hensley  
Mr. Gerald N. Hill, Sr.  
Ms. Jane P. Hill  
Mr. Brenda M. Hiskey  
Mr. Edward G. Holmes  
Ms. Helen B. Loftin  
Mr. John Logue  
Ms. Judith Lorier  
Mr. Kenneth E. MacKenzie  
Mr. Lynn C. Maddox  
Dr. François J. Malassenet  
Mr. Philip J. Malonson  
Mr. Louis J. Martin, II  
Mr. Joseph E. Mayes, Jr.  
Mr. William Y. McCaslin, Jr.  
Mr. Wayne G. Melton  
Mr. Anne T. Minter  
Mr. M. George Mitchell, III  
Mr. Russell H. Mitchell  
Mr. A. Raymond Moore  
Mr. R. Scott Moore  
Mr. George A. Morris, Jr.  
Mr. Larry G. Nelson  
Mr. Joseph P. North  
Mrs. Nancy L. Nuckols  
Mr. Hugh P. Nunnally, Jr.  
Mrs. Eslie E. Paris  
Dr. John B. Peatman  
Dr. Andrew F. Peterson  
Mr. Thomas C. Place  
Mr. Edwin Pope  
Mr. & Mrs. Wayne Rand  
Mr. Carl J. Reith  
Mr. Jerry Rhea  
Mr. Curt Sampson  
Dr. William E. Soyle  
Ms. Frances Scovil  
Mr. Glenn R. Sheeley  
Mr. J. Harold Shepherd, Sr.  
Mr. Henry H. Smith  
Dr. Mark J.T. Smith  
Mr. Robert L. Steed  
Ms. Dodie Stockton  
Mr. Jon Tim Tucker  
Ms. Kristin Turgeon  
Mr. Harry L. Vann  
Mr. W. Ashley Verlander  
Col. Dewey W. Waddell  
Mrs. Lee Walburn  
Ms. Susannah S. Watson  
Dr. Roger P. Webb  
Mrs. Constance C. Welte  
Mr. Raymond Willoch

Mrs. Paulette R. Price  
Mr. Ralph W. Pries  
Mrs. Sheryl S. Prucka  
Dr. Hans B. Pütten  
Mr. & Mrs. Wayne Rand  
Mr. Carl J. Reith  
Mr. Jerry Rhea  
Mr. Curt Sampson  
Dr. William E. Soyle  
Ms. Frances Scovil  
Mr. Glenn R. Sheeley  
Mr. J. Harold Shepherd, Sr.  
Mr. Henry H. Smith  
Dr. Mark J.T. Smith  
Mr. Robert L. Steed  
Ms. Dodie Stockton  
Mr. Jon Tim Tucker  
Ms. Kristin Turgeon  
Mr. Harry L. Vann  
Mr. W. Ashley Verlander  
Col. Dewey W. Waddell  
Mrs. Lee Walburn  
Ms. Susannah S. Watson  
Dr. Roger P. Webb  
Mrs. Constance C. Welte  
Mr. Raymond Willoch
## Financial Summary (FY 2000 Initial Allocation)

### STATE

<table>
<thead>
<tr>
<th>Personnel Services</th>
<th>Instruction</th>
<th>General Research</th>
<th>Indirect Research</th>
<th>Total State</th>
<th>SPONSORED</th>
</tr>
</thead>
<tbody>
<tr>
<td>Regular Faculty</td>
<td>$4,280,163</td>
<td>$1,617,369</td>
<td>$170,515</td>
<td>$6,086,047</td>
<td>$3,899,197</td>
</tr>
<tr>
<td>Part-time Faculty</td>
<td>140,000</td>
<td>0</td>
<td>0</td>
<td>140,000</td>
<td>0</td>
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<tr>
<td>Summer Faculty</td>
<td>300,000</td>
<td>45,000</td>
<td>0</td>
<td>345,000</td>
<td>285,000</td>
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<tr>
<td>Graduate Assistants</td>
<td>956,664</td>
<td>175,000</td>
<td>0</td>
<td>1,133,664</td>
<td>3,950,000</td>
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<tr>
<td>Misc. Professional</td>
<td>60,000</td>
<td>0</td>
<td>0</td>
<td>60,000</td>
<td>15,000</td>
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<tr>
<td>Administrative</td>
<td>1,714,056</td>
<td>377,282</td>
<td>715,436</td>
<td>2,806,774</td>
<td>1,390,415</td>
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<tr>
<td><strong>Total Academic</strong></td>
<td>$7,452,883</td>
<td>$2,214,651</td>
<td>$883,951</td>
<td>$10,353,485</td>
<td>$9,539,612</td>
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<tr>
<td>Staff</td>
<td>$153,980</td>
<td>0</td>
<td>0</td>
<td>$153,980</td>
<td>$242,043</td>
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<tr>
<td>Student Assistants</td>
<td>75,000</td>
<td>0</td>
<td>0</td>
<td>75,000</td>
<td>135,000</td>
</tr>
<tr>
<td>Misc. Non-Professional</td>
<td>10,000</td>
<td>0</td>
<td>0</td>
<td>10,000</td>
<td>56,500</td>
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<tr>
<td><strong>Total Non-Academic</strong></td>
<td>$238,980</td>
<td>$0</td>
<td>$0</td>
<td>$238,980</td>
<td>$433,543</td>
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<tr>
<td><strong>Total Pers. Svcs.</strong></td>
<td>$7,691,863</td>
<td>$2,214,651</td>
<td>$883,951</td>
<td>$10,792,465</td>
<td>$9,973,155</td>
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</tbody>
</table>

**Direct expenditures**  
All figures exclude overhead charges

### NON-PERSONAL SERVICES

<table>
<thead>
<tr>
<th>Expenditure</th>
<th>FY 99</th>
<th>FY 2000</th>
</tr>
</thead>
<tbody>
<tr>
<td>Travel</td>
<td>$20,000</td>
<td>$40,000</td>
</tr>
<tr>
<td>Operating Supplies</td>
<td>341,273</td>
<td>161,262</td>
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<tr>
<td>Equipment</td>
<td>0</td>
<td>0</td>
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<tr>
<td><strong>Total Non-Pers. Svcs.</strong></td>
<td>$361,273</td>
<td>$201,262</td>
</tr>
<tr>
<td><strong>GRAND TOTAL</strong></td>
<td>$8,053,136</td>
<td>$1,087,213</td>
</tr>
</tbody>
</table>

*Excludes fringe benefits  
All figures exclude overhead charges

### Expenditure Summary

#### STATE EXPENDITURES

<table>
<thead>
<tr>
<th>FY 99</th>
<th>FY 2000</th>
</tr>
</thead>
<tbody>
<tr>
<td>Instruction</td>
<td>$9,648,067</td>
</tr>
<tr>
<td>General Research</td>
<td>3,210,062</td>
</tr>
<tr>
<td>Indirect Research</td>
<td>1,450,759</td>
</tr>
<tr>
<td><strong>Total Direct State</strong></td>
<td>$14,308,888</td>
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<tr>
<td>Fringe Benefits</td>
<td>$2,638,647</td>
</tr>
<tr>
<td><strong>Total State</strong></td>
<td>$16,947,535</td>
</tr>
</tbody>
</table>

#### SPONSORED SUPPORT–INSTRUCTION

<table>
<thead>
<tr>
<th>FY 99</th>
<th>FY 2000</th>
</tr>
</thead>
<tbody>
<tr>
<td>Federal</td>
<td>$69,732</td>
</tr>
<tr>
<td>Industry</td>
<td>1,965,693</td>
</tr>
<tr>
<td>Other</td>
<td>281,243</td>
</tr>
<tr>
<td><strong>Total Sponsored Instruction</strong></td>
<td>$2,316,668</td>
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</table>

#### SPONSORED SUPPORT–RESEARCH

<table>
<thead>
<tr>
<th>FY 99</th>
<th>FY 2000</th>
</tr>
</thead>
<tbody>
<tr>
<td>Federal</td>
<td>$7,270,347</td>
</tr>
<tr>
<td>State</td>
<td>137,050</td>
</tr>
<tr>
<td>Industry</td>
<td>4,975,000</td>
</tr>
<tr>
<td>Other</td>
<td>77,570</td>
</tr>
<tr>
<td><strong>Total Sponsored Research</strong></td>
<td>$12,459,967</td>
</tr>
<tr>
<td>Fringe Benefits</td>
<td>$1,174,533</td>
</tr>
<tr>
<td><strong>Total Sponsored</strong></td>
<td>$13,634,500</td>
</tr>
</tbody>
</table>

**Total Expenditures**  
All figures exclude overhead charges

#### RESEARCH FUNDING

ECE faculty members amassed a record breaking $26,438,072 in research grants and contracts during the last fiscal year. This total represents 35 percent of the research funding in the College of Engineering and 11 percent of the entire Institute’s.

**Awards**

- **Industry** 46%
- **Other** 3%
- **NSF** 20%
- **DoD** 22%

**Proposals**

- **NSF** 38%
- **DoD** 32%
- **Other Federal** 10%
- **Other** 9%
- **Industry** 11%
404.894.2901  ECE Main Office
404.894.4641  ECE Main Office Fax
404.894.2902  Chair, Roger P. Webb
404.894.4468  Administrative Manager I/Assistant to the Chair, LaJauna F. Ennis
404.894.2911  Vice Chair for Operations and Faculty Development, J. Alvin Connelly
404.894.2903  Vice Chair for Graduate Affairs, David R. Hertling
404.894.2930  Vice Chair for Computer Engineering and Program Development, Joseph L.A. Hughes
404.894.2927  Vice Chair for External Affairs, Hans B. Pütten
404.894.4740  Vice Chair for Undergraduate Affairs, William E. Sayle
404.894.2946  Undergraduate Advising, MaryJo Davis
404.894.2946  Undergraduate Advising, Claudia Ford
404.894.2983  Graduate Advising, Marilouise Mycko
404.894.2905  Assistant to the Chair for Computer Support, David S. Webb
404.894.4733  Director for Operations, Joseph F. Jackson
404.894.3058  Director of Computer Enhanced Education, Lonnie D. Harvel
404.894.4769  Accounting, Sharon Crouch
404.894.4025  Development-Corporate, Harry L. Vann
404.894.5210  Development-Alumni, Suzy Briggs
404.894.7574  Human Resources, Lynda D. Buescher
404.894.2906  Public Relations, Jacqueline L. Nemeth

School of Electrical and Computer Engineering
777 Atlantic Drive, N.W.
Atlanta, Georgia 30332-0250

Email: info@ece.gatech.edu

www.ece.gatech.edu