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School of Electrical and Computer Engineering Contact Information

404.894.2901 ECE Main Office
404.894.2902 Chair, Roger P. Webb
404.894.4468 Administrative Manager I/Assistant to the Chair, LaJauna F. Ennis
404.894.2911 Operations and Faculty Development, Associate Chairs
404.894.2904 Graduate Affairs, David R. Hertling
404.894.2930 Computer Engineering and Program Development, Joseph L.A. Hughes
404.894.2927 External Affairs, Hans B. Pütten
404.894.4740 Undergraduate Affairs, William E. Sayle

404.894.2946 Undergraduate Advising, MaryJo Davis
404.894.2983 Graduate Advising, Marlousie Mycko
404.894.2905 Assistant to the Chair for Computer Support, David S. Webb
404.894.4733 Director-Operations, Joseph F. Jackson
404.894.3058 Director of Computer Enhanced Educational Services, Lonnie D. Harvel
404.894.4769 Accounting, Sharon Austin Crouch
404.894.4025 Development-Corporate, Harry L. Vann
404.894.5210 Development-Alumni, Suzy Briggs
404.894.7574 Human Resources, Lynda Buescher
404.894.2906 Public Relations, Jacqueline L. Nemeth
## ECE Facts

### Number of Faculty/Staff
- Tenure-track Faculty: 89
- Joint appointments: 2
- Adjunct and part-time faculty: 26
- Professors Emeriti: 13
- Research and administrative staff: 141

### Number of Undergraduate Students (Fall Quarter 1998)
- Electrical engineering: 1,004
- Computer engineering: 759
- Total: 1,763

### Number of Graduate Students (Fall Quarter 1998)*
- Doctoral: 405
- Special: 6
- Master of Science/M.S.E.C.E.: 334
- Total: 745

### Number of Degrees Awarded
- B.E.E.: 235
- B.Cmp.E.: 106
- M.S.: 61
- M.S.E.C.E.: 106
- Ph.D.: 58
- Total: 566

### Grants and Contracts
- Total funds received on external grants during FY 99: $19,740,597
- Number of proposals submitted to external agencies during FY 99: 213

### Expenditure Summary
- State support: $16,930,302
- Sponsored instruction support**: $2,333,957
- Sponsored research support**: $12,459,967
- Total expenditures: $32,898,759

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*Graduate program offers combined electrical and computer engineering degrees  
**Direct expenditures
ECE Highlights

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, generating innovative research programs, and providing first rate, varied educational programs to our students is reflected in the following highlights for 1998-99.

**Major Faculty and Staff Honors**

**Thomas P. Barnwell, III** received the Georgia Tech Outstanding Innovative Use of Education Technology Award.

**Kevin F. Brennan** received a Caltech President’s Fund Award “for the most outstanding proposal that fosters progressive and mutually beneficial relationships between faculties and students of the university community and the scientists and engineers on the staff of the Jet Propulsion Laboratory.” Dr. Brennan is the only award recipient who is not a member of the Caltech faculty.

**April S. Brown** was named associate dean of the College of Engineering.

**W. Russell Callen, Jr.** received the Richard M. Bass-Eta Kappa Nu Outstanding Teacher Award, which is decided by a majority vote of the senior class. Dr. Callen was the College of Engineering recipient of the Order of Omega Faculty Award; the Order of Omega is an honor society that recognizes outstanding leadership from individuals within the fraternity and sorority community at Georgia Tech.

**Elias N. Glytsis** was named as a Fellow of the Optical Society of America (OSA) “for contributions to diffractive optics analysis and quantum electron-wave devices.” ECE now has five OSA Fellows.

**Ronald G. Harley** was named the Duke Power Company Distinguished Professor.

**David R. Hertling** was named ECE’s associate chair for graduate affairs after **Dale C. Ray** retired from the position after 20 years of service.

**Nikil S. Jayant** was named the John Pippin Chair in Wireless Systems and a Georgia Research Alliance (GRA) Eminent Scholar. Dr. Jayant also serves as director of the Georgia Tech Wireless Institute (GTWI) and the Broadband Telecommunications Center (BTC), both of which are ECE-affiliated organizations.

**Gary S. May** received the Georgia Tech Outstanding Service Award for his contributions to the Institute, ECE, the engineering profession, and the Atlanta community.

**James D. Meindl** received the 1999 Semiconductor Industry Association University Researcher Award for his lifetime contributions to university research programs in semiconductor technology.

**Hans B. Püttgen** was promoted to president of Georgia Tech Lorraine (GTL), while **François J. Malassenet** was named GTL’s directeur.

**Glenn S. Smith** was named the John Pippin Chair in Electromagnetics.

**Gordon L. Stüber** was named as a Fellow of the Institute of Electrical and Electronics Engineers (IEEE) “for contributions to mobile radio and spread spectrum communications.” ECE had 26 active IEEE Fellows in 1998-99.
Research and Educational Milestones

1998-99 GRANTS AND CONTRACTS ECE faculty amassed a record $19,740,597 in research grants and contracts in the last fiscal year. This total represents 34 percent of the research funding in the College of Engineering and 9 percent of the entire Institute’s.

U.S. NEWS AND WORLD REPORT RANKINGS During the last year, U.S. News and World Report ranked the School’s graduate electrical engineering program seventh in the nation, its highest ranking to date.

INTELLECTUAL PRODUCTS During the period March 1998-March 1999, faculty, in conjunction with their graduate students and peers, produced 118 journal publications, 222 conference presentations, eight books, and eight patents.

GRADUATION RATES The computer engineering program continues its steady growth, with the School awarding 106 bachelor of computer engineering degrees during FY 99. In addition, ECE awarded 235 bachelor of electrical engineering degrees, 61 master of science degrees, 106 master of science in electrical and computer engineering degrees, and 58 doctorates.

SEMESTER CONVERSION Georgia Tech will convert to the semester calendar effective with the 1999-2000 academic year. Under the semester curriculum, both the bachelor of science in electrical engineering and the bachelor of science in computer engineering programs will require 132 hours of course work; the M.S.E.C.E. degrees will require 30 semester hours. Further information, including degree requirements, eight-semester schedules, detailed descriptions of semester courses, and transitional advising for current students, may be found on the World Wide Web at http://www.ece.gatech.edu/academic/.

FOCUS CENTER RESEARCH PROGRAM The U.S. semiconductor industry awarded a Focus Center Research Program to Georgia Tech’s Microelectronics Research Center in the area of improving microchip performance. Georgia Tech leads a six-university consortium that will receive up to $19.5 million over the next three years to conduct research leading to radically new architectures for the multilevel wiring networks connecting billions of transistors on future microchips. Funds allocated for the Center and its participating universities will provide salaries for students and staff, along with equipment and upgraded facilities.

DSP LEADERSHIP UNIVERSITY PROGRAM Georgia Tech was selected to participate in the Texas Instruments (TI) DSP Leadership Universities Program, a collaborative university network to pioneer advanced digital signal processing (DSP) research. TI named Georgia Tech, Rice University, and the Massachusetts Institute of Technology as the program’s inaugural members, with each institution receiving a three-year, $1 million grant for research funding. The Georgia Tech program, led by Ronald W. Schafer, focuses on wireless multimedia communications, robustness of automatic speech recognition systems, automated analysis of video signals, high quality speech coding for Internet voice communication, and compressed domain processing of audio signals. TI will also help to support audio/video innovations for conference facilities and classrooms, specifically automatic audio/visual speaker tracking and storage and retrieval of speech and audio.

ON SEMICONDUCTOR ON Semiconductor, formerly a division of Motorola, has provided $1.5 million to endow the ON Semiconductor Professorship in Analog Integrated Circuit Design and the ON Semiconductor Graduate Fellows program. In order to strengthen the analog programs, the endowment will be used to support two junior faculty members for three years each and then the endowment will support a senior endowed chair.

YAMACRAW MISSION ECE is playing a major role in the Yamacraw Mission—a combined effort to foster development of high-bandwidth communications businesses by the University System of Georgia; the Georgia Department of Industry, Trade, and Tourism (GDITT); and the Georgia Research Alliance (GRA). Several ECE faculty members are leading key areas of interest, including Vijay Madisetti (embedded software), Joy Laskar (broadband access hardware), and Nikil Jayant (system prototyping). Nine ECE-affiliated centers, consortia, and institutes also offer expertise in optical networks, high-speed access devices, and content processing.

GEORGIA TECH WIRELESS INSTITUTE/BROADBAND TELECOMMUNICATIONS CENTER The GTWI held its second and third industrial meetings in November 1998 and May 1999, respectively. The November symposium was held in conjunction with the International Mobile Telephone Symposium and the Digital Signal Processing Colloquium. Plans are underway to merge GTWI and BTC to create the Georgia Tech Broadband Institute for research and industry partnership in seamless communications. Nikil Jayant serves as director of both organizations.
GEORGIA TECH REGIONAL ENGINEERING PROGRAM The College of Engineering launched the Georgia Tech Regional Engineering Program (GTREP) in southeastern Georgia at the beginning of fall 1999. Participating universities are Georgia Southern University, Savannah State University, Armstrong Atlantic State University, and the Skidaway Institute. Two undergraduate degree programs are offered: one in computer engineering, led by Acting Program Coordinator Joseph L.A. Hughes, associate professor and associate chair in ECE, and the other in civil engineering. Master’s degree offerings in Georgia Tech’s distance learning program will also be expanded to complement these GTREP undergraduate degree options.

NEETRAC ISO CERTIFICATION The National Electric Energy Testing, Research, and Applications Center (NEETRAC) is the first and only research organization associated with a university that has received International Standards Organization (ISO) certification in accordance with ISO 9001, which is the most stringent of the 9000 series of standards. The ISO 9000 family of standards represents an international consensus on good management practices with the aim of ensuring that the organization can consistently deliver the product or services that meet the client’s quality requirements.

BROWN NAMED ASSOCIATE DEAN April S. Brown was appointed as associate dean of the College of Engineering, effective April 1999. In this position, Dr. Brown focuses on faculty development programs and implementation of strategic initiatives for the College. Her appointment in the Dean’s Office is on a half-time basis, so that she is able to continue her research and educational activities.

RAY RETIREMENT After 33 years of service, Dale C. Ray retired from ECE. During his 20 years as associate chair for graduate affairs, graduate student enrollment more than tripled from 223 in fall 1979 to 745 in fall 1999.

HERTLING NAMED ASSOCIATE CHAIR David R. Hertling became ECE’s new associate chair for graduate affairs, effective February 1999, after the retirement of Dale C. Ray. During his 21-year career at Tech, Dr. Hertling has been commended for outstanding teaching and his participation in the continuing education program, where he teaches RF, wireless engineering, and electronics.

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 will be involved in systems and controls, computer engineering, and bioengineering.

DUKE POWER CHAIR NAMED Ronald G. Harley was named the Duke Power Company Distinguished Professor. Dr. Harley’s appointment will provide more opportunities for the electric utility industry to participate in ECE’s educational and research activities.

PIPPIN CHAIR APPOINTMENTS Nikil S. Jayant was named as the John Pippin Chair in Wireless Systems and GRA Eminent Scholar, and Glenn S. Smith was named as John Pippin Chair in Electromagnetics. Previously, Dr. Jayant was the multimedia director at Bell Labs in Murray Hill, N.J. Dr. Smith, an ECE faculty member since 1975, also serves as a Regents’ Professor and as chair of the School’s electromagnetics technical interest group.

FACULTY PROMOTIONS Effective July 1, 1998, Sudhakar Yalamachili was promoted to professor and John R. Barry and Joy Laskar were promoted to associate professor with tenure. Promotions effective July 1, 1999 include Mark G. Allen, Nan Marie Jokerst, Vijay K. Madisetti, and Andrew F. Peterson to professor; April S. Brown to professor with tenure; John A. Copeland and David C. Keezer, tenure; and Abhijit Chatterjee and Steven W. McLaughlin to associate professor with tenure.

DEVELOPMENT ACTIVITIES During April 1999, eight members and spouses of ECE’s advisory board, along with Georgia Tech officials and staff, convened their semiannual meeting at Georgia Tech Lorraine. The Board’s purpose was to see the Lorraine campus; meet the new leadership; talk with faculty, students, and staff; discuss economic development with local and regional officials; and assess the progress and direction of Tech’s first international outpost. Also in April 1999, the external affairs office hosted a successful ECE Career Day on April 8, 1999, with the following companies participating: Anadrill-Schlumberger, Nortel Networks, Altera Corporation, Lockheed-Martin, Melita International, Southern California Edison, Raytheon Systems, Texas Instruments, and Colonial Pipeline.
Faculty

Five new faculty members joined ECE, while three retired, two resigned, and two died. The total number of faculty members employed during fiscal year 1998-99 was 89.

Vincent J. Mooney, III and Chai-Keong Toh joined the School as assistant professors in the areas of computer engineering and telecommunications, respectively, in fall 1998, and Robert J. Butera joined the bioengineering, computer engineering, and electronic design and applications areas in June 1999. Nikil S. Jayant was appointed as the John Pippin Chair in Wireless Systems and GRA Eminent Scholar in July 1998, and Ronald G. Harley was named the Duke Power Company Distinguished Professor in February 1999.

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


Eighty-three percent of the ECE faculty is tenured, with all members holding doctorates. The list of faculty in this section includes all faculty employed during FY 99.

Academic Faculty

Regents’ Professors

Thomas K. Gaylord, Julius Brown Chair Professor, Ph.D., Rice University
Russell M. Mersereau, Sc.D., Massachusetts Institute of Technology
Ajeet Rohatgi, Georgia Power Distinguished Professor and Director of the University Center of Excellence for Photovoltaics Research and Education, Ph.D., Lehigh University
Ronald W. Schafer, Institute Professor, Ph.D., Massachusetts Institute of Technology
Glenn S. Smith, John Pippin Chair in Electromagnetics, Ph.D., Harvard University

Professors

Ian F. Akyildiz, Ph.D., University of Erlangen
Phillip E. Allen, Schlumberger Chair Professor in Microelectronics, Ph.D., University of Kansas
Thomas P. Barnwell, III, Ph.D., Massachusetts Institute of Technology
Kevin F. Brennan, Ph.D., University of Illinois at Urbana-Champaign
Mark A. Clements, Sc.D., Massachusetts Institute of Technology
J. Alvin Connelly, Associate Chair for Operations and Faculty Development, Ph.D., University of Tennessee
John A. Copeland, John H. Weitnauer, Jr. Technology Transfer Chair, GRA Eminent Scholar, and Vice President for Research and Member of the Board of Directors for the Georgia Center for Advanced Telecommunications Technology (GCATT), Ph.D., Georgia Institute of Technology
John F. Dorsey, Ph.D., Michigan State University
Robert K. Feeney, Ph.D., Georgia Institute of Technology
Ronald G. Harley, Duke Power Company Distinguished Professor, Ph.D., London University
Monson H. Hayes, III, Sc.D., Massachusetts Institute of Technology
David R. Hertling, Associate Chair for Graduate Affairs, Ph.D., University of Illinois at Urbana-Champaign
Richard J. Higgins, Ph.D., Massachusetts Institute of Technology
William D. Hunt, Ph.D., University of Illinois at Urbana-Champaign
Nikil S. Jayant, John Pippin Chair in Wireless Systems and GRA Eminent Scholar, Director of the Georgia Tech Broadband Institute; Ph.D., Indian Institute of Science, Bangalore
Edward W. Kamen, Julian T. Hightower Chair Professor in Manufacturing Engineering and Associate Director of the Manufacturing Research Center, Ph.D., Stanford University
Richard P. Kenan, Ph.D., Ohio State University
W. Marshall Leach, Jr., Ph.D., Georgia Institute of Technology
James H. McClellan, Ph.D., Rice University
James D. Meindl, Joseph M. Pettit Chair in Microelectronics and Director of the Microelectronics Research Center, Ph.D., Carnegie-Mellon University
A.P. Sakis Meliopoulos, Ph.D., Georgia Institute of Technology

Demetrius T. Paris, Ph.D., Georgia Institute of Technology
John B. Peatman, Ph.D., Case Western Reserve University
Hans B. Pütten; Associate Chair for External Affairs, President of Georgia Tech Lorraine, and Director of the National Electric Energy Testing, Research, and Applications Center; Ph.D., University of Florida
Dale C. Ray, Associate Chair for Graduate Affairs, Ph.D., University of Michigan
William T. Rhodes, Director of the Center for Optical Science and Engineering and Research Director of Georgia Tech Lorraine, Ph.D., Stanford University
William E. Sayle, Associate Chair for Undergraduate Affairs, Ph.D., University of Washington
Jay H. Schlag, Ph.D., Georgia Institute of Technology
Mark J.T. Smith, Special Assistant to Georgia Tech President G. Wayne Clough, Ph.D., Georgia Institute of Technology
Paul G. Steffes, Ph.D., Stanford University
Gordon L. Stüber, Ph.D., University of Waterloo
Rao R. Tummala; Director of the Packaging Research Center, Joseph M. Pettit Chair in Electronics Packaging, and GRA Eminent Scholar; Ph.D., University of Illinois at Urbana-Champaign
John P. Uyemura, Ph.D., University of California at Berkeley
George J. Vachtsevanos, Ph.D., The City University of New York
Carl M. Verber, Byers Eminent Scholar Professor, Ph.D., University of Colorado
Erik I. Verriest, Ph.D., Stanford University
Roger P. Webb, School Chair and Georgia Power Distinguished Professor, Ph.D., Georgia Institute of Technology
Sudhakar Yalamanchili, Ph.D., University of Texas at Austin

Associate Professors

Mark G. Allen, Ph.D., Massachusetts Institute of Technology
John R. Barry, Ph.D., University of California at Berkeley
Richard M. Bass, Ph.D., University of Illinois at Urbana-Champaign
Miroslav M. Begovic, Ph.D., Virginia Polytechnic Institute and State University
Paul J. Benkeser, Ph.D., University of Illinois at Urbana-Champaign
Martin A. Brooke, Ph.D., University of Southern California
April S. Brown, Associate Dean of the College of Engineering, Ph.D., Cornell University

John A. Buck, Ph.D., University of California at Berkeley

W. Russell Callen, Jr., Ph.D., Stanford University

Stephen P. DeWeerth, Ph.D., California Institute of Technology

Timothy J. Drabik, Ph.D., Georgia Institute of Technology

K.-H. Michael Fan, Ph.D., University of Maryland

Elias N. Glytsis, Ph.D., Georgia Institute of Technology

Thomas G. Habetler, Ph.D., University of Wisconsin at Madison

James O. Hamblen, Ph.D., Georgia Institute of Technology

Bonnie S. Heck, Ph.D., Georgia Institute of Technology

Joseph L.A. Hughes, Associate Chair for Computer Engineering and Program Development, Ph.D., Stanford University

Mary Ann Ingram, Ph.D., Georgia Institute of Technology

Nan Marie Jokerst, Ph.D., University of Southern California

David C. Kecez, Ph.D., Carnegie-Mellon University

Arthur Koblasz, Ph.D., California Institute of Technology

Joy Laskar, Ph.D., University of Illinois at Urbana-Champaign

Vijay K. Madisetti, Ph.D., University of California at Berkeley

Gary S. May, Ph.D., University of California at Berkeley

Mohamed F. Moad, Ph.D., Georgia Institute of Technology

Henry L. Owen, Ph.D., Georgia Institute of Technology

Andrew F. Peterson, Ph.D., University of Illinois at Urbana-Champaign

Stephen E. Ralph, Ph.D., Cornell University

David E. Schimmel, Ph.D., Cornell University

Waymond R. Scott, Jr., Ph.D., Georgia Institute of Technology

Madhavan Swaminathan, Ph.D., Syracuse University

David G. Taylor, Ph.D., University of Illinois at Urbana-Champaign

Yorai Y. Wardi, Ph.D., University of California at Berkeley

Douglas B. Williams, Ph.D., Rice University

D. Scott Wills, Sc.D., Massachusetts Institute of Technology

Serena M. Zabin, Ph.D., University of Illinois at Urbana-Champaign

Assistant Professors

Robert J. Butera, Jr., Ph.D., Rice University

Abhijit Chatterjee, Ph.D., University of Illinois at Urbana-Champaign

David R. DeBoer, Ph.D., Georgia Institute of Technology

Paul E. Hasler, Ph.D., California Institute of Technology

Steven W. McLaughlin, Ph.D., University of Michigan

Vincent J. Mooney, III, Ph.D., Stanford University

Emmanouil M. Tentzeris, Ph.D., University of Michigan

Chai-Keong Toh, D. Phil., University of Cambridge

Linda M. Wills, Ph.D., Massachusetts Institute of Technology

G. Tong Zhou, Ph.D., University of Virginia

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


Richard P. Kenan, 1986-99

Dale C. Ray, 1966-99

George P. Rodrigue, 1966-96

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

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

Joint Faculty Appointments

William L. Ditto, Associate Professor, School of Physics

John Limb, GRA Eminent Scholar in Advanced Telecommunications, College of Computing, and Vice President of Research in GCATT
Adjunct and Part-time Appointments

Giorgio Casinovi, Georgia Tech Research Institute
Marvin Cohen, Georgia Tech Research Institute
Jim D. Echard, Georgia Tech Research Institute
Robert Eisner, Emory University
Caitlin Flowers, Georgia Tech Research Institute
Bryan George, Texas Instruments
Gary G. Gimnestad, Georgia Tech Research Institute
Nile F. Hartman, Georgia Tech Research Institute
Bruce Harvey, Georgia Tech Research Institute
William A. Holm, Georgia Tech Research Institute
Morris Kesler, Georgia Tech Research Institute
Fred Kitson, Hewlett-Packard
Robert McNally, Cryolife, Inc.
Ramin Murenzi, Clark Atlanta University
William R. Owens, Georgia Tech Research Institute
Serge Perrine, Georgia Tech Lorraine
Jean-Marie Proth, INRIA-Metz
Edward K. Reedy, Georgia Tech Research Institute
Robert W. Rice, Georgia Tech Research Institute
Mark A. Richards, Georgia Tech Research Institute
Craig Richardson, Atlanta Signal Processors, Inc.
John Searle, Medical College of Georgia
Jeffrey J. Sitterle, Georgia Tech Research Institute
Stephen B. Wicker, Cornell University
Christopher Summers, Georgia Tech Research Institute

Faculty Service on Institute Governing Bodies and Committees

Executive Board
Richard M. Bass
W. Russell Callen, Jr.
William E. Sayle

Academic Senate
W. Russell Callen, Jr.
Elias N. Glytsis
Joseph L.A. Hughes
William E. Sayle
Yorai Y. Wardi

General Faculty Assembly
April S. Brown
W. Russell Callen, Jr.
Elias N. Glytsis
Joseph L.A. Hughes
William E. Sayle
Yorai Y. Wardi

IN REMEMBRANCE OF RICHARD M. BASS

ECE and Georgia Tech lost an excellent teacher and a true friend when Richard M. Bass, ECE associate professor, was killed in a car accident on April 14, 1999. A member of the National Society of Professional Engineers and a senior member of IEEE, Dr. Bass was founding chair of the Atlanta chapter of the IEEE Power Electronics Society and taught power electronics continuing education courses.

Known for his exceptional teaching, Dr. Bass was a leader in computer-enhanced education. In 1993, he received the Outstanding EE Teacher of the Year Award, which is decided by the School’s senior class majority vote. In remembrance of Dr. Bass, this honor has been renamed the Richard M. Bass-Eta Kappa Nu Outstanding Teacher Award; ECE will eventually seek endowment of the award.
Technical Interest Areas

Bioengineering
Mark G. Allen
Mark A. Clements
William L. Ditto**
Arthur Kohlrausch*
Erik I. Verriest
Paul Benkeser
Stephen P. DeWeerth
William D. Hunt
George J. Vachtsevanos
G. Tong Zhou

Computer Engineering
Ian F. Akyildiz
Abhijit Chatterjee
James O. Hamblen
Nikil S. Jayant
Vincent J. Mooney, III
John B. Peatman
Jay H. Schlag
Madhavan Swaminathan
D. Scott Wills
Sudhakar Yalamanchili
Thomas P. Barnwell, III
Stephen P. DeWeerth
Joseph L.A. Hughes
David C. Keezer
James H. McClellan
Henry L. Owen
David E. Schimmel*
Gordon L. Stüber
Rao R. Tummala
Linda M. Wills

Digital Signal Processing
Thomas P. Barnwell, III
Monson H. Hayes, III
Petros Maragos
Russell M. Mersereau
Mark J.T. Smith
G. Tong Zhou
Mark A. Clements*
Vijay K. Madisetti
James H. McClellan
Ronald W. Schafer
Douglas B. Williams

Electric Power
Richard M. Bass
Thomas G. Habetler
A.P. Sakis Meliopoulos
Ajeet Rohatgi
David G. Taylor
Roger F. Webb
Miroslav M. Begovic
Ronald G. Harley
Hans B. Pütterg
William E. Sayle
George J. Vachtsevanos

Electromagnetics
John A. Buck
Thomas K. Gaylord
Richard P. Kenan
W. Marshall Leach, Jr.
Andrew F. Peterson
Waymond R. Scott, Jr.
Paul G. Steffes
Emmanouil M. Tentzeris
David R. DeBoer
Elias N. Glytsis
Joy Laskar
Demetrius T. Paris
Stephen E. Ralph
Glenn S. Smith*
Madhavan Swaminathan

Electronic Design and Applications
Phillip E. Allen
Paul J. Benkeser
J. Alvin Connelly
Robert K. Feeney
David R. Hertling
W. Marshall Leach, Jr.
William E. Sayle
Richard M. Bass
Martin A. Brooke
Stephen P. DeWeerth
Paul E. Hasler
Joy Laskar
Dale C. Ray
John F. Dorsey

Microelectronics
Mark G. Allen
Martin A. Brooke
J. Alvin Connelly
Robert K. Feeney
Elias N. Glytsis
Richard J. Higgins
William D. Hunt*
David C. Keezer
Joy Laskar
Gary S. May
Stephen E. Ralph
Ajeet Rohatgi
Jay H. Schlag
John P. Uyemura
Kevin F. Brennan
April S. Brown
Timothy J. Drabik
Thomas K. Gaylord
David R. Hertling
Joseph L.A. Hughes
Nan Marie Jokster
Richard P. Kenan
W. Marshall Leach, Jr.
James D. Meinell
Dale C. Ray
William E. Sayle
Rao R. Tummala
Carl M. Verber

Optics and Photonics
Kevin F. Brennan
Ian F. Akyildiz*
John A. Buck*
Timothy J. Drabik
Elias N. Glytsis
William D. Hunt*
Nan Marie Jokster
Chin-Tau Lea
William T. Rhodes
Glenn S. Smith
Erik I. Verriest
April S. Brown
W. Russell Callen, Jr.
Thomas K. Gaylord
Richard J. Higgins
Mary Ann Ingram
Richard P. Kenan
Stephen E. Ralph
Ajeet Rohatgi
Carl M. Verber

Systems and Controls
Richard M. Bass
K.-H. Michael Fan
Edward W. Kamen
Richard R. Bennett
A.P. Sakis Meliopoulos
David G. Taylor
Erik I. Verriest
John F. Dorsey
Bonnie S. Heck
Gary S. May
Mohamed F. Moaz
George J. Vachtsevanos
Yorai Y. Wardi*

Telecommunications
Ian F. Akyildiz*
Martin A. Brooke
Joseph L.A. Hughes
Nikil S. Jayant
Chin-Tau Lea
Petros Maragos
Henry L. Owen
Paul G. Steffes
Chai-Keong Toh
Erik I. Verriest
Douglas B. Williams
John R. Barry
John A. Copeland
Mary Ann Ingram
Richard P. Kenan
John O. Limb**
Steven W. McLaughlin
Ronald W. Schafer
Gordon L. Stüber
Carl M. Verber
Yorai Y. Wardi
Serena M. Zabin

*Area chair
**Joint appointment
Standing Committees

Computer Resources
Abhijit Chatterjee
Lonnie D. Harvel
William D. Hunt
David S. Webb
D. Scott Wills
Stephen P. DeWeerth*
Bonnie S. Heck
David E. Schimmel
Douglas B. Williams

Continuing Education
Thomas P. Barnwell, III
Monson H. Hayes, III
Vijay K. Madisetti
John B. Peatman
David G. Taylor
Thomas G. Habetler
David R. Hertling*
A.P. Sakis Meliopoulos
Hans B. Püttgen

Faculty Honors
Ian F. Akyildiz
William T. Rhodes
Jay H. Schlag
Gordon L. Stüber
J. Alvin Connelly
Ajeet Rohatgi
Paul G. Steffes
Rao R. Tummala*

Faculty Recruitment
Mark G. Allen
Mary Ann Ingram
Ronald W. Schafer
Thomas K. Gaylord
Henry L. Owen
Roger P. Webb*

Graduate
Phillip E. Allen
April S. Brown
Edward W. Kamen
Andrew F. Peterson*
Dale C. Ray
Miroslav M. Begovic
Joseph L.A. Hughes
Russell M. Mersereau
Hans B. Püttgen

Graduate Student Recruitment
John R. Barry
Kevin F. Brennan
K.-H. Michael Fan
Nikil S. Jayant
Stephen E. Ralph
Linda M. Wills
Paul J. Benkeser*
Mark A. Clements
Richard J. Higgins
Nan Marie Jokerst
Dale C. Ray

Laboratory
Thomas E. Brewer
John F. Dorsey
Robert K. Feeney
Madhavan Swaminathan
John A. Buck
Timothy J. Drabik
James O. Hamblen*
Carl M. Verber

Reappointment, Promotion, and Tenure
Ian F. Akyildiz
J. Alvin Connelly*
Monson H. Hayes, III
Edward W. Kamen
William E. Sayle
John P. Uyemura
Mark A. Clements
Thomas K. Gaylord
William D. Hunt
Hans B. Püttgen
Glenn S. Smith
Sudhakar Yalamanchili

Research
John A. Copeland
David C. Keezer
Waymond R. Scott
Emmanouil M. Tentzeris
George J. Vachtsevanos*
G. Tong Zhou
Elias N. Glytsis
James D. Meindl
Glenn S. Smith
John P. Uyemura
Erik I. Verriest

Statutory Advisory
Robert K. Feeney
Andrew F. Peterson*
Sudhakar Yalamanchili
Thomas K. Gaylord
William D. Hunt
Joy Laskar
David E. Schimmel

Student/Faculty
David R. DeBoer
Arthur Koblasz*
Mohamed F. Moad
Chai-Keong Toh
Paul E. Hasler
W. Marshall Leach, Jr.
Vincent J. Mooney, III

Undergraduate Curriculum
Richard M. Bass
Joseph L.A. Hughes
Gary S. May*
Steven W. McLaughlin
John P. Uyemura
Sudhakar Yalamanchili
Martin A. Brooke
Richard P. Kenan
James H. McClellan
William E. Sayle
Yorai Y. Wardi

General Faculty Standing Committees
Academic Services
Bonnie S. Heck
William E. Sayle
John F. Dorsey
Paul G. Steffes
Joseph L.A. Hughes
Andrew F. Peterson
Miroslav M. Begovic
D. Scott Wills
Arthur Koblasz
Gary S. May

Faculty Honors
William E. Sayle
John F. Dorsey
Paul G. Steffes
Joseph L.A. Hughes
Andrew F. Peterson
Miroslav M. Begovic
D. Scott Wills
Arthur Koblasz
Gary S. May

Statutes
Bonnie S. Heck
William E. Sayle
John F. Dorsey
Paul G. Steffes
Joseph L.A. Hughes
Andrew F. Peterson
Miroslav M. Begovic
D. Scott Wills
Arthur Koblasz
Gary S. May

Welfare and Security
Bonnie S. Heck
William E. Sayle
John F. Dorsey
Paul G. Steffes
Joseph L.A. Hughes
Andrew F. Peterson
Miroslav M. Begovic
D. Scott Wills
Arthur Koblasz
Gary S. May

Undergrad. Curriculum
Bonnie S. Heck
William E. Sayle
John F. Dorsey
Paul G. Steffes
Joseph L.A. Hughes
Andrew F. Peterson
Miroslav M. Begovic
D. Scott Wills
Arthur Koblasz
Gary S. May

Graduate
Bonnie S. Heck
William E. Sayle
John F. Dorsey
Paul G. Steffes
Joseph L.A. Hughes
Andrew F. Peterson
Miroslav M. Begovic
D. Scott Wills
Arthur Koblasz
Gary S. May

Student Regulations
Bonnie S. Heck
William E. Sayle
John F. Dorsey
Paul G. Steffes
Joseph L.A. Hughes
Andrew F. Peterson
Miroslav M. Begovic
D. Scott Wills
Arthur Koblasz
Gary S. May

Student Academic and Financial
Bonnie S. Heck
William E. Sayle
John F. Dorsey
Paul G. Steffes
Joseph L.A. Hughes
Andrew F. Peterson
Miroslav M. Begovic
D. Scott Wills
Arthur Koblasz
Gary S. May

Student Activities
Bonnie S. Heck
William E. Sayle
John F. Dorsey
Paul G. Steffes
Joseph L.A. Hughes
Andrew F. Peterson
Miroslav M. Begovic
D. Scott Wills
Arthur Koblasz
Gary S. May

Student Honor
Bonnie S. Heck
William E. Sayle
John F. Dorsey
Paul G. Steffes
Joseph L.A. Hughes
Andrew F. Peterson
Miroslav M. Begovic
D. Scott Wills
Arthur Koblasz
Gary S. May

*Committee chair
Continuing Education Courses

During 1998-99, ECE faculty members offered 20 sections of courses through Georgia Tech’s Distance Learning, Continuing Education, and Outreach Department. Below is a listing of course dates, titles, and ECE-based instructors and administrators.

Administrator: W. Russell Callen, Jr.

September 14-18, 1998, *CMOS Analog Integrated Circuits*  
Instructor: Phillip E. Allen

Instructor: A.P. Sakis Meliopoulos

Instructors: A.P. Sakis Meliopoulos and Miroslav M. Begovic

Instructors: Robert K. Feeney and David R. Hertling

November 2-6, 1998, *Near-field Antenna Measurements and Microwave Holography*  
Instructor: Edward B. Joy

November 4-6, 1998, *Power Distribution System Grounding and Transients*  
Instructor: A.P. Sakis Meliopoulos

Instructor: A.P. Sakis Meliopoulos

December 7-11, 1998, *Far-field, Anechoic Chamber, Compact, and Near-field Antenna Measurements*  
Instructor: Edward B. Joy

January 23-March 6, 1999, *Electrical Engineering Refresher: Preparation for the PE Exam*  
Administrator: W. Russell Callen, Jr.

Administrator: W. Russell Callen, Jr.

February 1-5, 1999, *Antenna Engineering Including Cellular, Mobile, and Portable Antennas*  
Instructors: Edward B. Joy, Waymond R. Scott, Jr., and Glenn S. Smith

February 15-19, 1999, *Substation Ground Practice and Analysis*  
Instructor: Edward B. Joy

March 15-18, 1999, *Integrated Grounding System and Design*  
Instructor: A.P. Sakis Meliopoulos

March 21-24, 1999, *Twentieth Anniversary Conference for Advanced Research in VLSI*  
Administrator: Stephen P. DeWeerth

March 31-April 2, 1999, *Power Engineering Devices, Circuits, and Systems*  
Instructors: Richard M. Bass and Thomas G. Habetler

Instructors: Robert K. Feeney, David R. Hertling, and Gordon L. Stüber

May 3-4, 1999, *Fault and Disturbance Analysis Conference*  
Administrator: A.P. Sakis Meliopoulos

May 5-7, 1999, *Fifty-third Annual Protective Relaying Conference*  
Administrators: A.P. Sakis Meliopoulos and Roger P. Webb

June 14-18, 1999, *CMOS Analog Integrated Circuits*  
Instructor: Phillip E. Allen
Research and Administrative Personnel

One hundred forty-one administrative and research staff members, who are listed below, were employed during 1998-99. There were 20 terminations and resignations, 31 new hires, four promotions, and one death. As of June 30, 1999, there were 120 administrative and research employees.

### Administrative Personnel

<table>
<thead>
<tr>
<th>Name</th>
<th>Title</th>
</tr>
</thead>
<tbody>
<tr>
<td>Jeanette G. Ayeni</td>
<td>Accountant II</td>
</tr>
<tr>
<td>Nancy L. Baines</td>
<td>Administrative Assistant I</td>
</tr>
<tr>
<td>Margarita Bolet</td>
<td>Administrative Coordinator</td>
</tr>
<tr>
<td>Robert C. Boozer</td>
<td>Business Operations Manager</td>
</tr>
<tr>
<td>Thomas E. Brewer</td>
<td>Assistant to the Chair and Laboratory Manager II</td>
</tr>
<tr>
<td>Suzy Briggs</td>
<td>Director of Development</td>
</tr>
<tr>
<td>Jamie Brinkley</td>
<td>Senior Administrative Secretary</td>
</tr>
<tr>
<td>Lynda Buescher</td>
<td>Human Resources Specialist</td>
</tr>
<tr>
<td>Darlene Bush</td>
<td>Administrative Assistant I</td>
</tr>
<tr>
<td>Vernessa Callahan</td>
<td>Accounting Manager II</td>
</tr>
<tr>
<td>Dale E. Callaway</td>
<td>Research Coordinator I</td>
</tr>
<tr>
<td>Stephanie Cappello</td>
<td>Computer Services Specialist II</td>
</tr>
<tr>
<td>Sonja Carter</td>
<td>Graphics Specialist</td>
</tr>
<tr>
<td>Mary Jane Chappell</td>
<td>Administrative Assistant II</td>
</tr>
<tr>
<td>Kathy B. Check</td>
<td>Administrative Assistant II</td>
</tr>
<tr>
<td>Michel M. Collins</td>
<td>Senior Administrative Secretary</td>
</tr>
<tr>
<td>Leyla Sutcu Conrad</td>
<td>Academic Professional</td>
</tr>
<tr>
<td>Sherrie Cooper</td>
<td>Academic Assistant I</td>
</tr>
<tr>
<td>Sharon Crouch</td>
<td>Financial Manager II</td>
</tr>
<tr>
<td>Sharise J. Cunningham</td>
<td>Information Specialist II</td>
</tr>
<tr>
<td>Maryjo Davis</td>
<td>Academic Advisor II</td>
</tr>
<tr>
<td>Dianne E. Demillo</td>
<td>Administrative Assistant I</td>
</tr>
<tr>
<td>Wayne Devezin</td>
<td>Research Machinist</td>
</tr>
<tr>
<td>Charlotte A. Doughty</td>
<td>Senior Admin. Secretary</td>
</tr>
<tr>
<td>Heather L. Emmert</td>
<td>Project Coordinator I</td>
</tr>
<tr>
<td>Lajauna F. Ennis</td>
<td>Administrative Manager I</td>
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<tr>
<td>Barry N. Fairley</td>
<td>Research Coordinator I</td>
</tr>
<tr>
<td>Diana L. Fouts</td>
<td>Graphics Specialist</td>
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<tr>
<td>Kayron C. Gilstrap</td>
<td>Administrative Coordinator</td>
</tr>
<tr>
<td>Pamela F. Halverson</td>
<td>Administrative Assistant II</td>
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<tr>
<td>David W. Harwell</td>
<td>Research Coordinator I</td>
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<tr>
<td>Robert R. House</td>
<td>Electronics Technician III</td>
</tr>
<tr>
<td>Richard L. Howell</td>
<td>Research Coordinator I</td>
</tr>
<tr>
<td>Angela Hughes</td>
<td>Administrative Manager I</td>
</tr>
<tr>
<td>Joseph F. Jackson</td>
<td>Director for Operations and Assistant to the Chair</td>
</tr>
<tr>
<td>Kesha L. Jackson</td>
<td>Administrative Assistant I</td>
</tr>
<tr>
<td>Minionette R. Jolly</td>
<td>Senior Administrative Secretary</td>
</tr>
<tr>
<td>Edgar L. Jones</td>
<td>Electronics Technician III</td>
</tr>
<tr>
<td>Rajib Joshi-Acharya</td>
<td>Computer Serv. Specialist III</td>
</tr>
<tr>
<td>Debra B. Kelley</td>
<td>Administrative Manager I</td>
</tr>
<tr>
<td>Deborah K. King</td>
<td>Senior Administrative Secretary</td>
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<tr>
<td>Rochelle F. Kraehe</td>
<td>Administrative Assistant II</td>
</tr>
<tr>
<td>Warren M. Lanier</td>
<td>Systems Support Specialist II</td>
</tr>
<tr>
<td>Sharon D. Lawrence</td>
<td>Academic Assistant II</td>
</tr>
<tr>
<td>Angelo Lawton</td>
<td>Research Coordinator I</td>
</tr>
<tr>
<td>Herbert Lehman</td>
<td>Director of Operations</td>
</tr>
<tr>
<td>Judith C. Lorier</td>
<td>Accountant III</td>
</tr>
<tr>
<td>Pamela A. Luther</td>
<td>Accounting Manager I</td>
</tr>
<tr>
<td>Mary Angela May</td>
<td>Program Coordinator I</td>
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<tr>
<td>W. Bruce McFarland</td>
<td>Laboratory Coordinator</td>
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<tr>
<td>Thomas McKoon</td>
<td>Research Coordinator II</td>
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<tr>
<td>Marvin Mims</td>
<td>Utility Worker II</td>
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<td>Doria Moore</td>
<td>Accountant II</td>
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<tr>
<td>Gregory Motlasz</td>
<td>Computer Services Specialist III</td>
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<tr>
<td>Marilouise Mycko</td>
<td>Academic Advisor II</td>
</tr>
<tr>
<td>Janet M. Myrick</td>
<td>Senior Administrative Secretary</td>
</tr>
<tr>
<td>Jacqueline L. Nemeth</td>
<td>Information Specialist II</td>
</tr>
<tr>
<td>Linda Newton</td>
<td>Administrative Assistant I</td>
</tr>
<tr>
<td>Lisa Novak</td>
<td>Accounting Manager I</td>
</tr>
<tr>
<td>James I. Nowell</td>
<td>Research Machinist</td>
</tr>
<tr>
<td>Gail O. Palmer</td>
<td>Program Specialist</td>
</tr>
<tr>
<td>Maxene L. Penticost</td>
<td>Administrative Coordinator</td>
</tr>
<tr>
<td>Boyd M. Pettit</td>
<td>Research Coordinator II</td>
</tr>
<tr>
<td>Gail A. Reeves</td>
<td>Administrative Coordinator</td>
</tr>
<tr>
<td>Suellen Robertson</td>
<td>Administrative Assistant II</td>
</tr>
<tr>
<td>Carl A. Rust</td>
<td>Business Operations Manager for the Packaging Research Center</td>
</tr>
<tr>
<td>Gwendolyn J. Satchel</td>
<td>Administrative Assistant I</td>
</tr>
<tr>
<td>Kelly M. Schmidt</td>
<td>Computer Services Specialist II</td>
</tr>
<tr>
<td>Stacy V. Schultz</td>
<td>Administrative Assistant II</td>
</tr>
<tr>
<td>Melissa Sherrr</td>
<td>Administrative Assistant II</td>
</tr>
<tr>
<td>Fred T. Stanley</td>
<td>Research Coordinator I</td>
</tr>
<tr>
<td>Florence I. Stoia</td>
<td>Program Coordinator II</td>
</tr>
<tr>
<td>Venkatesh Sundaram</td>
<td>Laboratory Technician II</td>
</tr>
<tr>
<td>Stephen Sweatman</td>
<td>Utility Worker II</td>
</tr>
<tr>
<td>Jennifer P. Tatham</td>
<td>Administrative Coordinator</td>
</tr>
<tr>
<td>Denise D. Taylor</td>
<td>Senior Administrative Secretary</td>
</tr>
<tr>
<td>Alvis Turner</td>
<td>Assistant to the Director of NEETRAC Operations</td>
</tr>
<tr>
<td>Judith Vanderboom</td>
<td>Accountant II</td>
</tr>
<tr>
<td>Harry L. Vann</td>
<td>Development Officer I</td>
</tr>
<tr>
<td>Carla Ward</td>
<td>Accountant I</td>
</tr>
<tr>
<td>Gene A. Ward</td>
<td>Electronics Technician III</td>
</tr>
<tr>
<td>Todd E. Whitehurst</td>
<td>Computer Serv. Specialist III</td>
</tr>
<tr>
<td>Dean Williams</td>
<td>Research Coordinator I</td>
</tr>
<tr>
<td>Rochelle Y. Williams</td>
<td>Accountant II</td>
</tr>
<tr>
<td>Suzzette Willingham</td>
<td>Academic Assistant II</td>
</tr>
</tbody>
</table>
Research Personnel

Randal T. Abler
Brian Barnes
Keith Bernhardt
Swapan K. Bhattacharya
Thomas C. Champion
Young Cho
Larry T. Coffeen
Timothy Collins
Didier Contis
Lorand Csiszar
Kathleen Cummings Maloney
William A. Doolittle
Parag Doshi
Abasifreke U. Ebong
Peter W. Flur
Steven J. Flynn
Michael D. Furman
Alex Z. Goldstein
Michael Hamai
Verlin Stanley Harper
Richard A. Hartlein
Lonnie D. Harvel
Jeffrey Hildreth
Raymond C. Hill
Jimmie Jones
Youngjoong Joo
Sachin Kamra
Tae S. Kim
Frank C. Lambert

Jeong-Bong Lee
Yuan T. Li
David Lin
François J. Malassenet
Ramanamurty Malladi
Janeen McReynolds
Muid Mufti
Zhaoyuan Ning
Jae Y. Park
Thomas J. Parker
Shashikant G. Patel
Matthew Perry
Mark Richards
Caryn Riley
Steven Shafer
Samuel F. Smith
W. Whitfield Smith
Harry T. Sullivan
Venkatesh Sundaram
Dean A. Sutter
Martin Von Arx
David S. Webb
Irene G. Wells
George White
Michael Woodberry
Ilgu Yun

Research Engineer II
Research Engineer I
Research Engineer II
Senior Research Scientist
Research Engineer I
Research Engineer II
Research Engineer II
Research Engineer II
Research Engineer I
Research Engineer I
Research Technologist I
Research Engineer II
Research Engineer II
Research Scientist II
Research Engineer II
Research Engineer II
Research Engineer II
Research Engineer I
Research Engineer II
Research Engineer I
Research Engineer II
Research Engineer I
Research Engineer II
Research Engineer II
Postdoctoral Fellow
Postdoctoral Fellow
Research Engineer II
Research Engineer I
Program Manager
Senior Research Engineer
Research Engineer II
Research Engineer II
Research Engineer II
Research Engineer II
Research Engineer I
Senior Research Engineer
Research Engineer I
Postdoctoral Fellow
Senior Academic Professional
and Assistant to the Chair
for Computer Support
Research Engineer II
Senior Research Engineer
Research Engineer I
Postdoctoral Fellow
Students

Student Honors and Awards

**Olufunmilola Awoniyi** received the AESO Systems Graduate Minority Engineering Award, which is presented to an outstanding graduating minority senior admitted to a graduate school in engineering, preferably but not exclusively, for study toward a doctoral degree.

**Olufunmilola Awoniyi, Geoffrey DeSa, Daniel McConnell, Matthew Neal, and Adrienne Stiff** each received an ECE Senior Scholar Award for having the highest academic averages in their class.

**Nikhil Bagga, Norman W. Chin See, and Carson Scott Spencer** 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.

**Cari Barsher, Brian Delaney, John Elmore, Emily Loadholt Eaton, Tammy Gammon, Tsai Chi Huang, Sashe Kanapathi, Sang Bin Lee, Albert Lu, Mile Milisavljevic, Ketan Patel, David W. Peters, and Allen Robinson** each received an ECE Outstanding Graduate Teaching Assistant Award.

**Sumit N. Bhansali** received the Outstanding ECE Senior Award for his excellent scholastic average and his active role in extracurricular activities.

**Sumit N. Bhansali** and **Matthew W. Neal** each received Phi Kappa Phi Faculty Recognition Awards for having attained among the highest academic averages in the graduating senior class.

**Chonlameth Chaichuen, Sangyoun Lee, and Subrato De** received the U.S. Army’s Advanced Sensors Consortium Research Excellence Awards at the Army Research Labs’ Annual Federal Labs Symposium in College Park, Md. Their graduate advisor is **Vijay K. Madisetti**.

Choo Chong received the Outstanding Undergraduate Teaching Assistant Award in Computing for his leadership in support of teaching and the high regard shown to him by his students.

Craig DeBellis received the Center for the Enhancement of Teaching and Learning (CETL)/Dow Foundation Perseverance Award for overcoming extreme hardship in completing a degree program at Georgia Tech.
Parag Doshi was awarded the Sigma Xi Best Ph.D. Thesis Research Award for his dissertation entitled “Fundamental Understanding and Integration of Rapid Thermal Processing (RTP), PECVD, and Screen-printing for Cost-effective, High-efficiency Silicon Photovoltaic Devices.” His advisor was Ajeet Rohatgi.

Rangaraj Garudapuram and Andrew E. Thangaraj received Colonel Oscar P. Cleaver Awards for their outstanding scores on the doctoral preliminary examinations.

Taliah Givens and Nicole Maria Obarowski received Georgia Tech Women’s Forum Scholarships, which are presented to outstanding female undergraduate and graduate students. Ms. Givens and Ms. Obarowski are undergraduates.

Kimberly Marie Houck and Gregory Alan Martin received the Faculty Award for ECE, 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 the Institute and have contributed significantly to both student welfare and student-faculty interactions.

Heather Macleod received a Georgia Tech Alumni Association Student Leadership Award for International Study. Recipients are proven leaders on campus and in the community and have demonstrated significant potential for future alumni leadership.

Matthew Wayne Neal received the Briaerean Scholarship Cup, which is presented to the graduating senior co-op student with the highest grade point average.

David W. Peters received a CETL/AMOCO Graduate Teaching Assistant Award.

William L. Plishker received the Outstanding ECE Sophomore Award for having the highest scholastic average in his class.

Juergen Vogel received the IEEE Region 3 Larry K. Wilson Award. The award was presented on March 28 at the Region 3 Awards Luncheon during Souteastcon ’99 in Lexington, Ky.

Ph.D. Students Graduated

Sami Al-Hasan—Advisor: Vachtsevanos—Spring 1999
Thesis: Intelligent Approaches to Mission Planning and Control for Autonomous Vehicles
Current Status: Employed as dean of the Al-Ahsa College of Technology in Hofuf, Saudi Arabia.

David V. Anderson—Advisor: Clements—Winter 1999
Thesis: Audio Signal Enhancement Using Multi-resolution Sinusoidal Modeling
Current Status: Employed as an assistant professor in the School of Electrical and Computer Engineering at the Georgia Institute of Technology in Atlanta, GA.

Joseph Arrowood, Jr.—Advisor: M.J.T. Smith—Winter 1999
Thesis: Theory and Application of Adaptive Filter Banks
Current Status: Employed as a technical staff member at Los Alamos National Laboratory in Los Alamos, NM.

James M. Baker, Jr.—Advisor: D.S. Wills—Summer 1998
Current Status: Employed as an assistant professor in the Department of Electrical and Computer Engineering at Virginia Polytechnic and State University in Blacksburg, VA.

Brian Barnes—Advisor: Owen—Spring 1999
Thesis: Real-time Resource Management for RSVP/ATM Edge Devices
Current Status: Employed as a senior engineer at Scientific Research Corporation in Atlanta, GA.

Enrico Bellotti—Advisor: Brennan—Spring 1999
Thesis: Advanced Modeling of Wide Band Gap Semiconductors Materials and Devices
Current Status: Employed as a research scientist in the School of Electrical and Computer Engineering at the Georgia Institute of Technology in Atlanta, GA.

Peter Bergstrom—Advisor: Ingram/Hughes—Winter 1999
Thesis: Markov Chain Models for All Optical Shared Memory
Current Status: Employed at TASC, Inc. in Chantilly, VA.
John Bordelon—Advisor: Hertling—Spring 1999
*Thesis:* A Large Signal Model for the RF Power MOSFET
*Current Status:* Employed as a senior research engineer in the Electronics Systems Laboratory at the Georgia Tech Research Institute in Atlanta, GA.

Muhammad Butt—Advisor: Maragos—Spring 1999
*Thesis:* Continuous and Discrete Approaches to Morphological Image Analysis with Applications: PDEs, Curve Evolution, and Distance Transforms
*Current Status:* Employed as a research engineer at Appalachian Electronic Instruments in Ronceverte, WV.

James Caffery, Jr.—Advisor: Stüber—Fall 1998
*Thesis:* Wireless Location in CDMA Cellular Radio Systems
*Current Status:* Employed as an assistant professor in the School of Electrical and Computer Engineering at the University of Cincinnati in Cincinnati, OH.

Premjeet Chahal—Advisor: M. Allen—Spring 1999
*Thesis:* Electroless Plating and Polymer-ceramic Nanocomposites
*Current Status:* Employed as a senior engineer at Raytheon-TI in Dallas, TX.

Jeffrey B. Cross—Advisor: Jokerst—Summer 1998
*Thesis:* Alignment Tolerant Smart Pixels and Optical Links
*Current Status:* Employed as a senior engineer at AMP, Inc. in Harrisburg, PA.

Donald Davies, Jr.—Advisor: Gaylord—Spring 1999
*Thesis:* Long-period Fiber Gratings Fabricated with Focused CO₂ Laser Pulses
*Current Status:* Employed at Lucent Technologies in Norcross, GA.

Daniel Drake—Advisor: Williams—Fall 1998
*Thesis:* Information's Role in the Estimation of Chaotic Signals
*Current Status:* Employed as a staff member at the Lincoln Lab at the Massachusetts Institute of Technology in Lexington, MA.

John Eble—Advisor: Meindl—Winter 1999
*Current Status:* Employed as an engineer at Compaq in Shrewsbury, MA.

Catherine Falkner—Advisor: Heck—Fall 1998
*Thesis:* Robust Output Feedback Controllers for Power Systems Stabilization
*Current Status:* Employed as an assistant professor in the Department of Engineering at Arkansas Tech University in Russellville, AR.

Louis B. Fertig—Advisor: McClellan—Summer 1998
*Thesis:* Dual Forms for Constrained Adaptive Filtering
*Current Status:* Employed as a staff member at the Lincoln Lab at the Massachusetts Institute of Technology in Lexington, MA.

*Thesis:* A Chaotic Communication System with a Receiver Estimation Engine
*Current Status:* Employed at the Southwest Research Institute in San Antonio, TX.

Daniel Guthrie—Advisor: Gaylord—Fall 1998
*Thesis:* Analysis of Quantum Semiconductor Heterostructures by Ballistic Electron
*Current Status:* Employed as a research engineer in the School of Electrical and Computer Engineering at the Georgia Institute of Technology in Atlanta, GA.

Joe Haralson, II—Advisor: Brennan—Spring 1999
*Current Status:* Employed as a private consultant in Maryland.

Houston Irby—Advisor: Hunt—Summer 1998
*Thesis:* Design, Fabrication, and Characterization of an Acoustically-induced Distributed Bragg Reflector (ABDR)
*Current Status:* Employed at Intel Corp. in Hillsboro, OR.

Joel Jackson—Advisor: Benkeser—Spring 1999
*Thesis:* Ultrasonic Imaging of the Structure and Elasticity of the Carotid Bifurcation
*Current Status:* Employed as a postdoctoral fellow in the School of Electrical and Computer Engineering at the Georgia Institute of Technology in Atlanta, GA.

Inwhee Joe—Advisor: Akyildiz—Summer 1998
*Thesis:* Error Control for Wireless ATM Networks
*Current Status:* Employed by the Department of Energy at Oak Ridge National Laboratories in Oak Ridge, TN.
Youngjoong Joo—Advisor: Brooke—Winter 1999
Thesis: High Speed Image Acquisition System for Focal Plane Arrays
Current Status: Employed as a research engineer in the School of Electrical and Computer Engineering at the Georgia Institute of Technology in Atlanta, GA.

Paul Juodawlkis—Advisor: Verber—Spring 1999
Thesis: Low-temperature-grown InGaAs Quantum Wells for Optical Device Applications
Current Status: Employed in the Electro-optic Materials and Devices Group, Lincoln Laboratory at the Massachusetts Institute of Technology in Lexington, MA.

Paul Kerstetter—Advisor: Casinovi—Winter 1999
Thesis: Models of Optoelectronic Devices Suitable for Electrical Circuit Simulation
Current Status: Not known.

Dukhyun Kim—Advisor: Stüber—Fall 1998
Thesis: Orthogonal Frequency Division Multiplexing for Digital Broadcasting
Current Status: Employed as a technical staff member at Lucent Technologies in Atlanta, GA.

Tae Kim—Advisor: May—Fall 1998
Thesis: Modeling, Optimization, and Control of Via Formation by Photosensitive Polymers for MCM-D Applications
Current Status: Employed as a postdoctoral fellow in the School of Electrical and Computer Engineering at the Georgia Institute of Technology in Atlanta, GA.

Clinton Knight—Advisor: DeWeerth—Winter 1999
Thesis: WWW-based Automatic Testing of Analog Circuits
Current Status: Employed at IBM Corp. in Research Triangle Park, NC.

James Kosmach—Advisor: Wicker—Fall 1998
Thesis: Soft Decision Decoding of Reed Solomon Codes for Mobile Messaging Systems
Current Status: Employed as a systems engineer at Motorola in Austin, TX.

Alan Krauss—Advisor: Kamen—Fall 1998
Thesis: Control of Run by Run Processes with Applications to Large Area Material Deposition

Nicole Krishnamurthy—Advisors: Jokerst/Laskar
Fall 1998
Thesis: Thin Film InP-based High Speed Electronic Devices Integrated onto Silicon
Current Status: Employed at General Electric Research and Development Center in Schenectady, NY.

Daniel A. Leatherwood—Advisor: Joy—Summer 1998
Thesis: Plane Wave, Pattern Subtraction, Range Compensation for Spherical Surface Antenna Pattern Measurements
Current Status: Employed as a research engineer in the Sensors and Electromagnetic Applications Laboratory of the Georgia Tech Research Institute in Atlanta, GA.

Thesis: Wavelet-based Transient Analysis
Current Status: Employed at NASA Goddard Space Center in Greenbelt, MD.

Irving Linares—Advisor: Mersereau—Summer 1998
Thesis: Theory and Applications of the Estimated Spectrum Adaptive Postfilter
Current Status: Employed as an assistant professor in the Department of Electrical Engineering at I-Shou University in Kahsiung, Taiwan R.O.C.

Jin Liu—Advisor: Brooke—Spring 1999
Thesis: Fully Parallel Learning Neural Network Chip for Real-time Control
Current Status: Employed as an assistant professor in the Department of Electrical Engineering at the University of Texas at Dallas in Dallas, TX.

Andrew W. Mathis—Advisor: Peterson—Summer 1998
Thesis: Electromagnetic Modeling of Interconnects Incorporating Perforated Ground Planes
Current Status: Employed at Ansoft Corp. in Boulder, CO.

Philip May—Advisor: D.S. Wills—Spring 1999
Thesis: Enabling Efficient High-performance Communication in Multicomputers
Current Status: Employed as a technical staff member at Motorola Corp. in Schaumburg, IL.

Shreesh Narasimha—Advisor: Rohatgi—Winter 1999
Thesis: High Efficiency Silicon Solar Cells
Current Status: Employed as a research engineer at IBM Corp. in Poughkeepsie, NY.
Krishna Narayanan—Advisor: Stüber—Fall 1998
*Thesis*: Turbo Decoding for Packet Data Systems
*Current Status*: Employed as an assistant professor in the Department of Electrical Engineering at Texas A&M University in College Station, TX.

Burhan Necioglu—Advisor: Clements—Spring 1999
*Thesis*: Objectively Measured Descriptors for Perceptual Characterization of Speakers
*Current Status*: Employed as a technical staff member at MITRE Corp. in McLean, VA.

Kimberly Newman—Advisor: Keezer—Spring 1999
*Thesis*: A Parallel Digital Interconnect Test Methodology for Multi-chips
*Current Status*: Employed as a visiting assistant professor with the Georgia Tech Regional Engineering Program in Savannah, GA.

*Thesis*: Thin Film ZnO-based Resonators for Integrated Wireless Applications
*Current Status*: Employed as a hardware development engineer at Hewlett-Packard in Cupertino, CA.

Girish Patel—Advisor: DeWeerth—Spring 1999
*Thesis*: A Neuromorphic Architecture for Modeling Intersegmental Coordination
*Current Status*: Employed at Texas Instruments in Dallas, TX.

Anh-Vu Pham—Advisor: Laskar—Spring 1999
*Thesis*: Microwave/Millimeter Wave Multi-layer Organic Based Interconnect
*Current Status*: Employed as an assistant professor in the Department of Electrical and Computer Engineering at Clemson University in Clemson, SC.

Thomas Pratt—Advisor: Ingram—Winter 1999
*Thesis*: Effects of Mainbeam Scattered Interference from Multiple Broadband Signals
*Current Status*: Employed as a senior research engineer in the Information Technology and Telecommunications Laboratory at the Georgia Tech Research Institute in Atlanta, GA.

Richard Rau—Advisor: McClellan—Fall 1998
*Thesis*: Postprocessing Tools for Ultra Wideband SAR Images
*Current Status*: Employed at Lucent Technologies in Nurnberg, Germany.

Caryn M. Riley—Advisor: Habetler—Summer 1998
*Thesis*: Current-based Sensorless Vibration Monitoring of Small AC Machines
*Current Status*: Employed as a research engineer in the National Electrical Energy Testing, Research, and Applications Center, School of Electrical and Computer Engineering at the Georgia Institute of Technology in Atlanta, GA.

Michael Ropp—Advisor: Begovic—Fall 1998
*Thesis*: Design Issues for Grid Connected Photovoltaic Systems
*Current Status*: Employed as an assistant professor in the Department of Electrical Engineering at South Dakota State University in Brookings, SD.

Erin Sahinci—Advisor: Kamen—Fall 1998
*Thesis*: Optimal Estimation of Discrete Fault Probabilities Using a Stochastic State Model
*Current Status*: Employed as a lead optical validation engineer at CIENA Corp. in Savage, MD.

David Schooley—Advisor: Püttgen—Fall 1998
*Thesis*: Unit Commitment and System Reliability in Electric Utility
*Current Status*: Employed as an operations research engineer at Commonwealth Edison in Lombard, IL.

Yaron Seliktar—Advisor: Williams—Winter 1999
*Thesis*: Space Time Adaptive Monopulse Processing
*Current Status*: Employed at Northrup Grumman Norden Systems in Norwalk, CT.

Lan Shen—Advisor: Madisetti—Fall 1998
*Thesis*: Temporal Design for Core Based System: A Formal Approach
*Current Status*: Employed at IBM.

John Terry—Advisor: Williams—Spring 1999
*Thesis*: Blind Adaptive Array Techniques for Mobile Satellite Links
*Current Status*: Employed as a senior research engineer at Nokia Research Center in Irving, TX.

Leon Tolbert—Advisor: Habetler—Spring 1999
*Thesis*: New Multilevel Carrier-based Pulse Width Modulation Techniques Applied to a Diode-clamped Converter for Use as a Universal Power Conditioner
*Current Status*: Employed as an assistant professor in the Department of Electrical Engineering at the University of Tennessee in Knoxville, TN.
David Walker—Advisor: Gaylord—Spring 1999
Thesis: Ferroelectric Liquid Crystal Waveguide Modulators
Current Status: Employed at Verifiber Technologies in Cumming, GA.

Heebyung Yoon—Advisors: Chatterjee/Hughes—Summer 1998
Thesis: Fault Detection and Identification Techniques for Embedded Analog Circuits
Current Status: Employed as the manager of the Computer Center, Republic of Korea, Fleet Command.

Ho Yang—Advisor: Ingram—Fall 1998
Thesis: Partially Adaptive Space Time Processing
Current Status: Employed as a technical staff member at Nixxo Technologies in Santa Clara, CA.

1998-99 IEEE STUDENT BRANCH OFFICERS
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Kurt Rohloff
Vice Chair-Internal
Chris Murray
Vice Chair-External
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Keith Brouse
Secretary
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Web Site
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Graduate Liaison
Greg Martin

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Stacey Rodd
Kurt Rohloff
C. Brent Runyon
Meredith A. Schelp
Gregory Scherrer
David Skinner
Chip Vorndran
Academic Operations

Instructional Operations

The 1998-99 academic year was a year of conversion. The School of ECE devoted considerable resources and effort to preparing for the calendar conversion from quarters to semesters.

The conversion required extensive advising of virtually all of the 1,763 undergraduate computer engineering and electrical engineering majors. Group advising sessions were held throughout the academic year. Transition courses were developed for sequences that were not being continued under semesters. Early versions of two semester courses were taught in Spring 1999 using a quarter schedule. Trailer versions of certain quarter courses were planned for the first two semesters to accommodate students who would be unable to complete critical quarter sequences. Academic courses and laboratories offered during the summer, fall, winter, and spring quarters of the 1998-99 academic year are listed in this section.

Assessment efforts continued throughout the academic year. In January 1999, the faculty assembled for the School’s annual retreat, with assessment a major part of the activity. Faculty members were divided into groups, and each group was asked to write objectives and outcomes for each of the required core ECE semester courses. Then, the faculty members were grouped by technical interest area, and each group was asked to develop objectives and outcomes for that group’s major design course. During the coming years, these outcomes and objectives will be assessed by a committee devoted to program assessment.

The assessment process in place at Georgia Tech in ECE has become a model for other large programs. Developed by Joseph L.A. Hughes, associate chair for computer engineering and program development, it has been adapted to fit the needs of other Georgia Tech programs, as well as engineering programs at other top schools in the U.S.

Undergraduate Courses (Excludes independent study and undergraduate research courses)

<table>
<thead>
<tr>
<th>Course</th>
<th>Title</th>
<th>Number of Lecture/Lab Sections Offered</th>
<th>Avg. Section Enrollment of Lectures/Labs</th>
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<td>CmpE 1700</td>
<td>Computer and Digital Design Fundamentals*</td>
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<td>CmpE 2030</td>
<td>Introduction to Computer Engineering (semester course)</td>
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<td>CmpE 2500</td>
<td>Digital Computation I</td>
<td>9/27</td>
<td>46/15</td>
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<td>Computer Architecture I</td>
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<td>Special Topics</td>
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<td>NT Development &amp; Object Programming Seminar</td>
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<td>VLSI Design &amp; Testing I</td>
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<td>CmpE 4760</td>
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<td>EE 1823</td>
<td>The Electrical &amp; Computer Engineer in American Society</td>
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<td>Introduction to Design</td>
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<td>Introduction to Discrete Systems</td>
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<td>Signals &amp; Systems Transition Course</td>
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<td>Digital Integrated Circuits</td>
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<td>Elements of EE I: DC Circuits</td>
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<td>Signals &amp; Systems I</td>
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<td>Linear Systems &amp; Transforms</td>
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<td>Nonlinear Devices &amp; Circuits</td>
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<td>Electromagnetics II</td>
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<td>EE 3350</td>
<td>Electromechanical Systems &amp; Energy Conversion</td>
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<td>EE 3340</td>
<td>Random Signals &amp; Noise</td>
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<td>EE 3351</td>
<td>Fundamentals of Microelectronic Devices</td>
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<td>Junior Electrical Engineering Laboratory</td>
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<td>EE 3480</td>
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<td>Electric Power Conversion*</td>
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<td>EE 3823</td>
<td>Bioengineering Measurements**</td>
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<td>Java Programming for Engineers</td>
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<td>EE 4000</td>
<td>Project Engineering &amp; Professional Practice (semester course)</td>
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<td>Electric Machines</td>
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<td>Analog Filter Design</td>
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<td>EE 4014</td>
<td>Introduction to Automation &amp; Robotics</td>
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<td>EE 4015</td>
<td>Principles of Feedback Control</td>
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<td>EE 4016</td>
<td>Feedback Control System Design &amp; Implementation</td>
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<td>EE 4019</td>
<td>Power System Analysis</td>
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<td>EE 4023</td>
<td>Integrated Circuits &amp; Systems</td>
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<td>EE 4024</td>
<td>Speech Analysis, Synthesis, &amp; Compression</td>
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<td>Audio Engineering</td>
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<td>Microwave Devices &amp; Circuits</td>
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<td>Introduction to Radar</td>
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<td>EE 4046</td>
<td>Power System Engineering</td>
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<td>EE 4047</td>
<td>Power Electronics</td>
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<td>EE 4050</td>
<td>Optical Engineering</td>
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<td>EE 4051</td>
<td>Fiber Optics</td>
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<td>Fiber Optics Laboratory</td>
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<td>EE 4053</td>
<td>Fiber Optic System Design</td>
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<td>EE 4055</td>
<td>Semiconductor Device Electronics</td>
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<td>EE 4056</td>
<td>Integrated Circuit Fabrication</td>
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<td>EE 4058</td>
<td>Electronic Systems Packaging</td>
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<td>EE 4061</td>
<td>Communication Systems</td>
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<td>EE 4062</td>
<td>Communication Systems Laboratory</td>
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<td>EE 4064</td>
<td>Introduction to RF Design</td>
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<td>RF Amplifier Design</td>
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<td>Radio Receiver &amp; Transmitter Design</td>
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<td>Local Computer Networks</td>
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<td>EE 4075</td>
<td>Microcomputer-based Design</td>
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<td>EE 4077</td>
<td>Interfacing Small Computers</td>
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<td>EE 4078</td>
<td>Digital Signal Processing</td>
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<td>EE 4081</td>
<td>Introduction to Bioelectronics</td>
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<td>EE 4084</td>
<td>Transistor Circuit Analysis</td>
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<td>EE 4085</td>
<td>Electronic Design Laboratory</td>
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<td>EE 4086</td>
<td>Operational Amplifier Design</td>
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### Graduate Courses

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<tr>
<th>Course</th>
<th>Title (Quarters Offered on Atlanta Campus)</th>
<th>Total Enrollment</th>
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<tr>
<td>EE 6050</td>
<td>Random Processes I (Su, F)</td>
<td>97</td>
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<tr>
<td>EE 6051</td>
<td>Random Processes II (F)</td>
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<td>EE 6057</td>
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<td>Telecommunications II (Sp)</td>
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<td>EE 6059</td>
<td>Personal &amp; Mobile Communications (Sp)</td>
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<td>EE 6063</td>
<td>Methods in Pattern Recognition (Sp)</td>
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<td>EE 6070</td>
<td>Fourier Techniques &amp; Signal Analysis (F)</td>
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<td>EE 6072</td>
<td>Fourier Optics &amp; Holography (W)</td>
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<td>EE 6073</td>
<td>Optical Signal Processing (Sp)</td>
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<td>Coding Theory II (W)</td>
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<td>EE 6090</td>
<td>Satellite Communications Systems (W)</td>
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<td>EE 6092</td>
<td>Computer Communication Systems (F, Sp)</td>
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<td>Communications Networks (W)</td>
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<td>EE 6099</td>
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<td>EE 6100</td>
<td>Linear Networks &amp; Systems (Su, A)</td>
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<td>EE 6101</td>
<td>Time Varying &amp; Nonlinear Systems (Sp)</td>
<td>16</td>
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<tr>
<td>EE 6102</td>
<td>Nonlinear Control Systems (W)</td>
<td>26</td>
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<tr>
<td>EE 6110</td>
<td>Modern Linear Control (W)</td>
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<tr>
<td>EE 6111</td>
<td>Feedback Control Systems I (W)</td>
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<tr>
<td>EE 6113</td>
<td>Feedback Control Systems III (Su)</td>
<td>22</td>
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<tr>
<td>EE 6114</td>
<td>Adaptive Systems (F)</td>
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<td>EE 6131</td>
<td>Optimum Linear Filters (W)</td>
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<td>EE 6175</td>
<td>RISC Architecture (W)</td>
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<td>EE 6180</td>
<td>VLSI Design I (W)</td>
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<td>EE 6181</td>
<td>VLSI Design II (W)</td>
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<td>EE 6191</td>
<td>Digital Systems Testing (F)</td>
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<tr>
<td>EE 6201</td>
<td>Automata Theory I (F)</td>
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<td>EE 6202</td>
<td>Automata Theory II (W)</td>
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<td>EE 6203</td>
<td>Automata Theory III (Su)</td>
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<td>EE 6251</td>
<td>Applied Electromagnetics (F)</td>
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<tr>
<td>EE 6252</td>
<td>Microwaves (Sp)</td>
<td>24</td>
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* Not for electrical or computer engineering majors
** One section, Oxford Study Abroad
<table>
<thead>
<tr>
<th>Course</th>
<th>Title</th>
<th>Number of Lecture Sections Offered</th>
<th>Average Section Enrollment</th>
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<tr>
<td>EE 4804</td>
<td>Neural Networks &amp; Fuzzy Logic in Control</td>
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<tr>
<td>EE 4813</td>
<td>Oxford Research Seminars*</td>
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<td>EE 4821</td>
<td>Laboratory for Biomedical Instrumentation</td>
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<td>1</td>
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<td>EE 4823</td>
<td>Lecture Portion of Biomedical Instrumentation*</td>
<td>3</td>
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<tr>
<td>EE 4824</td>
<td>Internetworking Programming</td>
<td>2</td>
<td>27</td>
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<tr>
<td>EE 4833</td>
<td>Case Studies in Rehabilitation Design*</td>
<td>1</td>
<td>9</td>
</tr>
<tr>
<td>EE 4834</td>
<td>Network Design &amp; Simulation</td>
<td>4</td>
<td>35</td>
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*Oxford Study Abroad Program
Graduate Special Topics Offerings

<table>
<thead>
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<th>Course</th>
<th>Title (Quarter Offered)</th>
<th>Enrollment</th>
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<tr>
<td>EE 8141</td>
<td>VLSI Prototyping Seminar (W)</td>
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<td>EE 8142</td>
<td>VLSI Prototyping Seminar (Sp)</td>
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<tr>
<td>EE 8143</td>
<td>VLSI Prototyping Seminar (Su)</td>
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<td>EE 8144</td>
<td>VLSI Prototyping Seminar (F)</td>
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<tr>
<td>EE 8145</td>
<td>Global Innovations in Engineering Seminar (F)</td>
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<td>EE 8145</td>
<td>Global Innovations in Engineering Seminar (W)</td>
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<td>EE 8145</td>
<td>Global Innovations in Engineering Seminar (Sp)</td>
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<tr>
<td>EE 8340</td>
<td>Design, Analysis, &amp; Optimization of Computer/Communication Networks (Su)</td>
<td>25</td>
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<tr>
<td>EE 8341</td>
<td>Fault-tolerant Computing (F)</td>
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<tr>
<td>EE 8341</td>
<td>Neuromorphic Analog VLSI Circuits (W)</td>
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<td>EE 8341</td>
<td>Nanostructure Optoelectronics (Sp)</td>
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<tr>
<td>EE 8342</td>
<td>Advanced Digital Systems Test (W)</td>
<td>19</td>
</tr>
<tr>
<td>EE 8345</td>
<td>Electronic Oscillators (W)</td>
<td>15</td>
</tr>
<tr>
<td>EE 8345</td>
<td>Electric Power Quality (Sp)</td>
<td>8</td>
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<tr>
<td>EE 8346</td>
<td>Computer-aided System Design</td>
<td>9</td>
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<tr>
<td>EE 8348</td>
<td>Design, Analysis, &amp; Optimization of Computer/Communication Networks (Sp)</td>
<td>27</td>
</tr>
<tr>
<td>EE 8349</td>
<td>Writing the Dissertation (F)</td>
<td>8</td>
</tr>
</tbody>
</table>

The Oxford Study Abroad Program consists of two excursions—one to England in the summer months and one to Australia and New Zealand in the winter months—during which students take courses in engineering, architecture, biology, and social sciences. In the England program, students took their coursework at Oxford University in England and then chose from one of four travel itineraries in continental Europe. In the Australia/New Zealand program, students took courses at Sydney, Queensland, Melbourne, and Victoria universities, with a stop in Fiji during the flight back to the U.S. During 1998-99, enrollment in the England program was 197, while the Australia/New Zealand program had an enrollment of 47. Arthur Koblasz and Paul J. Benkeser serve as Oxford’s program director and academic program director, respectively.

The Georgia Tech Lorraine (GTL) Summer Program made its debut in summer 1999, offering undergraduate students the opportunity to spend an academic term in a culturally rich environment in the heart of Europe. The program offers a combination of electrical engineering, mechanical engineering, management, and international affairs courses taught by regular faculty from the Georgia Institute of Technology. GTL continues to offer master’s and doctoral degrees from Georgia Tech and dual degrees programs offered by Georgia Tech and a host of European institutions.
College of Engineering Hall of Fame

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

James Furlow  
Retired  
Eastern Airlines  
B.E.E. 1931

John Hemby  
Retired  
Georgia Power  
B.E.E. 1950

Robert Usry  
Retired  
Southern Company  
B.E.E. 1951

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. Seven ECE alumni received this award.

Michael B. Bartlett  
Director, World Wide Bus Solutions  
Texas Instruments, Inc.  
B.E.E. 1976

Brook H. Byers  
Partner  
Kleiner, Perkins, Caufield, & Byers  
B.E.E. 1968

Steve W. Chaddick  
Senior Vice President  
Products & Technology  
CIENA Corporation  
B.E.E., 1974, M.S.E.E. 1982

Michael Levy  
President & CEO  
Sportsline USA  
B.E.E. 1969

Craig Mundie  
Senior Vice President  
Consumer Platforms  
Microsoft  
B.E.E. 1971, M.S.E.E. 1972

Aleksander Szlam  
Chair & CEO  
Melita International  
B.E.E. 1974, M.S.E.E. 1980

The Honorable Daniel Webster  
State of Florida, Speaker of the House  
B.E.E. 1971

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.

Randi L. Dulaney  
Senior Resource Manager  
Motorola, Inc.  
B.E.E. 1982

Scott Petty  
Attorney at Law  
Jones and Askew  
During FY 99, donors contributed $10,728,597 to ECE through the Georgia Tech Foundation. Below is a partial list of donors in alphabetical order.

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Advanced Micro Devices
Allegheny Teledyne, Inc.
Altera Corp.
Aluminum Company of America
American International Group, Inc.
AMP, Inc.
Ansoft Corp.
Appalachian Electronic Instruments, Inc.
Axis Systems
Banque Populaire de Lorraine
BF Goodrich
Cadence Design Systems, Inc.
Conexant Systems
Cypress Semiconductor Corp.
Dexter Electronic Materials Division
Eastman Kodak Co.
Exara Solar, Inc.
Electromagnetic Sciences, Inc.
Exxon Company, USA
Florida Power & Light Co.
Ford Motor Co.
Fujitsu Limited
Georgia Power Co.
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Hewlett-Packard Co.
Honeywell, Inc.
Hughes Research Laboratories, LLC
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John Wiley & Sons, Inc.
Lanier Worldwide, Inc.
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Matsushita Telecommunications Co.
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National Starch & Chemical Corp.
NCR Corp.
Nippon Hoso Kyokai
Norrell Corp.
Northern Telecom, Inc.
Northrop Grumman Corp.
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Rockwell Collins
Schlumberger Well Services
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Sun Microsystems, Inc.
The Southern Co.
Union Carbide Corp.
Yurie Systems, Inc.

**Professional, Research, & Academic Organizations**

Electric Power Research Institute
Emory University
Georgia Tech, College of Computing
Georgia Tech, School of Textile & Fiber Engineering
Institute of Electrical & Electronics Engineers
Morris Brown College
SCEEE

**Foundations**

Allied Signal Foundation
Duke Energy Corp. Foundation
GTE Foundation
IBM International Foundation
Motorola Foundation
Procter & Gamble Fund
Schlumberger Foundation, Inc.
Shelby Oil Co. Foundation
The John & Mary Franklin Foundation, Inc.
The Vattikuti Foundation
Union Camp Corp. Charitable Trust

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Mr. & Mrs. Nicholas Canaris
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Dr. George L. Cain, Jr.
Dr. & Mrs. Nicholas Canaris
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Dr. & Mrs. Nicholas Canaris
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Ms. Suzy Briggs
Dr. George L. Cain, Jr.
Mr. & Mrs. Nicholas Canaris
Dr. & Mrs. Nicholas Canaris
Mr. Thomas A. Connelly
Mr. James M. Crawford
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Mr. Alton P. Jensen
Ms. Pat Johnston
Ms. Cornelia G. Jolly
Dr. Edward B. Joy
Dr. Edward W. Kamen
Dr. Richard P. Kenan
Mr. A.T. Kersich
Mr. Harold S. Lanier
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Dr. Robert G. Loewy
Mr. & Mrs. F.J. Lundy
Mr. Kenneth E. MacKenzie
Mr. Joseph E. Mayes, Jr.
Dr. James D. Meindl
Dr. A.P. Sakis Meliopoulos
Dr. Russell M. Mersereau
Ms. Margaret M. Mitchell
Dr. Robert M. Nerem
Mr. George M. Nottingham, Jr.
Dr. John B. Peatman
Ms. Maxene L. Pentecost
Dr. Andrew F. Peterson
Dr. Hans B. Püttgen
Dr. Edward K. Reedy
Mr. Raymond H. Reynolds, Jr.
Dr. William T. Rhodes
Dr. Vernon T. Rhyne
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Allied Utility Network
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Atlanta, GA

Richard A. Snelling
Chair & CEO
Videoconferencing Services, Inc.
Norcross, GA

C. Meade Sutterfield
SSPCS Corporation
Atlanta, GA

*Joined the Board during 1998-99
Research Activity

During the period March 1998-March 1999, faculty members, in conjunction with their graduate students and peers, produced 118 journal publications, 222 conference presentations, eight books, and eight patents.

In FY 99, faculty members amassed 148 research grants and contracts, totaling $19,740,597, a new record high for ECE which represented 34 percent of the research funding in the College of Engineering and 9 percent of the entire Institute. Academic and research faculty members also submitted 221 proposals, totaling $62,951,639, to external agencies. Source percentages of ECE grants and contracts and proposals are detailed in the pie charts below.
## Financial Operations

### Financial Summary–State (FY 99 Initial Allocation)

<table>
<thead>
<tr>
<th>PERSONAL SERVICES</th>
<th>Instruction</th>
<th>General Research</th>
<th>Indirect Research</th>
<th>Total State</th>
<th>SPONSORED</th>
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<td>Regular Faculty</td>
<td>$4,381,775</td>
<td>$1,558,791</td>
<td>$130,000</td>
<td>$6,070,566</td>
<td>$3,480,173</td>
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<td>Part-time Faculty</td>
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<td>0</td>
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<tr>
<td>Summer Faculty</td>
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<td>0</td>
<td>0</td>
<td>510,000</td>
<td>236,000</td>
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<td>Graduate Assistants</td>
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<td>0</td>
<td>1,010,000</td>
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<td>0</td>
<td>60,000</td>
<td>135,000</td>
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<tr>
<td>Administrative</td>
<td>1,890,852</td>
<td>32,589</td>
<td>330,000</td>
<td>2,253,441</td>
<td>1,781,877</td>
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<tr>
<td><strong>Total Academic</strong></td>
<td>$7,822,627</td>
<td>$1,761,380</td>
<td>$460,000</td>
<td>$10,044,007</td>
<td>$8,083,050</td>
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### Staff
- $203,450
- $0
- $0
- $203,450
- $91,496

### Student Assistants
- 120,000
- 0
- 0
- 120,000
- 170,000

### Misc. Non-professional
- 10,000
- 0
- 0
- 10,000
- 26,500

### Total Non-academic*
- $333,450
- $0
- $0
- $333,450
- $287,996

### Total Pers. Svcs. $8,156,077 $1,761,380 $460,000 $10,377,457 $8,371,046

### NON-PERSONAL SERVICES
- Travel $20,000
- Operating Supplies 341,281
- Equipment 0

### Total Non-pers. Svcs. $361,281 $0 $201,262 $562,543 $6,312,000

### GRAND TOTAL $8,517,358 $1,761,380 $661,262 $10,940,000 $14,683,046

### Expenditure Summary

<table>
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<td>SPONSORED SUPPORT - INSTRUCTION</td>
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<td>Industry</td>
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<td>Other</td>
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<td><strong>Total Sponsored Instruction</strong></td>
<td>$2,057,857</td>
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<tbody>
<tr>
<td>SPONSORED SUPPORT - RESEARCH</td>
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<td>Federal</td>
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<td>State</td>
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<td>Other</td>
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<tr>
<td><strong>Total Sponsored Research</strong></td>
<td>$12,198,155</td>
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| Fringe Benefits (Spons.) | $1,232,097 |
| Total Sponsored         | $15,488,109 | $15,968,457 |

<table>
<thead>
<tr>
<th>FY98</th>
<th>FY99</th>
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<tbody>
<tr>
<td>STATE EXPENDITURES</td>
<td></td>
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<tr>
<td>Instruction</td>
<td>$8,819,268</td>
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<tr>
<td>General Research</td>
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<td>Indirect Research</td>
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<td><strong>Total Direct State</strong></td>
<td>$13,549,870</td>
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| Fringe Benefits           | $2,043,159                |
| Total State               | $15,593,029               |
| TOTAL EXPENDITURES        | $31,081,138               |
|                           | $32,898,759               |

*Excludes fringe benefits
**Direct expenditures
All figures exclude overhead charges
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.