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Number of Faculty (Tenure-track)

<table>
<thead>
<tr>
<th>Discipline</th>
<th>Number</th>
</tr>
</thead>
<tbody>
<tr>
<td>Engineering faculty</td>
<td>89</td>
</tr>
<tr>
<td>Electrical engineering</td>
<td>76</td>
</tr>
<tr>
<td>Computer engineering</td>
<td>13</td>
</tr>
<tr>
<td>Joint appointments</td>
<td>2</td>
</tr>
<tr>
<td>Adjunct and part-time faculty</td>
<td>27</td>
</tr>
<tr>
<td>Professors Emeriti</td>
<td>10</td>
</tr>
<tr>
<td>Research and administrative staff</td>
<td>125</td>
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Number of Undergraduate Students (Fall Quarter 1997)

<table>
<thead>
<tr>
<th>Discipline</th>
<th>Number</th>
</tr>
</thead>
<tbody>
<tr>
<td>Electrical engineering</td>
<td>953</td>
</tr>
<tr>
<td>Computer engineering</td>
<td>604</td>
</tr>
<tr>
<td>Total</td>
<td>1,557</td>
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Number of Graduate Students (Fall Quarter 1997)*

<table>
<thead>
<tr>
<th>Degree</th>
<th>Number</th>
</tr>
</thead>
<tbody>
<tr>
<td>Doctoral</td>
<td>408</td>
</tr>
<tr>
<td>Special</td>
<td>14</td>
</tr>
<tr>
<td>Master of Science/M.S.E.C.E.</td>
<td>268</td>
</tr>
<tr>
<td>Total</td>
<td>690</td>
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</table>

Number of Degrees Awarded

<table>
<thead>
<tr>
<th>Degree</th>
<th>Number</th>
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</thead>
<tbody>
<tr>
<td>B.E.E.</td>
<td>239</td>
</tr>
<tr>
<td>B.Cmp.E</td>
<td>82</td>
</tr>
<tr>
<td>M.S.</td>
<td>59</td>
</tr>
<tr>
<td>M.S.E.C.E.</td>
<td>127</td>
</tr>
<tr>
<td>Ph.D.</td>
<td>60</td>
</tr>
<tr>
<td>Total</td>
<td>567</td>
</tr>
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</table>

Grants and Contracts

<table>
<thead>
<tr>
<th>Type</th>
<th>Amount</th>
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</thead>
<tbody>
<tr>
<td>Total funds received on external/internal grants during FY 98</td>
<td>$14,857,349</td>
</tr>
<tr>
<td>Number of proposals submitted to external agencies during FY 98</td>
<td>164</td>
</tr>
</tbody>
</table>

Expenditure Summary

<table>
<thead>
<tr>
<th>Type</th>
<th>Amount</th>
</tr>
</thead>
<tbody>
<tr>
<td>State support</td>
<td>$15,593,029</td>
</tr>
<tr>
<td>Sponsored instruction support**</td>
<td>$2,057,857</td>
</tr>
<tr>
<td>Sponsored research support**</td>
<td>$12,198,155</td>
</tr>
<tr>
<td>Total expenditures**</td>
<td>$31,081,138</td>
</tr>
</tbody>
</table>

* Graduate program offers combined electrical and computer engineering degrees
** Direct expenditures
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 and varied educational programs to our students is reflected in the following highlights for 1997-98.

**Major Faculty, Staff and Student Honors**

**Steven W. McLaughlin** received the Presidential Early Career Award for Scientists and Engineers (PECASE) during a White House ceremony on November 3, 1997.

**G. Tong Zhou** received a National Science Foundation (NSF) CAREER Award.

**April S. Brown** and **John B. Peatman** were named as Fellows of the Institute of Electrical and Electronics Engineers (IEEE), with Dr. Brown being named as ECE's first female IEEE Fellow. ECE had 27 Fellows of the IEEE in 1997-98.

**Nikil S. Jayant** was named the John Pippin Chair in Wireless Systems and a Georgia Research Alliance (GRA) Eminent Scholar.

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

**Rao R. Tummala** received Georgia Tech's Distinguished Professor Award and the 1997 Electronics Manufacturing/Society for Manufacturing Engineers Total Excellence in Manufacturing Award.

**James H. McClellan** received Georgia Tech's 1940 W. Howard Ector Outstanding Teacher Award and ECE's Outstanding Teacher Award.

**Joseph L.A. Hughes** received Georgia Tech's Outstanding Service Award.

**Edward W. Kamen** founded the Center for Board Assembly Research.

**William T. Rhodes** was named as director of research at Georgia Tech Lorraine.

**Gary S. May** served as chair for the National Advisory Board for the National Society of Black Engineers and as a member of the NSF National Advisory Committee for Engineering and Committee for Equal Opportunity in Science and Engineering.

**Sharon K. Austin** received an Outstanding Research Support Personnel Performance Award.

**Carrie Carter-Coman** received the Sigma Xi Best Thesis Award for her doctoral work, which was advised by **April S. Brown**.

**David D. Clark** received the Center for the Enhancement of Teaching and Learning (CETL)/Dow Perseverance Award for overcoming extreme hardship in completing a degree program at Georgia Tech.

**Scott Allen Woldford** received the Phi Kappa Phi Faculty Recognition Award for attaining one of the highest academic averages in Georgia Tech's 1998 senior class.
Research and Educational Milestones

MOST DOCTORATES AWARDED For the third straight year, a new record has been set in the number of ECE doctoral graduates. Sixty students received their doctorates during 1997-98, which topped last year's record of 54. Additionally, the School awarded 239 bachelor of electrical engineering degrees, 82 bachelor of computer engineering degrees, 59 master of science degrees, and 127 master of science in electrical and computer engineering degrees.

INTELLECTUAL PRODUCTS During the period March 1997-March 1998, faculty, in conjunction with their graduate students and peers, produced 152 journal publications, 240 conference presentations, 22 books and parts of books, and 21 patents during the period March 1997-March 1998.

1997-98 GRANTS AND CONTRACTS ECE faculty amassed $14,857,349 in research grants and contracts in the last fiscal year. This total represents 27 percent of the research funding in the College of Engineering and 8 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 10th in the nation.

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 32 hours of course work; the M.S./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/semester/. Mandatory semester conversion advising sessions were held for first-year through fourth-year students beginning in Spring 1998.

ABET REVIEW Georgia Tech’s College of Engineering was selected to pilot the new Accreditation Board for Engineering and Technology Engineering Criteria 2000 (EC 2000) for visits occurring in the 1997-98 visit cycle. As one of the only five institutions selected, Georgia Tech was unique in being the only large, state-assisted engineering program to pilot the new criteria. ECE documentation was prepared during Spring and Summer 1997, and the evaluation visit occurred in early November. Both undergraduate degree programs are accredited by the Engineering Accreditation Commission of ABET.

COMPUTER-ENHANCED EDUCATION Beginning in summer 1997, with Thomas P. Barnwell, III providing Institute-wide leadership for this initiative, the School of ECE embarked on a program to enhance all of the required courses in the electrical engineering and computer engineering curricula using computer-assisted instruction. During the 1997-98 academic year, most of the required courses were developed and delivered using advanced computer enhanced instruction techniques, most notably with the World Wide Web. With a $1.3 million equipment grant from Hewlett-Packard shared with the College of Computing and the School of Literature, Communication, and Culture, ECE garnered three labs housing 10 HP development stations, two new servers supporting traditional World Wide Web environments and state-of-the-art technologies, and 40 secured laptops are available in two network enabled classrooms.

FACULTY PROMOTIONS Effective July 1, 1997, William D. Hunt was promoted to professor and Richard M. Bass, Stephen P. DeWeerth, Mary Ann Ingram, Henry L. Owen, David E. Schimmel, and D. Scott Wills were promoted to associate professor with tenure. Promotions effective July 1, 1998 include Sudhakar Yalamanchili to professor and John R. Barry and Joy Laskar to associate professor with tenure.

McLAUGHLIN’S PECASE AWARD Steven W. McLaughlin received a $500,000 Presidential Early Career Award for Scientists and Engineers (PECASE) during a White House ceremony in November 1997. These awards are presented to 60 young researchers from a variety of disciplines and are the highest honor bestowed by the U.S. government on outstanding scientists and engineers who are beginning their careers. Dr. McLaughlin is using his award to support his research in optical recording systems. In January 1998, Georgia Governor Zell Miller visited Dr. McLaughlin to congratulate him on his achievement and toured ECE’s telecommunications and digital signal processing facilities.

ANALOG GRADUATE FELLOWS PROGRAM In May 1998, Texas Instruments, Inc. (TI) continued its long-time partnership with ECE by donating $2.2 million to create the TI Graduate Fellows Program in Analog Integrated Circuit Design. Over a five-year period, the TI Graduate Fellows Program will support 60 graduate fellows in analog microelectronics. TI is the leading company in the analog/mixed signal market, and Georgia Tech produces more graduate-level, analog engineers than any other U.S. university.

CHADDICK AND HUANG ENDOWMENTS CIENA Corporation executives Steve W. Chaddick and Lawrence P. Huang established two ECE endowments during FY 98. Mr. Chaddick, senior vice president for products and technology, has funded the Steve W. Chaddick Endowed Chair in Electro-optics and the Steve W. Chaddick Fellows Program, which will consist of three graduate fellowship positions, at $1.65 million, with a supplemental $750,000 to be provided...
by the GRA. Mr. Huang, senior vice president for sales and marketing, has funded the Lawrence P. Huang Endowed Chair in Engineering Entrepreneurship, with an initial endowment of $1.5 million.

**GEORGIA TECH WIRELESS INSTITUTE** The Georgia Tech Wireless Institute (GTWI) held its inaugural research review in April 1998. During a one day workshop, 20 ECE faculty members demonstrated their specialized skills and training to industry representatives in the wireless communications area. Equally important, the GTWI will give member companies improved access to and identification of many well qualified students who are pursuing research designs and developments in wireless technologies. Modeled on ECE's successful Georgia Tech Analog Consortium, it is anticipated that the GTWI's yearly activities and benefits will include bi-annual research reviews given by faculty and students; access to student biographical information; visits by one or more of the GTWI faculty to member companies; notification of related technical publications, including M.S. and Ph.D. theses; and opportunities for providing direction to future GTWI activities.

**GTL-CNRS TELECOM** During a visit to Georgia Tech Lorraine (GTL) in February 1998, Georgia Tech President Wayne Clough signed a partnership agreement with Centre National de la Recherche Scientifique (CNRS). The joint Georgia Tech-CNRS laboratory was officially inaugurated in June 1998. GTL-CNRS Telecom specializes in the application of optical methods and technologies to enhance the performance of a variety of telecommunications systems.

**MICROELECTRONICS RESEARCH CENTER** 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 will lead 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. James D. Meindl, who leads the Focus Center and who also serves as MiRC director, also initiated the development of a CMOS baseline process facility. Led by Zhiping (James) Zhou, a MiRC senior research engineer and a veteran semiconductor entrepreneur, this facility was established in the MiRC so that a whole range of advanced CMOS-related research and educational programs would be created and/or supported at Georgia Tech. By March 1998, Dr. Zhou and his MiRC colleague, Laureen Rose, designed and fabricated the first functional NMOS (N-channel metal-oxide-semiconductor) device structure made at Georgia Tech. The development of the NMOS structure was a major step forward to the completion of the CMOS baseline process facility, which produced its first chip in August 1998.

**NEW MARC AND PRC FACILITIES** In October 1997, electronics industry leaders, state officials, and Georgia Tech researchers celebrated the opening of three Manufacturing Research Center (MaRC) and Packaging Research Center (PRC) electronics research facilities—the Next Generation Substrate Laboratory, the Next Generation Module Laboratory, and the Center for Board Assembly Research (CBAR). These new facilities, which are housed in the MaRC, allow engineers to create the next generation of semiconductor packaging and printed wiring board assembly. In total, the facilities represent a three-year, $30 million investment by the GRA, Georgia Tech, the State of Georgia, the National Science Foundation, and many industrial partners. The PRC is led by Rao R. Tummala, Pettit Chair Professor in Electronics Packaging and GRA Eminent Scholar, and CBAR is led by Edward W. Kamen, Julian T. Hightower Professor in Manufacturing Engineering and MaRC associate director.

**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 the multimedia director at Bell Labs in Murray Hill, N.J., Dr. Jayant also serves as director of the newly established Georgia Tech Wireless Institute. An ECE faculty member since 1975, Dr. Smith also serves as a Regents’ Professor and as chair of the School’s electromagnetics technical interest group.

**DEVELOPMENT ACTIVITIES** In addition to the TI Graduate Fellows Program and the endowments made by alumni Chadick and Huang, several more gifts were made to ECE during FY 98. Intel Corporation continued its tradition of significant, in-kind gifts by providing 32 computers. Tektronix donated $250,000 of equipment, including 20 new oscilloscopes and 23 state-of-the-art logic analyzers. Microsoft Corporation, Advanced Micro Devices, Motorola, Altera Corporation, and Xilinx, Inc. also made major gifts in the last year.
Four new faculty members joined the School of Electrical and Computer Engineering, while two retired, one resigned, and one died, bringing the total number of faculty members employed during 1997-98 to 89.

Paul E. Hasler and David R. DeBoer joined the School as assistant professors in the areas of electronic design and applications and electromagnetics, respectively, earlier in the fiscal year. In late FY 98, Stephen E. Ralph and Emmanouil M. Tenteris joined ECE as an associate professor in optics and photonics and as an assistant professor in electromagnetics, respectively, and William L. Ditto, an associate professor in the School of Physics, became a joint faculty member in ECE. After the close of FY 98, Nikil S. Jayant was appointed as the John Pippin Chair in Wireless Systems and a Georgia Research Alliance Eminent Scholar, and Vincent J. Mooney and Chai-Keong Toh joined ECE as assistant professors in computer engineering and telecommunications, respectively.

At the end of FY 98, Cecil O. Alford, professor of computer engineering, and Edward B. Joy, professor of electromagnetics, retired from ECE, and Daniel J. Blumenthal resigned as an assistant professor in optics and photonics. Demetrius T. Paris, whose integrity and accomplishments were of great importance to ECE and Georgia Tech, died in August 1998 after suffering a cerebral hemorrhage.

Eighty-two percent of the ECE faculty is tenured, with all members holding doctorates. The list of faculty includes all faculty employed during FY 98.

### ACADEMIC FACULTY

- **Regents’ Professors**
  - Thomas K. Gaylor
    - 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 and John and Marilu McCarty Chair of Electrical Engineering, Ph.D., Massachusetts Institute of Technology
  - Glenn S. Smith
    - Ph.D., Harvard University

- **Professors**
  - Ian F. Akyildiz
    - Ph.D., University of Erlangen
  - Cecil O. Aford
    - Ph.D., Mississippi State University
  - Phillip E. A llen
    - 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; Ph.D., Georgia Institute of Technology
  - John F. Dorsey
    - Ph.D., Michigan State University
  - Robert K. Feeney
    - Ph.D., Georgia Institute of Technology
  - Monson H. Hayes, III
    - Sc.D., Massachusetts Institute of Technology
  - David R. Hertling
    - 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
Edward B. Joy  
Ph.D., Georgia Institute of Technology

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. Püttgen  
Associate Chair for External Affairs, President of Georgia Tech Lorraine, and Director of the National Electric Energy Testing, Research, & Applications Center (NEETRAC); 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  
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

Assoc Professors

Mark G. Allen  
Ph.D., Massachusetts Institute of Technology

Richard M. Bass  
Ph.D., University of Illinois at Urbana-Champaign

Miroslav M. Begovic  
Ph.D., Virginia Polytechnic Institute and State University

Paul J. Benkiser  
Ph.D., University of Illinois at Urbana-Champaign

Martin A. Brooke  
Ph.D., University of Southern California

Ardal S. Brown  
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. Haberler  
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. Keezer  
Ph.D., Carnegie-Mellon University

Arthur Koblasz  
Ph.D., California Institute of Technology

Chin Tau Lea  
Ph.D., University of Washington

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

Petros Maragos  
Ph.D., Georgia Institute of Technology

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

Sudhakar Yalamanchili  
Ph.D., University of Texas at Austin

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

Daniel C. Fielder, 1948-88  
(employed with ECE on a part-time basis)

Joseph L. Hammond, 1955-84  
(now employed with Clemson University)

John W. Hooper, 1957-88


George P. Rodrigue, 1968-96

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

Caithlin Flowers, Georgia Tech Research Institute

Bryan George, Texas Instruments

Gary G. Gimmestad, Georgia Tech Research Institute

Nile F. H. Hartman, Georgia Tech Research Institute

Bruce Harvey, Georgia Tech Research Institute

William A. Holm, Georgia Tech Research Institute

Ramin Murenzi, Clark Atlanta University

Craig Richardson, Atlanta Signal Processors, Inc.

Stephen B. Wicker, Cornell University

Jeffrey J. Sitterle, Georgia Tech Research Institute

Christopher Summers, 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

In Remembrance of

DEMETRIUS T. PARIS

ECE and Georgia Tech lost one of their true pillars of strength and dedication when Demetrius T. Paris died on August 29, 1998 at the age of 69. During his more than 40 years at Tech, Dr. Paris served as the School's director from 1969-89, the Institute's vice president for research and graduate programs from 1989-95, and most recently as ECE's research coordinator. He hired 63 tenure-track faculty in the School, 46 of whom are still active today, and established the Microelectronics Research Center and the Institute's graduate co-op program.

Dr. Paris will always be remembered as a man of integrity, intellect, vision, and enduring dedication who turned an ordinary school into something extraordinary. He is sorely missed.
### Technical Interest Groups

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

#### Computer Engineering
- Ian F. Akyildiz
- Cecil O. Alford
- Thomas P. Barnwell, III
- Abhijit Chatterjee
- Stephen P. DeWeerth
- James O. Hamblen
- Joseph L.A. Hughes
- David C. Keezer
- Vijay K. Madisetti
- James H. McClellan
- Henry L. Owen
- John B. Peatman
- David E. Schimmel
- Jay H. Schlag
- Gordon L. Stüber
- Madhavan Swaminathan
- Rao R. Tummala
- D. Scott Wills*
- Linda M. Will
- Sudhakar Yalamanchili

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

#### Electric Power
- Richard M. Bass
- Miroslav M. Begovic
- John F. Dorsey
- Thomas G. Habetler
- A.P. Sakis Meliopoulos
- Hans B. Pittgen*
- Ajeeet Rohatgi
- William E. Sayle
- David G. Taylor
- George J. Vachtsevanos
- Roger F. Webb

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

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

#### Microelectronics
- Mark G. Allen
- Phillip E. Allen
- Kevin F. Brennan
- Martin A. Brooke
- April S. Brown
- J. Alvin Connelly
- Timothy J. Drabik
- Robert K. Feeney
- Thomas K. Gaylord
- Elias N. Glytsis
- David R. Hertling
- Richard J. Higgins
- Joseph L.A. Hughes
- William D. Hunt*
- Nan Marie Jokerst
- David C. Keezer
- Richard P. Kenan
- Joy Laskar
- W. Marshall Leach, Jr.
- Gary S. May
- James D. Meindl
- Stephen E. Ralph
- Dale C. Ray
- Ajeet Rohatgi
- William E. Sayle
- Jay H. Schlag
- Rao R. Tummala
- John P. Uyemura
- Carl M. Verber
- Mary Ann Ingram
- Richard P. Kenan*
- Chin-Tau Lea
- Stephen E. Ralph
- William T. Rhodes
- Ajeet Rohatgi
- Glenn S. Smith
- Carl M. Verber
- Erik I. Verriest

#### Optics and Photonics
- Daniel J. Blumenthal
- Kevin F. Brennan
- April S. Brown
- John A. Buck
- W. Russell Callen, Jr.
- Timothy J. Drabik
- Thomas K. Gaylord
- Elias N. Glytsis
- Richard J. Higgins
- William D. Hunt
- Nan Marie Jokerst

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

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

*Chair
ECE Standing Committees

Computer Resources
K.-H. Michael Fan
Bonnie S. Heck
Mary Ann Ingram
Petros Maragos
David E. Schimmel*
Waymond R. Scott, Jr.
Douglas B. Williams

Continuing Education
Cecil O. Alford
Stephen P. DeWeerth
Robert K. Feeney
Thomas G. Habetler
Monson H. Hayes, III
David R. Hertling
Edward B. Joy
Vijay K. Madisetti*
David G. Taylor

Faculty Honors
Nan Marie Jokerst
W. Marshall Leach, Jr.
William T. Rhodes
Ajeet Rohatgi
Ronald W. Schafer
Paul G. Steffes*
Gordon L. Stüber

Graduate
Mark G. Allen
Phillip E. Allen
Miroslav M. Begovic
April S. Brown
Elias N. Glytsis
Joseph L. A. Hughes
Russell M. Mersereau
Andrew F. Peterson*
Hans B. Püttgen
Dale C. Ray (ex-officio)
D. Scott Wills

Graduate Student Recruitment
John R. Barry
Paul J. Benkeser*
Kevin F. Brennan
Abhijit Chatterjee
Mark A. Clements
Thomas K. Gaylord
William D. Hunt
A.P. Sakis Meliopoulos

Laboratories
Thomas P. Barnwell, III
John F. Dorsey*
Michael D. Furman
James O. Hamblen
Chin-Tau Lea
John B. Peatman
Jay H. Schlag

Peer Review
Cecil O. Alford
Thomas P. Barnwell, III
Mark A. Clements
J. Alvin Connelly*
Thomas K. Gaylord
William D. Hunt
Edward W. Kamen
Hans B. Püttgen
Glenn S. Smith
Gordon L. Stüber
John Uyemura

Seminar
Ian F. Akyildiz
Richard J. Higgins
Edward W. Kamen*
James D. Meindl
Rao R. Tummala
Carl M. Verber

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

Student/Faculty
John A. Buck
Paul E. Hasler
Arthur Koblasz*
Steven W. McLaughlin
Mohamed F. Moad
Henry L. Owen
Madhavan Swaminathan
Linda M. Wills
G. Tong Zhou

Research
Daniel J. Blumenthal
John A. Copeland*
Timothy J. Drabik
David C. Keezer
Demetrius T. Paris
Glenn S. Smith
George J. Yachtsevanos
Erik I. Verriest

Undergraduate
Richard M. Bass
Martin A. Brooke
Richard P. Kenan*
Gary S. May
James H. McClellan
William E. Sayle (ex-officio)
John P. Uyemura
Yorai Y. Wardi
Sudhakar Yalamanchili

*Committee chair
Faculty Service on Institute Governing Bodies and Committees

Executive Board
William E. Sayle

Academic Senate
Phillip E. Allen
Richard M. Bass
Richard P. Kenan
William E. Sayle
John P. Uyemura

General Faculty Assembly
Phillip E. Allen
Richard M. Bass
Paul J. Benkeser
Richard P. Kenan
William E. Sayle
John P. Uyemura

Institute Standing Committees

Faculty Honors
William E. Sayle (liaison from Executive Board)

Faculty Status and Grievance Committee
Mark A. Clements*

Graduate
April S. Brown
Andrew F. Peterson

Statutes
John F. Dorsey

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

Student Activities
Arthur Koblasz

Student Honor
Gary S. May

Student Regulations
Joseph L.A. Hughes*
Mary Ann Ingram

Undergraduate Curriculum
Richard P. Kenan

Welfare and Security
Paul G. Steffes

*Chair
<table>
<thead>
<tr>
<th>Date Range</th>
<th>Course Title</th>
<th>Administrator(s)</th>
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<tbody>
<tr>
<td>September 3-October 22, 1997</td>
<td>Fundamentals of Engineering</td>
<td>W. Russell Callen, Jr.</td>
</tr>
<tr>
<td>September 15-19, 1997</td>
<td>Near-field Antenna Measurements and Microwave Holography</td>
<td>Edward B. Joy</td>
</tr>
<tr>
<td>September 22-24, 1997</td>
<td>Power System Electrical Transient and Protection</td>
<td>A.P. Sakis Meliopoulos</td>
</tr>
<tr>
<td>October 14-17, 1997</td>
<td>Power System Relaying: Theory and Application</td>
<td>A.P. Sakis Meliopoulos and Miroslav M. Begovic</td>
</tr>
<tr>
<td>November 5-7, 1997</td>
<td>Power Distribution System Grounding and Transients</td>
<td>A.P. Sakis Meliopoulos</td>
</tr>
<tr>
<td>November 18-20, 1997</td>
<td>Modern Energy Management Systems</td>
<td>A.P. Sakis Meliopoulos</td>
</tr>
<tr>
<td>December 8-12, 1997</td>
<td>Far-field, Anechoic Chamber, Compact and Near-field Antenna Measurements</td>
<td>Edward B. Joy</td>
</tr>
<tr>
<td>February 2-6, 1998</td>
<td>Antenna Engineering Including Cellular, Mobile, and Portable Antennas</td>
<td>Edward B. Joy; Waymond R. Scott, Jr.; and Glenn S. Smith</td>
</tr>
<tr>
<td>February 9-12, 1998</td>
<td>Substation Grounding Practice and Analysis</td>
<td>Edward B. Joy</td>
</tr>
<tr>
<td>April 1-3, 1998</td>
<td>Power Electronic Devices, Circuits, and Systems</td>
<td>Richard M. Bass and Thomas G. Habetler</td>
</tr>
<tr>
<td>April 8-10, 1998</td>
<td>Integrated Grounding System Design</td>
<td>A.P. Sakis Meliopoulos</td>
</tr>
<tr>
<td>April 27-29, 1998</td>
<td>Electrical Issues in Packaging: Digital, RF, and Mixed Signal Applications</td>
<td>Joy Laskar, Andrew F. Peterson, and Madhavan Swaminathan</td>
</tr>
<tr>
<td>May 4-5, 1998</td>
<td>Fault Disturbance Analysis Conference</td>
<td>A.P. Sakis Meliopoulos</td>
</tr>
<tr>
<td>May 6-8, 1998</td>
<td>Protective Relaying Conference</td>
<td>A.P. Sakis Meliopoulos</td>
</tr>
</tbody>
</table>
Research and Administrative Personnel

One hundred twenty-five administrative and research staff members were employed during 1997-98. There were 13 terminations and resignations, 22 new hires, three promotions, and one death. As of June 30, 1998, there were 108 administrative and research employees, who are listed below.

Research Personnel

Randal T. Abler Research Engineer II
Brian Barnes Research Engineer I
Keith Bernhardt Research Engineer I
Swapak K. Bhattacharya Senior Research Scientist
Thomas C. Champion Research Engineer I
Larry T. Coffeen Research Engineer II
Lorand Csiszar Research Technologist II
David R. DeBoer Research Engineer II
William A. Doolittle Research Engineer II
Parag Doshi Research Engineer II
Abasifreke U. Ebong Research Engineer II
Peter W. Flur Research Engineer II
Steven J. Flynn Research Engineer II
Michael D. Furman Research Scientist I
Alex Z. Goldstein Senior Research Engineer and General Manager, NEETRAC
Verlin Stanley Harper Research Engineer II
Richard A. Hartlein Senior Research Engineer
Lonnie D. Harvel Research Scientist II and Director of Computer Enhanced Educational Services
Raymond C. H ill Research Technologist II
Sachin Kamra Research Scientist II
Frank C. Lambert Senior Research Engineer
Jeong-Bong Lee Research Engineer II
Yuan T. Li Research Engineer II
François J. Malassenet Academic Professional
Ramanamurty Malladi Research Engineer II
Muid Mufti Postdoctoral Fellow
Zhao Yu N in Visiting Research Scientist
Jae Y. Park Research Engineer II
Thomas J. Parker Research Technologist II
Shashikant G. Patel Research Engineer II
Samuel F. Smith Research Scientist I
W. Whitfield Smith Senior Research Engineer
Paul L. Springer Research Engineer II
Harry T. Sullivan Research Scientist I
Dean A. Sutter Electrical Engineer III

David S. Webb Senior Academic Professional and Assistant to the Chair for Computer Support
Irene G. Wells Research Engineer II
Michael Woodberry Research Engineer I
Ilgu Yun Postdoctoral Fellow

Administrative Staff

Jeanette G. Ayeni Accountant II
Robert C. Boozer Business Operations Manager, NEETRAC
Thomas E. Brewer Laboratory Manager II and Assistant to the Chair
Suzy Briggs Director of Development
Lynda Buescher Human Resources Specialist
Darlene Bush Administrative Assistant I
Dale E. Callaway Research Coordinator I
Mary Jane Chappell Administrative Assistant II
Kathy B. Cheek Administrative Assistant II
Michel M. Collins Senior Administrative Secretary
Leyla Sutcu Conrad Academic Professional
Sherrie Cooper Academic Assistant I
Sharon Austin C rouch Financial Manager II
Maryjo Davis Academic Advisor I
Dianne E. Demillo Administrative Assistant II
Wayne Devezin Research Machinist
Charlotte A. Doughty Senior Administrative Secretary
Heather L. Emmert Project Coordinator I
Lalauna F. Ennis Project Coordinator I
Barry N. Fairley Research Coordinator I
Diana L. Fouts Graphics Specialist
Kayron C. Gilltrap Administrative Coordinator
Pamela F. Halverson Administrative Assistant II
Vincent Harriss Graphics Specialist
David W. Harris Research Coordinator I
<table>
<thead>
<tr>
<th>Name</th>
<th>Title/Position</th>
</tr>
</thead>
<tbody>
<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>Joseph F. Jackson</td>
<td>Director, 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>Debra B. Kelley</td>
<td>Administrative Manager I</td>
</tr>
<tr>
<td>Deborah K. King</td>
<td>Senior Administrative Secretary</td>
</tr>
<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>Pamela A. Luther</td>
<td>Accounting Manager I</td>
</tr>
<tr>
<td>W. Bruce McFarland</td>
<td>Laboratory Coordinator</td>
</tr>
<tr>
<td>Thomas McKoon</td>
<td>Research Coordinator II</td>
</tr>
<tr>
<td>Doria Moore</td>
<td>Accountant II</td>
</tr>
<tr>
<td>Gregory Motlasz</td>
<td>Computer Services Specialist III</td>
</tr>
<tr>
<td>Marilouise Mycko</td>
<td>Administrative Supervisor 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>James I. Nowell</td>
<td>Research Machinist</td>
</tr>
<tr>
<td>Gail O. Palmer</td>
<td>Program Specialist</td>
</tr>
<tr>
<td>Maxene L. Pentecost</td>
<td>Administrative Coordinator</td>
</tr>
<tr>
<td>Boyd M. Pettitt</td>
<td>Research Coordinator II</td>
</tr>
<tr>
<td>Gail A. Reeves</td>
<td>Administrative Coordinator</td>
</tr>
<tr>
<td>Suellen Robertson</td>
<td>Research Coordinator II</td>
</tr>
<tr>
<td>Carl A. Rust</td>
<td>Business Operations Manager, PRC</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>Fred T. Stanley</td>
<td>Research Coordinator I</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>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. W. Hitehurst</td>
<td>Computer Services Specialist II</td>
</tr>
<tr>
<td>Dean Williams</td>
<td>Research Coordinator I</td>
</tr>
<tr>
<td>Rochelle Y. Williams</td>
<td>Accountant II</td>
</tr>
</tbody>
</table>

Contact Information

<table>
<thead>
<tr>
<th>Phone Number</th>
<th>Description</th>
</tr>
</thead>
<tbody>
<tr>
<td>404.894.2901</td>
<td>ECE Main Office</td>
</tr>
<tr>
<td>404.894.4468</td>
<td>Chair, Roger P. Webb</td>
</tr>
<tr>
<td>404.894.2911</td>
<td>Operations &amp; Faculty Development, J. Alvin Connelly</td>
</tr>
<tr>
<td>404.894.2904</td>
<td>Graduate Affairs, David R. Hertling</td>
</tr>
<tr>
<td>404.894.2930</td>
<td>Computer Engineering &amp; Program Development, Joseph L. A. Hughes</td>
</tr>
<tr>
<td>404.894.2927</td>
<td>External Affairs, Hans B. Pütten</td>
</tr>
<tr>
<td>404.894.4740</td>
<td>Undergraduate Affairs, William E. Sayle</td>
</tr>
<tr>
<td>404.894.2946</td>
<td>Undergraduate Advising, Mary Jo Davis</td>
</tr>
<tr>
<td>404.894.2905</td>
<td>Assistant to the Chair for Computer Support, David S. Webb</td>
</tr>
<tr>
<td>404.894.2903</td>
<td>Director-Operations, Joseph F. Jackson</td>
</tr>
<tr>
<td>404.894.3058</td>
<td>Director of Computer Enhanced Educational Services, Lonnie D. Harvel</td>
</tr>
<tr>
<td>404.894.4769</td>
<td>Accounting, Sharon Austin Crouch</td>
</tr>
<tr>
<td>404.894.4025</td>
<td>Development-Corporate, Harry L. Vann</td>
</tr>
<tr>
<td>404.894.5210</td>
<td>Development-Alumni, Suzy Briggs</td>
</tr>
<tr>
<td>404.894.7574</td>
<td>Human Resources, Lynda Buescher</td>
</tr>
<tr>
<td>404.894.2906</td>
<td>Public Relations, Jacqueline L. Nemeth</td>
</tr>
</tbody>
</table>
Students

Student Honors and Awards

Jeff Antkowiak, Peter Bergstrom, Nathan Scott Clements, David Cresci, Mark Funke, Ajay Gummalla, Barry Hunt, Jengfeng Li, Nancy B. List, Jeremy Marks, James Mossman, Jordan Rosenthal, and Christina Siracusa each received an ECE Graduate Teaching Assistant Award.

Steven Bennett received the William Gilmer Perry Award for writing the best paper in an English 1001, 1002, or 2000-level class. The award is presented by the School of Literature, Communication, and Culture.

Sumit Milap Bhansali, Sina Eghrari, and Matthew W. Neal 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.

Shannon Brenner received a Georgia Tech Faculty Women's Club Scholarship, which is given to sons or daughters of Georgia Tech employees.

Amy Carnes, James DeBardelaben, Michael Howard, Paul Juodawlkis, and John Kirt received the Faculty Award for ECE, which is given to the students who, in the opinion of the faculty, have done the most to improve the educational environment within the School or the Institute and who have contributed significantly to both student welfare and student-faculty interactions.

Carrie Carter-Coman received the Sigma Xi Best Thesis Award. Advised by April S. Brown, her doctoral thesis was entitled “Compound Semiconductor Compliant Substrates for Extension of the Conventional Critical Thickness in Mismatched Overlayers and Strain-modulated Epitaxy.”

Kwang Lim Choi was one of 11 students who received an educational grant from the International Microelectronics and Packaging Society for the 1997-98 academic year. His Ph.D. advisor is Madhavan Swaminathan.

David D. Clark received the Center for the Enhancement of Teaching and Learning (CETL)/Dow Perseverance Award for overcoming extreme hardship in completing a degree program at Georgia Tech.

Sean Forney received the Outstanding ECE Senior Award for his high scholastic average and active role in extracurricular activities.

Yiteng Huang, Kyung Hun Jung, Sun Wook Kang, and Payam Torab Jahromi received the Colonel Oscar P. Cleaver Award for their outstanding doctoral preliminary examination scores.

Keith Lee received a Georgia Tech Society of Black Engineers Faculty Advisor Excellence Award for his outstanding scholarship and leadership.

Chauncey McIntosh received the Vision of Success Scholarship, which is sponsored by EDS. The award is presented to an outstanding minority student during his or her junior and senior years.

J. Scott Rodgers competed in the National Wheelchair Fencing Contest and garnered first place awards in épée and foil and a second place award in sabre. Mr. Rodgers also made the national team to compete in the World Championships in July-August 1998.

Norman W. Chin See received the Outstanding ECE Sophomore Award for having the highest academic average in the class.

Jeff Spires, Scott Wolford, and Jason Lippert received the Outstanding ECE Senior Scholar Award for having the highest academic averages in their class.

Scott Allen Wolford received the Phi Kappa Phi Faculty Recognition Award for attaining one of the highest academic averages in Georgia Tech's 1998 senior class.

Tina Hudson Zobel received a CETL/Amoco Foundation Graduate Teaching Assistant Teaching Excellence Award.

Enrollment (Fall 1997)

<table>
<thead>
<tr>
<th>Degree</th>
<th>Women</th>
<th>African Americans</th>
<th>Other Minorities</th>
</tr>
</thead>
<tbody>
<tr>
<td>B.E.E.</td>
<td>953</td>
<td>12%</td>
<td>15%</td>
</tr>
<tr>
<td>B.Cmp.E.</td>
<td>604</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Total</td>
<td>1,557</td>
<td>12%</td>
<td>15%</td>
</tr>
<tr>
<td>M.S./M.S.E.C.E.</td>
<td>268</td>
<td>14%</td>
<td>8%</td>
</tr>
<tr>
<td>Special</td>
<td>14</td>
<td></td>
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</tr>
<tr>
<td>Ph.D.</td>
<td>408</td>
<td>14%</td>
<td>8%</td>
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<tr>
<td>Total</td>
<td>690</td>
<td>14%</td>
<td>8%</td>
</tr>
<tr>
<td>Total</td>
<td>2,247</td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

*Includes Hispanics, Native Americans and persons of multi-racial origins.
Mohammed S. Al-Numay—Advisor: Taylor—Summer 1997
Thesis: Discrete-time Modeling and Tracking Control of Pulse-width Modulated Systems
Current Status: Employed as an assistant professor in the Department of Electrical Engineering at King Saud University in Riyadh, Saudi Arabia.

Paul D. Anderson—Advisor: Ingram—Fall 1997
Thesis: Array Design and Beamforming for Multi-scenario Mobile Satellite Earth Terminals
Current Status: Employed as an engineer at Scientific Research Corporation in Marietta, GA.

Scott A. Borgsmiller—Advisor: Steffes—Winter 1998
Thesis: Effects of Atmospheric Scintillation in Ka-band Satellite Communications
Current Status: Employed as a scientist at COMSAT Laboratories in Clarksburg, MD.

Marcus A. Cash—Advisor: Habetler—Spring 1998
Thesis: Detection of Turn Faults Arising from Insulation Failure in the Stator Windings of AC Machines
Current Status: Employed as a senior research engineer for the U.S. Air Force, Eglin Air Force Base, FL.

Fred Yuah-Huei Chiou—Advisor: Barnwell—Winter 1998
Current Status: Employed as a senior engineer at Glenayre Electronics, Inc. in Duluth, GA.

Thesis: A Low-voltage High-resolution Audio Delta-sigma Modulator
Current Status: Employed as an electrical engineer at Rockwell Semiconductor Systems in Newport Beach, CA.

Bruce R. Crain—Advisor: Peterson—Winter 1998
Thesis: Vector Finite Element Methods for Spurious-free Solutions of Unbounded Dielectric and Ferrite Loaded Waveguiding Structures
Current Status: Employed at Lockheed-Martin in Marietta, GA.

Thesis: An Optimization-based Approach for Cost-effective Embedded DSP Design
Current Status: Employed with Morgan Stanley Investment Company in New York City, NY.

Thesis: Telemedicine Applications of Image Subband Coding at Low Bit Rates
Current Status: Employed as a scientific engineer at the Department of Electrical Engineering at the University of British Columbia in Vancouver, B.C.

Parag M. Doshi—Advisor: Rohatgi—Summer 1997
Current Status: Employed as a research engineer in the School of Electrical and Computer Engineering at the Georgia Institute of Technology in Atlanta, GA.

Thomas W. Egolf—Advisor: Madisetti—Fall 1997
Thesis: Virtual Prototyping of Embedded Digital Systems: Hardware/Software Co-design, Integration, and Test
Current Status: Employed at Lucent Technologies in Allentown, PA.

Shahram Famorzadeh—Advisor: Madisetti—Fall 1997
Current Status: Employed at Rockwell Semiconductor Systems in Newport Beach, CA.

Vivek Garg—Advisor: Schimmel—Summer 1997
Thesis: Mechanisms for Hiding Communication Latency in Data Parallel Architectures
Current Status: Employed at Intel in Folsom City, CA.

Michael Gazark—Advisor: Kamen—Summer 1997
Thesis: Monitoring and Control of Manufacturing Systems Based on the Max-plus Formulation
Current Status: Employed as a research scientist at MIT Lincoln Labs in Lexington, MA.

Thesis: Simultaneous Control-structure Optimization of Power Converters
Current Status: Employed as an electronics design engineer at American Power Conversion Co. in Billerica, MA.

Farzad Ghanadian—Advisor: Alford—Summer 1997
Thesis: The Structure of the Solution Space and Its Relation to the Execution Time of Evolutionary Algorithms with Applications
Current Status: Employed at AT&T in Holmdel, NJ.
Mathieu C. Hans—Advisor: Schafer—Spring 1998
Thesis: Optimization of Digital Audio for Internet Transmission
Current Status: Employed as a software design engineer at Hewlett-Packard Laboratories in Palo Alto, CA.

Michael A. Hopper—Advisor: D.S. Wills—Fall 1997
Thesis: A Compiler Framework for Multithreaded Parallel Systems
Current Status: Employed as a senior software engineer at CheckFree Corporation in Norcross, GA.

Yong-Jun Kim—Advisor: M. Allen—Summer 1997
Thesis: Application of Polymer/Metal Multilayer Processing Techniques to Microelectromechanical Systems
Current Status: Employed at Samsung Electronics Co., Ltd. in Suwon City, Kyungki-Do, South Korea.

Timothy J. Klausutis—Advisor: Madisetti—Winter 1998
Thesis: Adaptive Lapped Transforms with Applications to Image Coding
Current Status: Employed with the U.S. Air Force and the University of Florida in Gainesville, FL.

Sasidhar Koppolu—Advisor: Chatterjee—Fall 1997
Thesis: Parallel Test Techniques for Multi-chip Modules
Current Status: Employed as a lecturer at Sree Nidhi College of Engineering in Hyderabad, India.

Thomas W. Krygowski—Advisor: Rohatgi—Spring 1998
Thesis: A Novel Simultaneous Diffusion Technology for Low-cost High-efficiency Silicon Solar Cells
Current Status: Employed at Sandia National Laboratories in Albuquerque, NM.

Thesis: A Supervised Neural Network Fault Discriminating System Implementation for On-line Condition Monitoring and Diagnostics for Induction Machines

Abelardo Lopez-Lagunas—Advisor: D.S. Wills—Fall 1997
Thesis: Hardware Support for Fine-grain Parallel Architectures
Current Status: Employed as a postdoctoral fellow at Stanford University in Stanford, CA.

Amjad A. Luna—Advisor: Wicker—Spring 1998
Thesis: The Design and Implementation of Trellis-based Soft Decision Decoders for Block Codes
Current Status: Employed as an assistant professor at the Technical University of Pakistan.

Waqar Mahmood—Advisor: Vachtsevanos—Summer 1997
Thesis: Intelligent Modeling for Control, Reconfiguration, and Optimization of Discrete Event Systems
Current Status: Employed at Ciena Corporation in Savage, MD.

Alvaro L. Marenco—Advisor: Madisetti—Summer 1997
Thesis: On Homomorphic Deconvolution of Bandpass Signals and Practical Applications
Current Status: Employed as a technical staff member at Lucent Technologies in Murray Hill, NJ.

Gilles P. Mauroy—Advisor: Kamen—Summer 1997
Thesis: Multiple Target Tracking Using Neural Networks and Set Estimation
Current Status: Employed as a systems engineer at Retek in Atlanta, GA.

Joseph W. Monaco—Advisor: M. Smith—Fall 1997
Thesis: Motion Models for Video Applications
Current Status: Employed as director of research for Line Imaging in Atlanta, GA.

Thesis: Vee Dipole Antennas for Use in Short-pulse Ground Penetrating Radars
Current Status: Employed as an assistant professor at the University of Tennessee in Knoxville, TN.

Huy Tam Nguyen—Advisor: Chatterjee—Winter 1998
Current Status: Employed as a research staff member at the Massachusetts Institute of Technology Lincoln Laboratories in Boston, MA.

Byeong-Ha Park—Advisor: P. Allen—Fall 1997
Thesis: A Low-voltage, Low-power 900 MHz CMOS Frequency Synthesizer
Current Status: Employed at Rockwell International in Newport Beach, CA.

Jae Yeong Park—Advisor: M. Allen—Fall 1997
Current Status: Employed as a research scientist in the School of Electrical and Computer Engineering at the Georgia Institute of Technology in Atlanta, GA.

Hyuncheol Park—Advisor: Barry—Summer 1997
Thesis: Coded Modulation and Equalization for Wireless Infrared Communications
Current Status: Employed as a senior manager in the Multimedia Lab, Corporate Technical Operations at Samsung Electronics Company, Ltd. in Suwon, South Korea.

Thesis: Trellis Based Soft Output Decoding Algorithms for Concatenated Coding Systems
Current Status: Employed as an assistant professor in the Department of Electrical Engineering at the Korean Military Academy in Seoul, South Korea.

Joseph W. Parks, Jr.—Advisor: Brennan—Fall 1997
Thesis: Macroscopic Numerical Analysis of Semiconductor Devices with Application to Avalanche Photodiodes
Current Status: Employed as a technical staff member at Intel Corporation in Hillsboro, OR.
Lucio F.C. Pessoa—Advisor: Maragos—Fall 1997
Thesis: Nonlinear Systems and Neural Networks with Hybrid Morphological/Linear/Linear Nodes: Optimal Design and Application to Image Processing and Pattern Recognition
Current Status: Employed as a technical staff member at Motorola in Schaumburg, IL.

Craig Petrie—Advisor: Connelly—Fall 1997
Thesis: An Integrated Random Bit Generator for Applications in Cryptography
Current Status: Employed as an engineer at Motorola, Inc. in Schaumburg, IL.

Thesis: Hierarchical Processing Algorithms for Object Recognition
Current Status: Employed at Raytheon Systems Company in Los Angeles, CA.

Ravi Poddar—Advisor: Brooke—Winter 1998
Current Status: Employed at Integrated Device Technology, Inc. in Duluth, GA.

Ram Rao—Advisor: Mersereau—Spring 1998
Thesis: Audio-visual Interaction in Multimedia
Current Status: Employed as a senior software engineer at Intel Corporation in Chandler, AZ.

Andrew H. Register—Advisor: Alford—Fall 1997
Thesis: The Application of Artificial Neural Networks for Endpoint Trajectory Control of Flexible-link Manipulators
Current Status: Employed as a research engineer at the Georgia Tech Research Institute in Atlanta, GA.

Thesis: Root Contours of Low-order Two-dimensional System Functions
Current Status: Employed at Motorola, Inc. in Boston, MA.

Dolors Sala Battle—Advisor: Limb—Winter 1998
Thesis: Design and Evaluation of MAC Protocols for Hybrid Fiber Coaxial Systems
Current Status: Employed at Motorola in Mansfield, MA.

Balusubramaniam Santhanam—Advisor: Maragos—Winter 1998
Thesis: Multicomponent AM-FM Energy Demodulation with Applications to Signal Processing and Communications
Current Status: Not known.

Gail M. Skofronick Jackson—Advisor: Gasiewski—Fall 1997
Thesis: Iterative Nonlinear Statistical Retrievals of Precipitation from Simulated Spaceborne Multispectral Passive Microwave Observations
Current Status: Employed as a research scientist at NASA Goddard Space Flight Center in Greenbelt, MD.

Benjamin J. Slocumb—Advisor: Kamen—Winter 1998
Thesis: Adaptive Date Association Methods for Pulse Train Analysis and Deinterleaving
Current Status: Employed as a senior research engineer at the Georgia Tech Research Institute in Atlanta, GA.

In 1954, Kendall L. Su, ECE Regents’ Professor Emeritus, (L) became the third electrical engineering student to receive a Ph.D. degree at Georgia Tech. Forty-three years later, he awarded the same degree to his son, Jonathan, who graduated in December 1997.

Jonathan K. Su—Advisor: Mersereau—Fall 1997
Thesis: Adaptive Rate-constrained Transform Video Coding
Current Status: Employed at Universität Erlangen-Nuremberg in Erlangen, Germany.

Current Status: Employed as a senior design engineer at NCR-Atlanta in Duluth, GA.

William P. Taylor—Advisor: M. Allen—Fall 1997
Thesis: The Design and Fabrication of Fully Integrated Magnetically Actuated Micromachined Relays
Current Status: Employed at Teledyne Electronic Technologies in Los Angeles, CA.

Hakan Urey—Advisor: Rhodes—Fall 1997
Thesis: Image Acquisition and Processing with AC-coupled Cameras
Current Status: Employed as a research engineer at Microvision, Inc. in Seattle, WA.

Huseyin Uzunalioglu—Advisor: Akyildiz—Spring 1998
Thesis: Mobility Management for Low Earth Orbit (LEO) Satellite Networks
Current Status: Employed as a technical staff member at Bell Labs Advanced Technologies, Lucent Technologies, in Holmdel, NJ.

Mohammad-Mehdi Vaez—Advisor: Lea—Summer 1997
Thesis: Nonblocking Banyan-type Optical Switching Networks under Crosstalk Constraint
Current Status: Employed as a senior technical staff member at AT&T in Middletown, NJ.

Mark D. Vaughn—Advisor: Blumenthal—Spring 1998
Thesis: Optical Subcarrier Multiplexed Signal Processing Using Semiconductor Optical Amplifiers
Current Status: Employed as a senior research scientist in the Optical Communications Research Department at Corning, Inc. in Corning, NY.
Thesis: Alignment Tolerant, Single-fiber, Bi-directional Link
Current Status: Employed as a research scientist at Corning, Inc. in Corning, NY.

Thesis: Fast Search Techniques for Video Motion Estimation and Vector Quantization
Current Status: Employed at Wu-Feng Institute of Technology in Taiwan.

Chen-Chu Yeh–Advisor: Barry–Spring 1998
Thesis: Minimum-error-probability Equalization and Multiuser Detection
Current Status: Employed as a system engineer in Government Aerospace Systems, Electronic Systems Sector at Harris Corp. in Palm Bay, FL.

Ilgu Yun–Advisor: May–Fall 1997
Thesis: Reliability Modeling and Parametric Yield Prediction of GaAs Multiple Quantum Well Avalanche Photodiodes
Current Status: Employed as a postdoctoral researcher in the School of Electrical and Computer Engineering at the Georgia Institute of Technology in Atlanta, GA.

Haroon I. Yunus–Advisor: Bass–Summer 1997
Thesis: Single Phase Active Filters
Current Status: Employed as a development engineer at Schlumberger-SPC in Sugar Land, TX.

Wei Zhao–Advisor: Brooke–Fall 1997
Thesis: Efficient Neural Networks for Prediction of Turbulent Flow
Current Status: Employed at AT&T in VA.

1997-98 IEEE STUDENT BRANCH OFFICERS
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Special Activities
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Dustin Hanson
Chris Jones
Tom Vasey
John Kitt
Ben Wu
Bruno Zicker
Brent Runyon
Juergen Vogel
Tracy Gibson

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Vice President
Treasurer
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Bridge Correspondent
Graduate Liaison
John Kitt
John Strunk
Chris Jones
Aditya Monappa
Casey Wood
Mike Ragan
Israel Denis

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Dan Barton
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David Peters
Stacey Rodd
C. Brent Runyon
Meredith A. Schlep
Gregory Scherrer
David Skinner
Chip Vorndran
Several major events and initiatives occurred in FY/AY 1998. The major ones concerned the ongoing conversion to the semester calendar, the ABET Engineering Criteria 2000 Pilot Visit, and computer-enhanced education.

Georgia Tech will convert to the semester calendar effective with the 1999-2000 academic year. Mandated by the Chancellor, this conversion is being accomplished in 1998-99 academic year for the other 33 units of the University System of Georgia. Georgia Tech was given an extra year to convert because of the loss of our campus and other disruptions associated with our hosting the Athletes’ Olympic Village during the 1996 Summer Olympics.

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 two programs will feature a common set of core ECE courses in signal processing, computer engineering, electric circuits, electromagnetics, and micro-electronic circuits and common laboratories in computer engineering, instrumentation, and analog electronics. Breadth will be obtained by selecting several courses from a menu of junior level courses. A new required course, Project Engineering and Professional Practice, will precede the major design course for each program. 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/semester/.

Mandatory semester conversion advising sessions were held for first-year through fourth-year students in Spring 1998. These sessions provided written information and a presentation to help students decide which curriculum to follow and afford them the opportunity to ask questions and learn where to get help in the transition to semesters. During the 1998-2000 period, the ECE Academic Office will provide individual semester conversion advising to over 800 undergraduate students.

Georgia Tech’s College of Engineering was selected to pilot the new ABET Engineering Criteria 2000 (EC 2000) for visits occurring in the 1997-98 visit cycle. As one of only five institutions selected, Georgia Tech was unique in being the only large, state-assisted engineering program to pilot the new criteria. Differing radically from the existing “Engineering Topics” Criteria, the new EC 2000 require engineering programs to define their objectives, the outcomes that they expect to demonstrate achievement of those objectives, the method used to assess the achievement of the outcomes, results from the assessment of those outcomes, and demonstration of changes made to improve the program as a result of the assessment process. The documentation was prepared during spring and summer 1997 (http://www.ece.gatech.edu/edu/academic/abet/), and the evaluation visit occurred in early November 1997. The experience was an excellent one for our ECE academic administration and faculty.

Beginning in summer 1997, under the overall direction of Thomas P. Barnwell, the School embarked on a program to enhance all of the required courses in the EE and CmpE curricula using computer assisted instruction. During the 1997-98 academic year, most of the required courses were developed and delivered using advanced computer enhanced instruction techniques. Courses were enhanced by using the World Wide Web to provide animation and other special effects. This activity was partially funded by Hewlett-Packard and the Georgia Tech Foundation.

Academic courses and laboratories offered during the summer, fall, winter, and spring quarters of the 1997-98 academic year are listed in the following tables.
# Undergraduate Courses

(Excludes independent study and undergraduate research courses)

<table>
<thead>
<tr>
<th>Course</th>
<th>Title</th>
<th>Number of Lab/Lecture Sections Offered</th>
<th>Avg. Section Enrollment of Lectures/Labs</th>
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<tr>
<td>CmpE 1700</td>
<td>Computer &amp; Digital Design Fundamentals*</td>
<td>7</td>
<td>45.9</td>
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<tr>
<td>CmpE 2500</td>
<td>Digital Computation I</td>
<td>11/37</td>
<td>45.5/13.6</td>
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<tr>
<td>CmpE 2510</td>
<td>Computer Architecture I</td>
<td>11</td>
<td>37.8</td>
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<tr>
<td>CmpE 3500</td>
<td>Digital Computation II</td>
<td>4/15</td>
<td>37.3/9.9</td>
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<tr>
<td>CmpE 3510</td>
<td>Computer Architecture II</td>
<td>4</td>
<td>45.3</td>
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<tr>
<td>CmpE 4180</td>
<td>VLSI Design &amp; Test I</td>
<td>3</td>
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<tr>
<td>CmpE 4181</td>
<td>VLSI Design &amp; Test II</td>
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<td>CmpE 4500</td>
<td>Computer Engineering Design I</td>
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<td>CmpE 4510</td>
<td>Computer Engineering Design II</td>
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<td>20</td>
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<td>CmpE 4760</td>
<td>Advanced Computer Architecture</td>
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<td>29.3</td>
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<td>EE 2200</td>
<td>Introduction to Discrete Systems</td>
<td>5/14</td>
<td>35/12.5</td>
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<tr>
<td>EE 2250</td>
<td>Electronic Circuit Analysis</td>
<td>4</td>
<td>33.8</td>
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<tr>
<td>EE 3310</td>
<td>Electromagnetics w/ Computer Applications</td>
<td>1</td>
<td>11</td>
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<tr>
<td>EE 3380</td>
<td>Digital Integrated Circuits</td>
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<tr>
<td>EE 3200</td>
<td>Elements of EE I: DC Circuits</td>
<td>7</td>
<td>44.9</td>
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<td>EE 3212</td>
<td>Signals &amp; Systems I</td>
<td>7</td>
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<tr>
<td>EE 3213</td>
<td>Signals &amp; Systems II</td>
<td>6</td>
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<tr>
<td>EE 3214</td>
<td>Systems &amp; Controls</td>
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<tr>
<td>EE 3230</td>
<td>Linear Systems &amp; Transforms</td>
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<td>EE 3250</td>
<td>Elements of EE II: AC Circuits</td>
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<td>EE 3270</td>
<td>Nonlinear Devices &amp; Circuits</td>
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<td>EE 3280</td>
<td>Electronic Circuits</td>
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<td>EE 3300</td>
<td>Electromagnetics I</td>
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<td>EE 3310</td>
<td>Electromagnetics II</td>
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<td>EE 3330</td>
<td>Electromechanical Systems &amp; Energy Conversion</td>
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<td>32.9</td>
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<tr>
<td>EE 3340</td>
<td>Random Signals &amp; Noise</td>
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<tr>
<td>EE 3351</td>
<td>Fundamentals of Microelectronic Devices</td>
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<tr>
<td>EE 3400</td>
<td>Instrumentation Laboratory</td>
<td>8/26</td>
<td>454/13.5</td>
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<tr>
<td>EE 3431</td>
<td>Junior EE Lab III: Advanced Electronics</td>
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<tr>
<td>EE 3480</td>
<td>Electronic Circuits Laboratory</td>
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<td>11.9</td>
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<tr>
<td>EE 3703</td>
<td>Electric Power Conversion*</td>
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<td>34</td>
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<tr>
<td>EE 3710</td>
<td>Introduction to Electronic Systems*</td>
<td>24</td>
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<tr>
<td>EE 3711</td>
<td>Electronic Systems Laboratory*</td>
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<tr>
<td>EE 4010</td>
<td>Electric Machines</td>
<td>2</td>
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<tr>
<td>EE 4011</td>
<td>Analog Filter Design</td>
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<tr>
<td>EE 4014</td>
<td>Introduction to Automation &amp; Robotics</td>
<td>1</td>
<td>31</td>
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<tr>
<td>EE 4015</td>
<td>Principles of Feedback Control</td>
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<td>21/10.5</td>
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<tr>
<td>EE 4016</td>
<td>Feedback Control System Design &amp; Implementation</td>
<td>2/5</td>
<td>18.5/7.4</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>13.5</td>
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<td>EE 4024</td>
<td>Speech Analysis, Synthesis, &amp; Compression</td>
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<td>EE 4026</td>
<td>Audio Engineering</td>
<td>1</td>
<td>18</td>
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<td>EE 4031</td>
<td>Microwave Devices &amp; Circuits</td>
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<td>14</td>
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<td>EE 4037</td>
<td>Antennas</td>
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<td>EE 4038</td>
<td>Introduction to Radar</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>EE 4052</td>
<td>Fiber Optics Laboratory</td>
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<td>13.5/9</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 4061</td>
<td>Communication Systems</td>
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<td>EE 4062</td>
<td>Communication Systems Laboratory</td>
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<td>3</td>
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<tr>
<td>EE 4064</td>
<td>Introduction to RF Design</td>
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</table>
### Academic Operations

#### Graduate Courses

<table>
<thead>
<tr>
<th>Course</th>
<th>Title (Quarters Offered on Atlanta Campus)</th>
<th>Atlanta</th>
<th>Video</th>
<th>GTL</th>
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<tbody>
<tr>
<td>EE 6050</td>
<td>Random Processes I (Su, F)</td>
<td>100</td>
<td>21</td>
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<tr>
<td>EE 6051</td>
<td>Random Processes II (F)</td>
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<td>EE 6057</td>
<td>Telecommunications I (W)</td>
<td>90</td>
<td>10</td>
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<tr>
<td>EE 6059</td>
<td>Personal &amp; Mobile Communications (Sp)</td>
<td>46</td>
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<tr>
<td>EE 6063</td>
<td>Methods in Pattern Recognition (Sp)</td>
<td>22</td>
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<td>EE 6070</td>
<td>Fourier Techniques &amp; Signal Analysis (F)</td>
<td>36</td>
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<td>EE 6072</td>
<td>Fourier Optics &amp; Holography (W)</td>
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<tr>
<td>EE 6073</td>
<td>Optical Signal Processing (Sp, GTL only)</td>
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<tr>
<td>EE 6081</td>
<td>Information Theory (Sp)</td>
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<td>EE 6082</td>
<td>Coding (F)</td>
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<td>EE 6083</td>
<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>EE 6093</td>
<td>Communications Networks (W)</td>
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<td>ATM Networks (W)</td>
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<td>Linear Networks &amp; Systems (Su, F)</td>
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<td>EE 6101</td>
<td>Time Varying &amp; Nonlinear Systems (Sp)</td>
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<td>EE 6102</td>
<td>Nonlinear Control Systems (W)</td>
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<td>EE 6110</td>
<td>Modern Linear Control (W)</td>
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<td>EE 6111</td>
<td>Feedback Control Systems I (W)</td>
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<td>EE 6112</td>
<td>Feedback Control Systems II (Sp)</td>
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<td>Feedback Control Systems III (Su)</td>
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<td>EE 6114</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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*Not for electrical or computer engineering majors
Academic Operations

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<tr>
<th>Course Code</th>
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<th>GTL</th>
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<td>EE 6191</td>
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Undergraduate Special Topics Offerings

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<th>Title</th>
<th>Number of Lecture Sections Offered</th>
<th>Avg. Section Enrollment</th>
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<td>EE 4803</td>
<td>Industrial Controls &amp; Manufacturing</td>
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<td>EE 4813</td>
<td>VHDL Design</td>
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<td>EE 4823</td>
<td>Lecture Portion of EE 4087</td>
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<td>EE 4834</td>
<td>Network Design &amp; Simulation</td>
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Graduate Special Topics Offerings

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<td>EE 8145</td>
<td>Global Innovations for Engineers Seminar (F, W, Sp)</td>
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<td>Design &amp; Analysis of Multiprocessor Interconnection Networks (Su)</td>
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<td>Neuromorphic VLSI Circuits (F)</td>
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<td>Advanced Digital Systems Test (W)</td>
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<td>Asynchronous and Self-Timed Systems (Sp)</td>
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<td>Neural Networks (F)</td>
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<td>Electronic Oscillator Design (W)</td>
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<td>EE 8345</td>
<td>Electric Power Quality (Sp)</td>
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<td>EE 8347</td>
<td>Integrated &amp; Low-cost Next-generation Packaging (W)</td>
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Study Abroad Program

The Oxford Study Abroad Program consists of two excursions—one to England in the summer months and to Australia and New Zealand in the winter—during which students take courses in engineering, architecture, biology, and social sciences. In the England program, students took their courses 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 1997-98, enrollment in the England summer 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.
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. Of the 14 alumni receiving this award, three were electrical engineering graduates.

Martial A. Honnell
Visiting Professor
Auburn University
Auburn, AL
B.S.E.E. 1934
M.S. 1940
Prof. E.E. 1945

George Nottingham
President & CEO, Retired
Nottingham, Brook, and Pennington, Inc.
Macon, GA
B.E.E. 1947

Hal B. Tucker
Senior Vice President, Nuclear Generation, Retired
Duke Power Company
Charlotte, NC
B.E.E. 1949

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. Of the 20 alumni receiving this award, three were electrical engineering graduates.

C. Dean Alford
President & CEO
A&C Encom
Atlanta, GA
B.E.E. 1976

Robert G. Dawson
President & CEO
Southern Communications Services, Inc.
Atlanta, GA
B.E.E. 1969

John R. Dillon
Senior Vice President & CFO, Retired
Cox Enterprises
Atlanta, GA
B.E.E. 1963

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. Of the 24 alumni receiving this award, six were electrical engineering graduates.

Alex C. Kelly
Account Manager, Emerging Markets
NorTel, Inc.
Alpharetta, GA
B.E.E. 1985

Sheryl Sanders Prucka
President & Founding Partner
Prucka Engineering
Houston, TX

Michael L. Wach
President
Visionex, Inc.
Warner Robins, GA

A. Renee Koster
Business Area Manager, Microwave Instrumentation
Scientific-Atlanta, Inc.
Norcross, GA
B.E.E. 1987, M.S.E.E. 1988

A. Ilan D. Ross
Group Leader
Anadrl-Schlumberger
Sugar Land, TX

Christopher D. Watkins
Chairman & CEO
Algorithm, Inc.
Roswell, GA
B.E.E. 1989
Donors contributed $8,384,807 to ECE through the Georgia Tech Foundation. Below is a partial list of donors.

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<td>Mr. Michael T. Tuley</td>
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SSPCS Corporation  
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*Joined the board during 1997-98
Research Funding and External Publications/Presentations

During the period March 1997-March 1998, ECE faculty members, in conjunction with their peers and graduate students, produced 152 journal papers, 240 conference publications, 22 books and parts of books, and 21 patents. In FY 98, faculty members amassed $14,857,349 in research grants and contracts and submitted 164 proposals to external agencies. The sources of ECE grants and contracts are detailed in the charts below.

Grants and Contracts Received in FY 98 - $14,857,349
## Financial Summary
(FY 98 Allocation)

### STATE

#### Personal Services

<table>
<thead>
<tr>
<th>Category</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>$4,481,771</td>
<td>$1,479,223</td>
<td>$191,937</td>
<td>$6,152,931</td>
<td>$3,179,983</td>
</tr>
<tr>
<td>Part-time Faculty</td>
<td>75,000</td>
<td></td>
<td></td>
<td>75,000</td>
<td></td>
</tr>
<tr>
<td>Summer Faculty</td>
<td>329,879</td>
<td>85,000</td>
<td></td>
<td>414,879</td>
<td>315,000</td>
</tr>
<tr>
<td>Graduate Assistants</td>
<td>680,000</td>
<td>235,000</td>
<td></td>
<td>915,000</td>
<td>2,450,000</td>
</tr>
<tr>
<td>Misc. Professional</td>
<td>50,000</td>
<td></td>
<td></td>
<td>50,000</td>
<td>110,000</td>
</tr>
<tr>
<td>Administrative</td>
<td>1,682,037</td>
<td>30,715</td>
<td>262,900</td>
<td>1,975,652</td>
<td>1,620,544</td>
</tr>
<tr>
<td><strong>Total Academic</strong></td>
<td><strong>$7,298,687</strong></td>
<td><strong>$1,829,938</strong></td>
<td><strong>$454,837</strong></td>
<td><strong>$9,583,462</strong></td>
<td><strong>$7,675,527</strong></td>
</tr>
<tr>
<td>Staff</td>
<td>$107,762</td>
<td></td>
<td></td>
<td>$172,761</td>
<td>$76,163</td>
</tr>
<tr>
<td>Student Assistants</td>
<td>60,000</td>
<td></td>
<td></td>
<td>60,000</td>
<td>71,000</td>
</tr>
<tr>
<td>Misc. Non-Professional</td>
<td>15,000</td>
<td></td>
<td></td>
<td>15,000</td>
<td>16,000</td>
</tr>
<tr>
<td><strong>Total Non-Academic</strong></td>
<td><strong>$182,762</strong></td>
<td><strong>$64,999</strong></td>
<td><strong>$247,761</strong></td>
<td><strong>$163,163</strong></td>
<td></td>
</tr>
<tr>
<td><strong>Total Pers. Svcs.</strong></td>
<td><strong>$7,481,449</strong></td>
<td><strong>$1,829,938</strong></td>
<td><strong>$519,836</strong></td>
<td><strong>$9,831,223</strong></td>
<td><strong>$7,838,690</strong></td>
</tr>
</tbody>
</table>

#### Non-Personal Services

<table>
<thead>
<tr>
<th>Category</th>
<th>Total</th>
<th>Total</th>
</tr>
</thead>
<tbody>
<tr>
<td>Travel</td>
<td>$20,000</td>
<td>$40,000</td>
</tr>
<tr>
<td>Operating Supplies</td>
<td>245,520</td>
<td>161,262</td>
</tr>
<tr>
<td>Equipment</td>
<td></td>
<td></td>
</tr>
<tr>
<td><strong>Total Non-Pers. Svcs.</strong></td>
<td><strong>$265,520</strong></td>
<td><strong>$201,262</strong></td>
</tr>
</tbody>
</table>

**Grand Total**

| Total               | $7,746,969 | $1,829,938 | $721,098 | $10,298,005 | $13,470,571 |

* Excludes fringe benefits
All figures exclude overhead charges
# Financial Operations

## Expenditure Summary

### STATE EXPENDITURES

<table>
<thead>
<tr>
<th>Category</th>
<th>FY 97</th>
<th>FY 98</th>
</tr>
</thead>
<tbody>
<tr>
<td>Instruction</td>
<td>$8,396,769</td>
<td>$8,819,268</td>
</tr>
<tr>
<td>General Research</td>
<td>2,439,503</td>
<td>3,262,430</td>
</tr>
<tr>
<td>Indirect Research</td>
<td>1,302,577</td>
<td>1,468,172</td>
</tr>
<tr>
<td><strong>Total Direct State</strong></td>
<td><strong>$12,138,849</strong></td>
<td><strong>$13,549,870</strong></td>
</tr>
<tr>
<td>Fringe Benefits</td>
<td>$1,895,752</td>
<td>$2,043,159</td>
</tr>
<tr>
<td><strong>Total State</strong></td>
<td><strong>$14,034,601</strong></td>
<td><strong>$15,593,029</strong></td>
</tr>
</tbody>
</table>

### SPONSORED SUPPORT

<table>
<thead>
<tr>
<th>Category</th>
<th>FY 97</th>
<th>FY 98</th>
</tr>
</thead>
<tbody>
<tr>
<td>Instruction</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Federal</td>
<td>$36,252</td>
<td>$53,505</td>
</tr>
<tr>
<td>Industry</td>
<td>1,003,740</td>
<td>1,481,451</td>
</tr>
<tr>
<td>Other</td>
<td>354,285</td>
<td>522,901</td>
</tr>
<tr>
<td><strong>Total Sponsored Instruction</strong></td>
<td><strong>$1,394,277</strong></td>
<td><strong>$2,057,857</strong></td>
</tr>
<tr>
<td>Research</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Federal</td>
<td>$5,920,100</td>
<td>$7,975,154</td>
</tr>
<tr>
<td>State</td>
<td>95,082</td>
<td>128,081</td>
</tr>
<tr>
<td>Industry</td>
<td>1,947,600</td>
<td>2,623,823</td>
</tr>
<tr>
<td>Other</td>
<td>1,092,000</td>
<td>1,471,097</td>
</tr>
<tr>
<td><strong>Total Sponsored Research</strong></td>
<td><strong>$9,054,782</strong></td>
<td><strong>$12,198,155</strong></td>
</tr>
<tr>
<td>Fringe Benefits (Sponsored)</td>
<td>$2,009,160</td>
<td>$1,232,097</td>
</tr>
<tr>
<td><strong>Total Sponsored</strong></td>
<td><strong>$12,458,219</strong></td>
<td><strong>$15,488,109</strong></td>
</tr>
</tbody>
</table>

**TOTAL EXPENDITURES**

<table>
<thead>
<tr>
<th>FY 97</th>
<th>FY 98</th>
</tr>
</thead>
<tbody>
<tr>
<td>$26,492,820</td>
<td>$31,081,138</td>
</tr>
</tbody>
</table>

* 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.