Electrical Engineering and Computer Science

Leon M. Tolbert
Min H. Kao Professor and Department Head
EECS Faculty and Centers

- **47 Total Faculty**
  - 21 Professors
  - 12 Associate Professors
  - 11 Assistant Professors
  - 3 Professors of Practice

- **BS, MS, PhD Degrees**
  - Computer Engr.
  - Electrical Engr.
  - Computer Science

- **New Minors**
  - Cyber Security
  - Data Center Reliability

**Partnerships**

<table>
<thead>
<tr>
<th>ORNL</th>
<th>CISML</th>
<th>ICL</th>
<th>CURENT</th>
</tr>
</thead>
<tbody>
<tr>
<td>EECS</td>
<td></td>
<td></td>
<td></td>
</tr>
</tbody>
</table>
EECS Undergraduate Enrollment

- Fall 2014 Freshman
  - Computer Science: 74
  - Computer Engineering: 56
  - Electrical Engineering: 50
  - Total EECS Freshman: 180

Total female students: 15 (8%)
Total minority students: 29 (16%)

- Freshman Enrollment is 15% increase over previous year.
Rankings – Top 25 Goal

- 2016 U.S. News and World Report Rankings of University Graduate Departments/Programs – Public
  - UT Electrical Engineering – 39 (2.5/5.0) 2 = adequate
  - UT Computer Engineering – 43 (2.3/5.0) 3 = good
  - UT Computer Science – 45 (2.4/5.0) 4 = strong
  - UT College of Engineering – 36 (2.7/5.0)
  - University of Tennessee - 47
- EECS’ student credit hours per FTE, Ph.D. students per FTE, and research expenditures per FTE are comparable with public universities ranked between 16-32 in U.S. News.
- Sent electronic and hard copy of annual report to all CS and ECE voting department heads.
- Developed 2-page EECS department highlight
- Working on videos to promote the department
EECS Research Specialties

Power Systems, Power Electronics and Renewable Energy

- Distributed Energy Conversion and Control
- Electric Vehicles (EVs)
- Vehicle to Grid (V2G) Services
- High Temperature Power Electronics
- Power Electronics for Renewable Energy Interface
- Power Quality and Active Power Filters
- Application of Wide Bandgap Power Electronics
- Power Systems Engineering and Economics
- Power System Monitoring
- Smart Grid Technologies
EECS Research Specialties

Microelectronics, Microwaves and MEMS

- Analog Circuits
- Antennas and Microwave
- Bio-Electronics
- Embedded Systems
- Integrated Circuits
- MEMS
- Microelectronics
- Mixed-signal VLSI
- Nano-Electronics
- Sensors
EECS Research Specialties

Signal Processing, Communications and Controls

- Automatic Control
- Communications
- Control Systems
- Information Theory
- Statistical Signal Processing
- Stochastic Resonance
EECS Research Specialties

Networked and Embedded Systems

- Cyber Security
- Network Privacy and Security
- Power Control in Wireless Networks
- Real-Time Embedded Systems
- Sensor Networks
- Wireless Networks
- Mobile Cloud Computing
EECS Research Specialties

Visual Computing and Image Processing

- 3D Rendering
- Computed Imaging
- Computer Graphics
- Display of Biomedical and Scientific Data
- Graphical Programming Environments
- Graphical User Interfaces
- Interactive Simulation
- Large Scale Distributed Visualization
- Remote Visualization
EECS Research Specialties

Intelligent Systems, Data Mining, and Machine Learning

- Artificial Intelligence
- Distributed Intelligence
- Data Mining
- Deep Machine Learning
- Emergent Computation
- Genetic Algorithms
- Neural Networks and Connectionism
- Pattern Recognition, Robotics
- Visual Analytics
Research Specialties

High Performance and Scientific Computing

• Distributed Computing
• Mathematical Software and Software Repositories
• Numerical Linear Algebra
• Parallel Processing
• Software Tools
• Data Storage
EECS Research Specialties

Biological applications

- Acute Inflammation/Immunology
- Bioelectronics
- Bioinformatics
- Bio-Medical Devices
- Biotechnology and Bio-Sensor Design
- Computational and Systems Biology
- Fluid Systems
- Model Predictive Control
- Transient Dynamics
- Translational Medicine