

# An overview of Electrical & Computer Engineering

University of Illinois at  
Urbana-Champaign



**ECE ILLINOIS**  
Department of Electrical and Computer Engineering

# UIUC + ECE history

- 1862 – Lincoln signs Morrill Land Grant Act
- 1867 – Polytechnic Department of Illinois Industrial University established
- 1889 – Dept of Physics established
- 1891 – Dept of EE established, first degrees awarded 1893



University Hall circa 1879

# Undergraduate enrollments (1998)

- **Campus = 27,452**
- **Engineering = 5,811**
- **EE = 907**
- **CompE = 683**
- **Freshman EE = 162, CompE = 214**
- **Freshman ACT composite averages**
  - ECE = 30.4
  - Engineering = 29.9
  - Campus = 26.9



# Graduate enrollments (1998)

- **Campus = 8,851**
- **Engineering = 1,925**
- **ECE = 434**
- **ECE new grad students = 93**
- **Highly competitive admissions**
  - **Average GPA = 3.8/4.0**
  - **Average GRE percentile ranks**
    - » **Quantitative = 93%**
    - » **Analytical = 87%**
    - » **Verbal = 71%**



# Degrees awarded (1997-98)

- 302 bachelor degrees
- 81 master degrees
- 60 doctorates
- There are more than 16,000 ECE alumni worldwide



# ECE improves in '99 U.S. News & World Report annual survey/rankings

- EE graduate program #3 (after MIT & Stanford)
- CompE graduate program #2 (after MIT)
- U of I ECE best among public universities in both areas of study



# ECE faculty profile (by discipline)

## ■ 86 FTE (as of 4/98)

- Applied Computation, 2
- Bioengineering, Acoustics, Magnetic Resonance, 7
- Communications, 5
- Computer Systems, 8
- Computer Vision and Robotics, 2
- Decision and Control, 4
- Electrooptics, Lasers and Plasmas, 7
- Electromagnetics and Optics, 6
- ICs and VLSI, 7
- Power and Energy Systems, 6
- Remote Sensing and Propagation, 5
- Semicon. Physics and Computational Electronics, 3
- Semiconductor Materials and Devices, 12
- Signal, Image and Speech Processing, 9
- Lecturers, visiting/adjunct profs, 3



# ECE faculty honors (professors and adjunct & emeritus professors)

- **National Medal of Science, 2**
- **National Academy of Sciences, 3**
- **National Academy of Engineering, 10**
- **American Academy of Arts & Sciences, 3**
- **IEEE Fellows, 60**
- **IEEE Society Presidents, 11**
- **NSF PYI/NYI/CAREER awards, 16**



# ECE faculty and interdisciplinary research

## ■ Coordinated Science Lab

- DSP, VLSI, Computer Systems, Decision & Control, Communications

## ■ Beckman Institute for Advanced Science & Technology

- Human-Computer Intelligent Interaction, Molecular & Electronic Nanostructures, Biological Intelligence



# ECE faculty and interdisciplinary research

## ■ Microelectronics Lab

- Optoelectronics & photonics, MEMS, Wireless Communications, Semiconductor Materials, Quantum Structures

## ■ Motorola Center for Communications

## ■ NSF Science & Technology Center for Superconductivity



# ECE - industry collaborations

- Research grants
- Grad fellowships and internships
- Recruitment of ECE graduates + post-docs
- Equipment donations (Intel 4" IC fab line)



ECE 344 Fab Lab upgraded

# ECE - industry collaborations

- **Corporate-sponsored research centers (Motorola)**
- **Corporate- or foundation-sponsored positions (Sony's Bardeen Chair)**
- **Teaming of major block grants (NSF-ERC, DARPA, MARCO)**
- **Visiting professorships**



Sony Chairman Morita visits  
Microelectronics Lab, 1993

# Top 10 employers of ECE BS grads (1980-96)

- **Motorola**
- **Intel**
- **Texas Instruments**
- **Hughes**
- **IBM**
- **Hewlett-Packard**
- **Northrop**
- **Bell Systems**
- **Zenith**
- **Honeywell**

