

Charles L. Brown Department of

# Electrical & Computer Engineering



*Developing*  
**Leaders of  
Innovation**





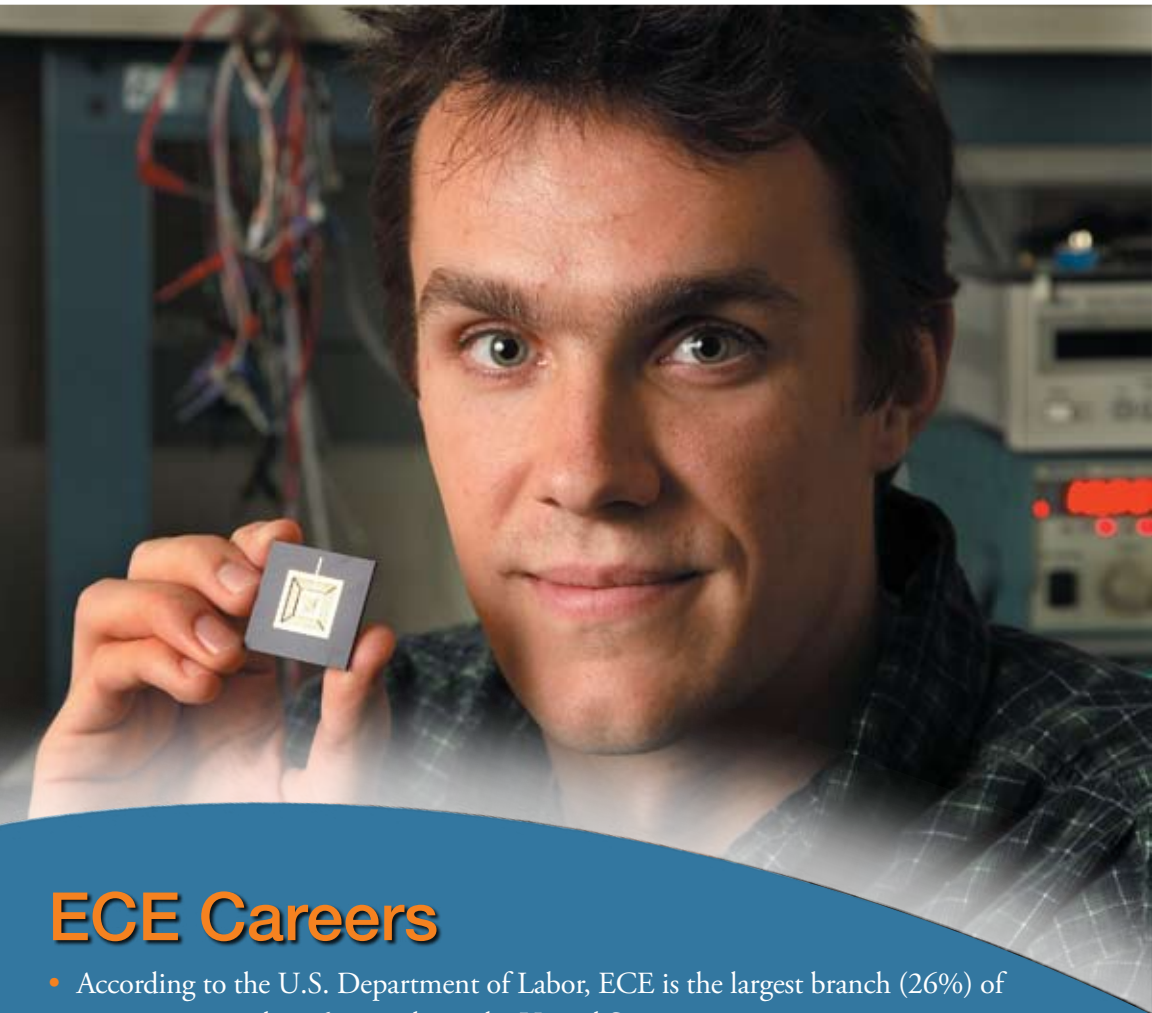
**In the Charles L. Brown Department of Electrical and Computer Engineering, we collaborate with leaders in industry and programs across U.Va.'s Grounds to create numerous opportunities for our students.**



# Our Students

At the Charles L. Brown Department of Electrical and Computer Engineering, we provide our students with the technical knowledge, analytical skills and broad-based curriculum they need to be **leaders in the field**. For example, through hands-on design projects and the engineering senior thesis — a requirement of U.Va. School of Engineering and Applied Science undergraduates for over a century — our students have the opportunity to **solve real-world problems** through research of their own design.

Our engaged faculty — all of whom teach courses and complete their own research — enjoy teaching, and many win University and other teaching awards each year. Experts in their own fields, our faculty members successfully prepare students to be competitive **leaders in industry**: our undergraduate students receive job offers from companies like Intel, Lockheed Martin, Northrop Grumman and Motorola as well as various branches of the U.S. Military.



## ECE Careers

- According to the U.S. Department of Labor, ECE is the largest branch (26%) of engineering, with 376,000 jobs in the United States.
- In 2008, the average starting salary for electrical engineering grads with Bachelor of Science degrees from U.Va. was \$62,832, compared with a national average of \$56,910.
- Computer engineering grads had average starting salaries of \$66,323 compared with the national average of \$59,576.
- Graduates with ECE degrees are among the top 10 in highest demand by U.S. employers.

# Our Research

Every faculty member in the Charles L. Brown Department of Electrical and Computer Engineering is engaged in research, and many are leaders in their technical fields. Our faculty experts and the nationally renowned research programs they lead allow for extensive collaboration across U.Va.'s Grounds and with corporations nationwide. These factors also create **countless opportunities** for graduate and undergraduate research within the department.

Our main research thrusts include:

**logic design, communication theory,**  
**device physics, *control theory*, dependable computing,**  
**electromagnetics, nanoelectronics, *MEMS***  
***and intelligent systems*, signal processing, computer**  
***architecture*, nanoelectronic architectures,**  
**photovoltaics, sensor and communication**  
**networks, bio-imaging and -electronics, and**  
**superconducting electronics**



Our National Academy-level faculty are involved in **innovative research** in photonics, or electronics that use light. They are studying nanoelectronics, which examines how computers and circuitry will be made 10 to 20 years in the future — really small and with the use of molecular electronics. And they are developing networks of wireless sensors that collect data continuously to make medical patients' diagnoses more accurate and to enable more of the nation's elderly to live independently through "smart home" technology.

We receive nearly \$10 million annually in external research funding from agencies like NASA, the National Institutes of Health, the National Science Foundation and the Department of Defense, among others. All ECE faculty are involved in externally funded research projects, and more than 10 spinoff companies have been created as a direct result of successful research accomplishments by ECE faculty over the last decade.

# Electrical & Computer Engineering at U.Va.

The largest branch of engineering, electrical and computer engineering is a **highly collaborative field** involving areas such as bio-imaging and -electronics, quantum physics, information technology, sensor and communication networks, computer architecture and nanoelectronics. Approximately 300,000 electrical and computer engineers are employed each year.

At the Charles L. Brown Department of Electrical and Computer Engineering (ECE), our students and faculty are engaged in research in all of the above areas and many more. Our mission, however, goes beyond the research. In ECE, **we strive to educate students not only to learn the technical skills necessary to succeed in the field, but also to become leaders in their professions and communities.** Through experiential learning opportunities and superior facilities, we offer our students the chance to create new knowledge and innovative technology that will have a lasting impact on our nation and world.

We offer Bachelor of Science, Master of Engineering, Master of Science and Ph.D. degrees in electrical engineering and in computer engineering (jointly administered with the U.Va. Department of Computer Science). In addition, we offer a minor in electrical engineering, open to all U.Va. students.



## Snapshot

The U.Va. Charles L. Brown Department of Electrical and Computer Engineering ...

- Graduates approximately 80 undergraduate students each year
- Supports approximately 120 electrical engineering and 30 computer engineering graduate students each year
- Consists of nearly 30 full-time faculty members — nine of whom are society Fellows and two of whom are members of the National Academy of Engineering — in addition to approximately 20 staff members
- Receives nearly \$10 million in external research funding each year
- Ranked in the top 20 of undergraduate ECE programs nationwide by *U.S. News & World Report*



THORNTON HALL



UNIVERSITY  
*of* VIRGINIA  
ENGINEERING

Charles L. Brown Department of  
Electrical and Computer Engineering  
School of Engineering and Applied Science  
University of Virginia  
P.O. Box 400743  
Charlottesville, VA 22904-4743

[www.ee.virginia.edu](http://www.ee.virginia.edu)  
[www.seas.virginia.edu](http://www.seas.virginia.edu)  
434.924.3960  
[ecceweb@ee.virginia.edu](mailto:ecceweb@ee.virginia.edu)