CU Boulder
Electrical, Computer & Energy Engineering
Prospective PhD Webinar

University of Colorado Boulder

CU Boulder, Our College & Our Department

Boulder
- Consistently voted one of the top college towns in America & the best place to live in the USA, learn more about [living here](#).
- 81% of College of Engineering graduate students live in the city of Boulder.
- 22% live in family/graduate housing.

CU Boulder
- Check out our virtual campus tour feature [here.](#)

College of Engineering & Applied Science (CEAS):
- The College of Engineering and Applied Science is ranked #11 overall.
- [CU Boulder leads the charge toward gender parity in engineering](#) - 25% of ECEE PhDs are women; 38% of CEAS PhDs are women.

ECEE:
- Ranked No. 16 in public computer engineering programs and No. 18 in public electrical engineering programs in *U.S. News and World Report's* Best Graduate Schools for 2025
- 40 tenured/tenure-track faculty members
- 130 PhDs
- PhDs are from over 28 states and 16 countries: 64% domestic and 36% international.
- Our PhDs range in ages from 20s-60s.
- Median time to graduate is 5.1 years.

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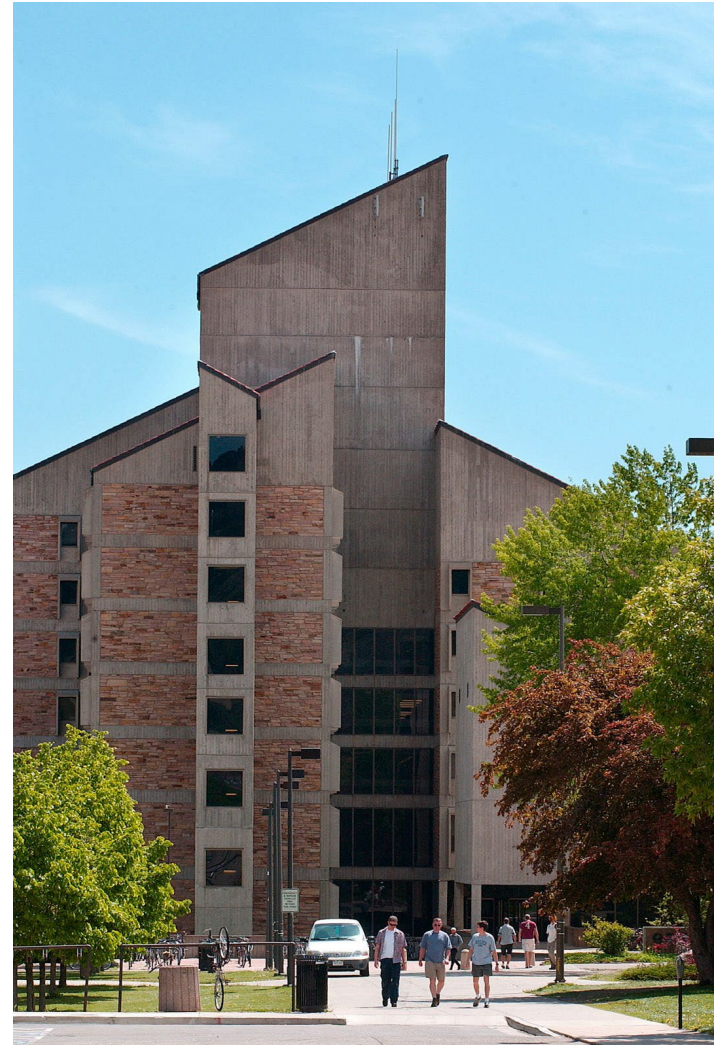
Our Research Areas

Computer Engineering
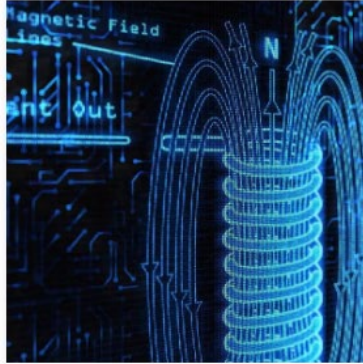
Electromagnetics, RF and Microwaves

Power Electronics

Learning, Information, Network, Communication & Data Sciences

Photonics and Quantum Engineering

Systems and Controls

Our research is [concentrated in six broad areas](#).

- Computer Engineering
- Electromagnetics, RF and Microwaves
- Learning, Information, Network, Communication and Data Sciences
- Power Electronics
- Photonics and Quantum Engineering (separated into Photonics & Optics, Materials & Devices, and Quantum Engineering in the application)
- Systems and Controls

Our research portfolio as a department continues to evolve with exciting new faculty hires and the campus research initiatives.

**Please ignore any other areas listed on our Research Areas page. These are part of our cross-collaborating teams made up from faculty in these core areas and are not specific areas you can apply to in our application.

Our Research Collaborations & Recent News

There are many exciting research endeavors that ECEE faculty engage in, such as designing and testing circuits for quantum computing; designing the world's largest wind turbines; fabricating the most sensitive biosensors possible; and manipulating light for nanoscale imaging, lithography, and optical communications. With the world moving rapidly toward electrification, the ECEE department affords prospective students open-ended career possibilities for a rapidly evolving world.

We have four national laboratories in Boulder we collaborate with:

We also commonly work with the Department of Defense, Lockheed Martin, Ball Aerospace, Raytheon, Qualcomm and others based in the greater Denver area.

Recent news on our research and student accomplishments can be found on LinkedIn: https://www.linkedin.com/company/cu-boulder-electrical-engineering/ or on our news page: https://www.colorado.edu/ecee/news-events

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Our PhD Program

- We admit ~55 PhD students each year, of which ~30 accept. We receive ~350 applicants.
  - For Fall 2025 we admitted half as many PhDs due to funding uncertainty. We anticipate similar admission rates in 2026 as we continue to be cautious regarding federal funding.
- Our minimum threshold to apply is a 3.0 GPA or higher on the 4.0 scale from a STEM-focused Bachelor of Science program.
- You can apply with or without a master's degree.
  - Half of our admits are right out of an undergraduate program.
- You can read all about our program [here](#) and the next two slides.

Program Milestones and Checkpoints

Years 1-2 (this is an estimate):

Coursework (30 credit hours of coursework required; two classes/5 credits makes you full-time enrolled):

- If you do not have a previous master's degree, take 2 classes your first semester, then 3-3-2 in the next three semesters to complete the coursework portion of the PhD and earn your master's degree.
- 18 credit hours (6 classes) must be ECEN 5000-level or above.
- The remaining 12 credit hours (4 classes) can be ECEN courses or technical courses in science, mathematics, or engineering. All of these must be at the 5000-level or above.
    - ECEN 5930, Industry Internship, is allowed to count toward the degree for a maximum of 3 credits.
    - Nontechnical courses do not count toward your degree.
- Submit **Transfer of Credit form** upon completion of 6 CU Boulder course credits if you have previous graduate level course-work completed. You can transfer up to 21 credits.

Example: Term, Course #, Name, Credits			

- **Professional Preparation & Practicum:** Students must complete one practicum experience prior to their comprehensive exam. Upon completion, the student is eligible for conference travel funds.
- **Establish your first support committee. This should include three mentors, including your faculty advisor, that can guide your early research.**
- Pass **Preliminary Exam** (you have two attempts; this is only offered once per year).
- Apply for your **master's degree** if you completed the 30-coursework-credit requirements at CU.

Years 3-6 (this is an estimate):

- **Thesis Hours** (30 credits of ECEN 8990 are required): Students cannot enroll themselves in thesis hours and must use this form each semester.
- The minimum amount of credits to be enrolled full-time varies based on your PhD status. Pre-comprehensive exam is 1 credit, post-comprehensive exam is 5 credits; 10 credits maximum is allowed in a semester. Play a numbers game with your estimated timeline to defend to equal 30 total.
- Form your **Comprehensive Exam Committee.** You need 5 people with PhD degrees, one must be from outside the ECEE, 3 must be CU Boulder Graduate Faculty:

Chair/Faculty Advisor	
Member	
Member	
Member	
Member	

- Fill out this form at least three weeks before your comprehensive exam to notify Lori of your committee members and to submit paperwork for their appointments, for assistance with room reservations, etc.
- Pass **Comprehensive Exam.**
- Submit the Candidacy Application Form to be admitted into candidacy.

Final Semester Steps (follow the Graduate School deadlines; these cannot be altered (+ PhD requirements):

- Apply online to graduate.
    - If you are an international student in F-1 or J-1 status, ask an advisor in ISSS about immigration requirements for the semester following your defense.
- Form your **Final Defense Committee.** You can use the same committee as your comprehensive exam.

Chair/Faculty Advisor	
Member	
Member	
Member	
Member	

- Fill out this form at least three weeks before your defense to notify Lori of your committee members and to submit paperwork for their appointments, for assistance with room reservations, etc
- Successfully **defend your dissertation.**
- **Submit dissertation & Thesis Approval Form.**
- Complete **Survey of Earned Graduates.**
- **Graduate!**

Semesterly Reviews

In the tenth week of Fall & Spring semesters we check-in with PhD students and their advisors to gauge progress on these milestones. This way students have a semesterly notification on their progress.

During this check-in we collect information on your accomplishments, publications, presentations, etc. so we can celebrate you!

We also ask for any concerns in the advising relationship or concerns about the PhD. This allows us to make sure everyone knows when they are on track and that any concerns are met in a timely manner.

Our goal is for everyone to always feel informed, in control, and confident when it comes to their progress in the PhD.

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Our Advisors

When you apply, you will [select a research area](#) in your application. This will indicate which faculty will review your application.
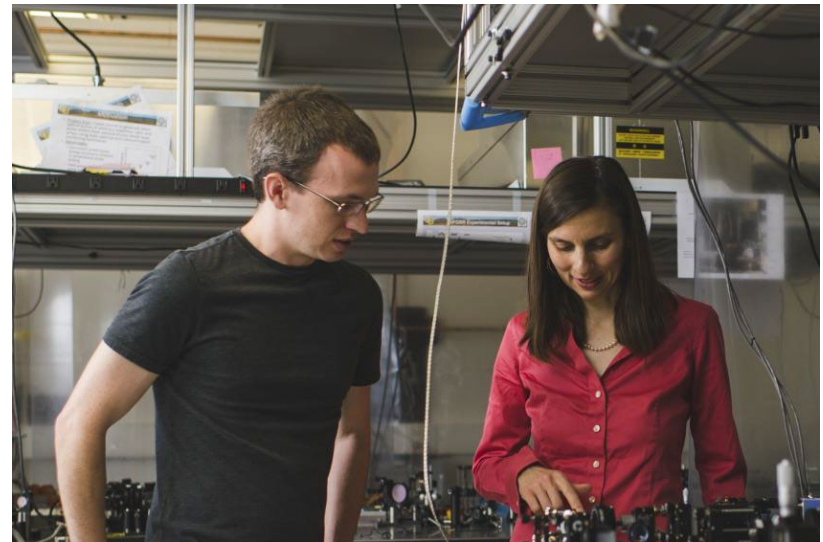
You do not need to secure an advisor in advance of applying!

All faculty in the noted research area will review your application and determine if your interests align with their work / have potential for a complementary advising relationship.

If there is someone you specifically want to work with, indicate that! Explain why.

Please Note: Admissions are restricted to faculty having available research funds/space for the students they wish to admit.

- This policy is to protect admitted/current students.
- Some faculty may not be recruiting in some years because they are fully funding current PhDs/their groups are full.
- If you wish to come to CU to only work with one specific person, email them directly to see if they are recruiting before spending money on an application.

Our Funding

- All PhD applicants are automatically considered for funding when you apply. You do not need to submit any additional information or secure funding in advance.

- Our PhD students are funded on 50% Graduate Research Appointments (20-hours-per-week, which is considered full-time for a student). We rarely use Teaching Assistant appointments.

- The Research Appointments pay $3,352.98 per month (pre taxes, August 15 – May 15). This includes student fees, ten credits of tuition remission for Fall & Spring semesters, & 91% of health insurance costs, if you opt-in to health insurance coverage.

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Our Classes

Visit classes.Colorado.edu and search "ECEN" to view what courses we offer.

Graduate courses are labeled 5000 and higher.

If you join the program without a previous master's degree, it will take two years/4 semesters to complete the coursework. Students generally take 2 classes their first semester, then 3-3-2 to finish the 10 courses.

Those students with a master's degree can transfer in up to 21 credits from previous coursework, and then take 9 credits on-campus.

There are no specifically required courses for all PhD students, though each research area may recommend students take specific coursework for base knowledge in their area of interest.

Our Climate

The Department of Electrical, Computer and Energy Engineering at CU Boulder is committed to fostering inclusive excellence; increasing the diversity of our faculty, staff and student voices; and providing a positive, equitable and welcoming departmental community.

In 2023 the University conducted the nationwide gradSERU survey (Graduate Student Experience Survey in the Research University). The College of Engineering and Applied Science is proud to note that our PhD students are:

- 81% satisfied or very satisfied with financial aid provided.
- 84% indicated it covers basic needs.
- 80%+ positive on advisor guidance.
- 84% of doctoral students indicate they meet with their advisor at least 3 times a month (73% at least weekly)
- 89% indicated their advisor can successfully help them
- 84% would choose CU Boulder again
- 86% would choose the same advisor again
- 89% would choose their field again.

Our Student Groups

CU Energy Club

The CU Energy Club is a multidisciplinary group focused on both education and outreach in the energy sector. Our primary goals are to expand on what CU students learn in the classroom and help them make connections in the energy industry. We appeal to both graduate and undergraduate students, drawing primarily from students of engineering, environmental science, business and anyone interested in energy.

Electrical Engineering Graduate Student Association (EGSA)

The purpose/mission of EGSA is to create and maintain an ECEE graduate student community in the department; to provide a voice for ECEE graduate students in departmental affairs. Group leadership and event attendance is open to all graduate students, PhD and MS in any degree program at any level.

Current ECEE graduate students can connect with one of their EGSA officers to discuss the department and program.

Contact egsa@colorado.edu

Optical Society of America

The Optical Society of America (OSA) is a professional organization founded in 1916 for researchers, scientists and engineers who study light and how to control it. The student chapter here at CU is a mix of undergraduate and graduate students who want to learn more about light or who are already studying it. To learn more or to receive the Zoom link, subscribe to osa@lists.colorado.edu or email amy.robinson@colorado.edu.

Women in ECEE

Women in ECEE promotes diversity in the Department of Electrical, Computer and Energy Engineering at CU Boulder. Women in ECEE's principal activities include social events where students of all genders can gather and have fun in a low-key environment (e.g. coffee hours); hosting speakers and panels to discuss professional development, work/life balance and career choices; and laboratory tours.

Our Application Process

You can find full details of the application process here.

- Complete the application & pay the application fee ($60 domestic applicants/$80 international applicants).
  - The College offers application fee waivers as listed. This includes fee waivers for qualified U.S. citizens and permanent residents until November 15.
- If needed, submit English proficiency scores (TOEFL, IELTS, Duolingo).
  - Not required for applicants from Australia, Belize, Botswana, Canada (except Quebec), Commonwealth Caribbean, Ghana, India, Ireland, New Zealand, Nigeria, Singapore, South Africa, United Kingdom, Zimbabwe
- 3 letters of recommendation.
- Unofficial copies of all transcripts – we take care of foreign transcript evaluation no WES needed.
  - You only submit official transcripts if you are accepted and choose to attend.
- Statement of Purpose – 500-750 words, double-spaced.
  - Note which of our faculty you want to work with and why.
  - Tell us about the research you are passionate about and what you hope to accomplish.
  - Take care in this statement! Make sure you are referencing CU Boulder and not another school!
  - Make sure we do the research you are interested in! Use https://www.colorado.edu/ecee/research.
    - VLSI and Embedded Systems are not PhD research areas we offer.
- **The GRE is not required for our application process**. Submitting these scores does not have any added benefit as these scores are not part of the review process.

The deadline for Fall admissions annually is December 10 for international applicants, December 15 for domestic applicants.

We do not review any applications until after the December 15 deadline.

Applicants will be notified of the decision in late February – April 15.

Email Lori.Meehan@colorado.edu with any questions.

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Most Commonly Asked Questions

Do I need to secure an advisor before applying?

No. All faculty in your area of interest will review your application for admittance to their group.

I emailed the faculty I'm interested in but they haven't responded. Should I be worried?

No. Our faculty are very busy, so they are not always able to reply to emails of interested applicants. They mean no offense; they are just unable to respond.

Do I need to secure funding before applying / Do I need to fill out a separate application for funding?

No. All our PhD offers include funding, unless the applicant has other stated means (tuition remission with employer, home country government scholarships, etc.) You only need to complete the one application.

What is the most commonly made application mistake?

Not researching an advising match with our faculty. At the level of a PhD, research is so specific that only a few people globally may work on that project. Be sure we are actively researching what you are passionate about before applying.

Is there a fee waiver for international students?

Unfortunately, no, there is no fee waiver for international students this application cycle.

Have more questions? Email Lori.Meehan@colorado.edu

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