Graduate Studies in Engineering & Computer Science

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USC Viterbi School of Engineering

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Overview

- Why Grad School?
- Where to Start
- Funding Opportunities
- Graduate Programs at USC
- Interview Tips to Stand Out

Why Grad School?

- Indulge your **intellectual curiosity**
- Master a **specialized field** of study
  - Gain greater depth and/or breadth
  - Achieve career goals
- Want to **teach** at the university level
- **Increase earning potential** (10-50% higher than counterparts with bachelor's only)

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Considerations

What is the best fit for your academic and career goals?

- Course Offerings
- Admissions Requirements
- Interests and Reputation of Faculty
- Student Life
- Geographical Location
- Funding Opportunities

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Masters and PhD Programs

- **Thesis-based** vs. **Course-based**
- **Consider your goals**
  - *If you plan on teaching at a university*, you will need a PhD
  - *For the industry-oriented*, a course-based MS degree may be the best choice
  - A thesis-based Master's may be helpful if you want to do a PhD
  - Straight to PhD from undergraduate for those interested in research that have the proper background Many students do earn a Masters degree before applying to PhD to gain research experience

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Applicant Profile

Academic readiness, relevant background

- Undergraduate degree in engineering/ computer science, math or a hard science such as physics or chemistry
- Exceptions for some interdisciplinary programs such as Data Science
- **Strong quantitative skills**
- **Demonstrated involvement & leadership**

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Closer Look: **Applicants without an engineering background**

- Masters programs vary greatly and many will accept applicants who did not major in engineering or computer science
- Check out programs such as Analytics, Data Science, Financial Engineering, Engineering Management
- Students who majored in other STEM fields such as mathematics or physics may still be eligible to apply for some programs
- Important: Math skills are critical to success in an engineering program so check the math requirements for the program you're applying for

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Closer Look: **Recommendations**

- For MS - industry or academic letters are acceptable, and should be able to speak about your abilities in some depth
- Critical in PhD applications and from academic sources - at least one letter from a professor with whom you have done research
- Maintain good relationships with professors and advisors and ask them early if you want them to provide you with a recommendation
- Review the submission requirements before requesting letters from recommenders!

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Closer Look: **Essays**

- For MS - use the personal statement as a way to show who you are
- Critical in PhD applications and from academic sources - at least one letter from a professor with whom you have done research
- Academic letters are usually preferred over industry ones
- Review the submission requirements before requesting letters from recommenders!
- Essays should be school and discipline/program-specific

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Costs, Funding, Scholarships

Scholarships

- Do your research
- Do not rely entirely on the school (consider external sources like GEM)
- Application process can vary

Work vs. School vs. Both

- Availability of research/teaching assistantships
- Consider an Internships in the summer, many with competitive salaries
- On-Campus jobs
- Work full time/pursue Masters part time

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Getting Started

- Visit campus websites
  - Explore information on programs, faculty, admission, career services, etc
- Get research experience if considering a PhD
  - Summer research programs
- Prepare for GRE if required
- Attend info sessions, grad fairs and on-campus events
- Connect with school reps, faculty, students and department advisors
- Learn more about funding opportunities
- Prepare timeline for applying
- Build relationships/network

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Explore Graduate Schools

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Explore Graduate School

Visit University Websites

US News & World Report

Visit Campus

Spring 2024

- Viterbi Graduate STEP Workshop: April

Fall 2024

- Open House
- CSU@USC
- Viterbi Preview Day

Anytime

- Campus Tour
- Schedule 1:1 Visit with Recruitment

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Explore Graduate School

Viterbi Graduate STEP Workshop

The Viterbi Graduate Step Toward Engineering Programs (STEP) Workshop invites students to explore master's and doctoral degree programs during a 2-day workshop at the USC Viterbi School of Engineering in Los Angeles, CA.

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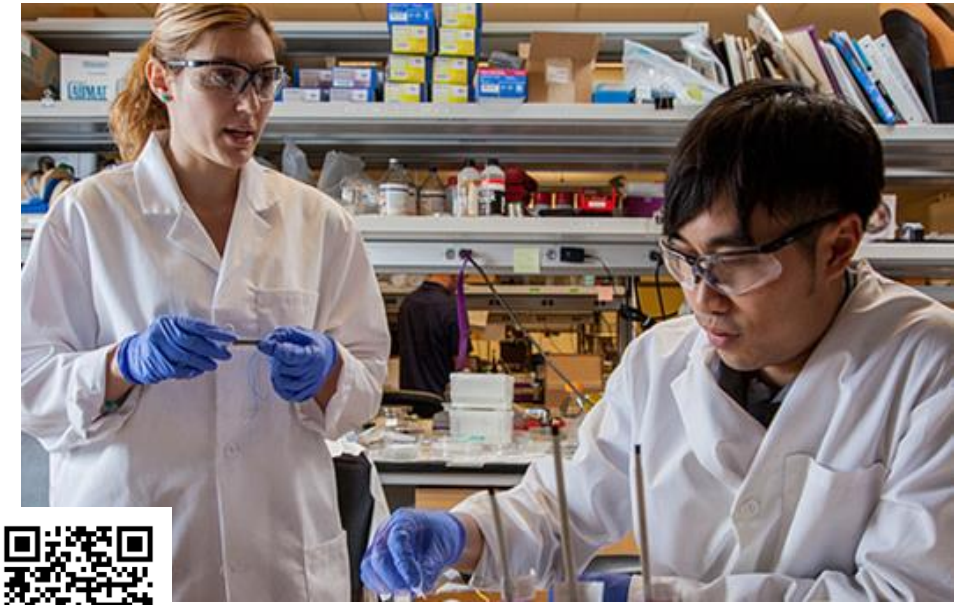
Explore Graduate School



SURE Program

- 8-week summer residential undergraduate research program at the University of Southern California in Los Angeles
- Full-time lab research (40 hours/week) with paired faculty and graduate student mentor
- Weekly professional development workshops
- Industry networking & site visits
- Weekend social events

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Funding Opportunities

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Funding Opportunities

Graduate Fellowships for STEM Diversity (GFSD)

"To increase the number of American citizens with graduate degrees in STEM fields, emphasizing recruitment of a diverse applicant pool." Graduate Fellowships for STEM Diversity (GFSD) is a partnership between federal agencies & laboratories, industry, and higher education institutions.

- $20,000 annual scholarship
- Commitment can be 2 - 6 years and can be renewed

Timeline

- August: GFSD application opens
  - work on application, resume, statement of purpose, 3 letters of recommendation
- August/September: Viterbi's Fall application opens
- December: Viterbi's application deadline and GFSD's application deadline

Eligibility

- Must be a U.S. citizen pursuing a graduate degree in a STEM field (can be a continuing student).
- Must not have completed a doctoral degree already.
- Must commit 1 - 2 summer internships with a sponsoring employer.

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Funding Opportunities

GEM Scholarship

The National GEM Consortium's mission is to enhance the value of the nation's human capital by increasing the participation of underrepresented groups (African Americans, American Indians, and Hispanic Americans) at the master's and doctoral levels in engineering and science.

- Employer GEM Fellow (Industry & University Support)
- University Fellow (University Support)

Timeline

- July: GEM portal opens
  - work on application, resume, statement of purpose, 3 letters of recommendation
  - Select GEM member universities (3 minimum, 10 maximum)
- August/September: Viterbi's Fall application opens
- October: Start submitting GEM application
- November: GEM application deadline
- December: Viterbi's application deadline

Eligibility

- Must be a senior, or graduate of an accredited engineering or computer science program at the time of application.
- Must have a minimum cumulative grade point average of 2.8/4.0.
- Must contractually agree to intern for two summers with sponsoring GEM Employer, beginning the Summer after sponsorship.

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Funding Opportunities

External Funding

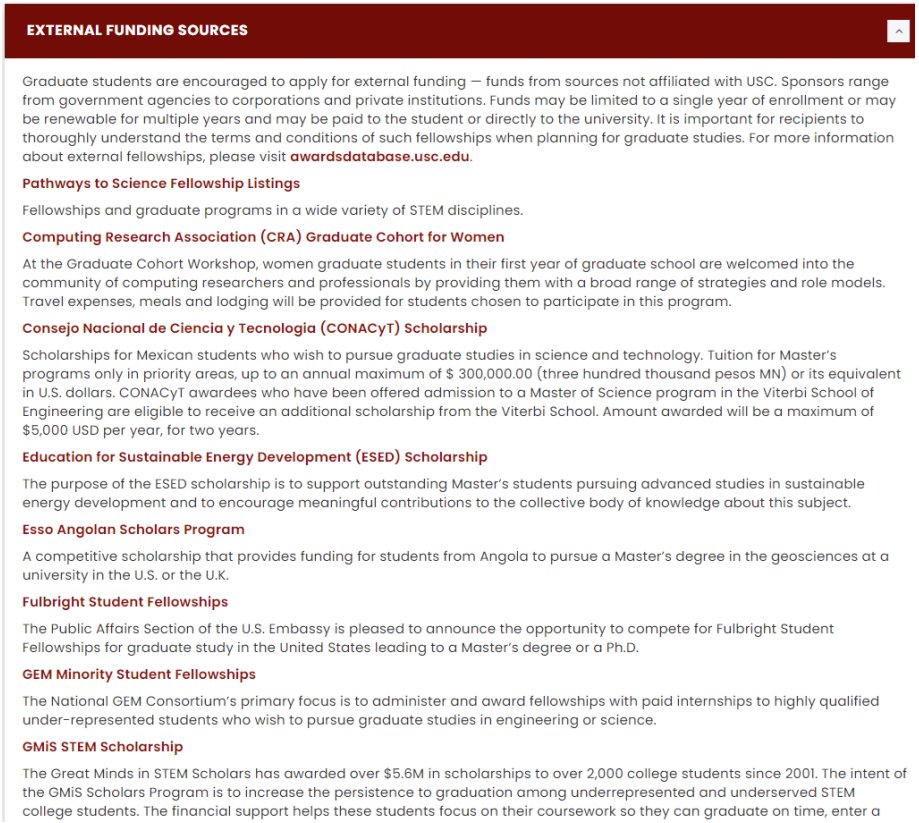
USC's Awards and Fellowships Database

https://awardsdatabase.usc.edu/app/

Search by Degree Program, Demographic, Discipline, or Keyword

Additionally

- Doctoral Programs in STEM are fully funded, including tuition, a living stipend, and health benefits.
- Application Fee Waivers are available for certain affiliations
- On-campus employment/Work Study jobs available year round.



EXTERNAL FUNDING SOURCES

Graduate students are encouraged to apply for external funding — funds from sources not affiliated with USC. Sponsors range from government agencies to corporations and private institutions. Funds may be limited to a single year of enrollment or may be renewable for multiple years and may be paid to the student or directly to the university. It is important for recipients to thoroughly understand the terms and conditions of such fellowships when planning for graduate studies. For more information about external fellowships, please visit **awardsdatabase.usc.edu**.

Pathways to Science Fellowship Listings

Fellowships and graduate programs in a wide variety of STEM disciplines.

Computing Research Association (CRA) Graduate Cohort for Women

At the Graduate Cohort Workshop, women graduate students in their first year of graduate school are welcomed into the community of computing researchers and professionals by providing them with a broad range of strategies and role models. Travel expenses, meals and lodging will be provided for students chosen to participate in this program.

Consejo Nacional de Ciencia y Tecnologia (CONACyT) Scholarship

Scholarships for Mexican students who wish to pursue graduate studies in science and technology. Tuition for Master's programs only in priority areas, up to an annual maximum of $ 300,000.00 (three hundred thousand pesos MN) or its equivalent in U.S. dollars. CONACyT awardees who have been offered admission to a Master of Science program in the Viterbi School of Engineering are eligible to receive an additional scholarship from the Viterbi School. Amount awarded will be a maximum of $5,000 USD per year, for two years.

Education for Sustainable Energy Development (ESED) Scholarship

The purpose of the ESED scholarship is to support outstanding Master's students pursuing advanced studies in sustainable energy development and to encourage meaningful contributions to the collective body of knowledge about this subject.

Esso Angolan Scholars Program

A competitive scholarship that provides funding for students from Angola to pursue a Master's degree in the geosciences at a university in the U.S. or the U.K.

Fulbright Student Fellowships

The Public Affairs Section of the U.S. Embassy is pleased to announce the opportunity to compete for Fulbright Student Fellowships for graduate study in the United States leading to a Master's degree or a Ph.D.

GEM Minority Student Fellowships

The National GEM Consortium's primary focus is to administer and award fellowships with paid internships to highly qualified under-represented students who wish to pursue graduate studies in engineering or science.

GMiS STEM Scholarship

The Great Minds in STEM Scholars has awarded over $5.6M in scholarships to over 2,000 college students since 2001. The intent of the GMiS Scholars Program is to increase the persistence to graduation among underrepresented and underserved STEM college students. The financial support helps these students focus on their coursework so they can graduate on time, enter a

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Interview Tips to Stand Out

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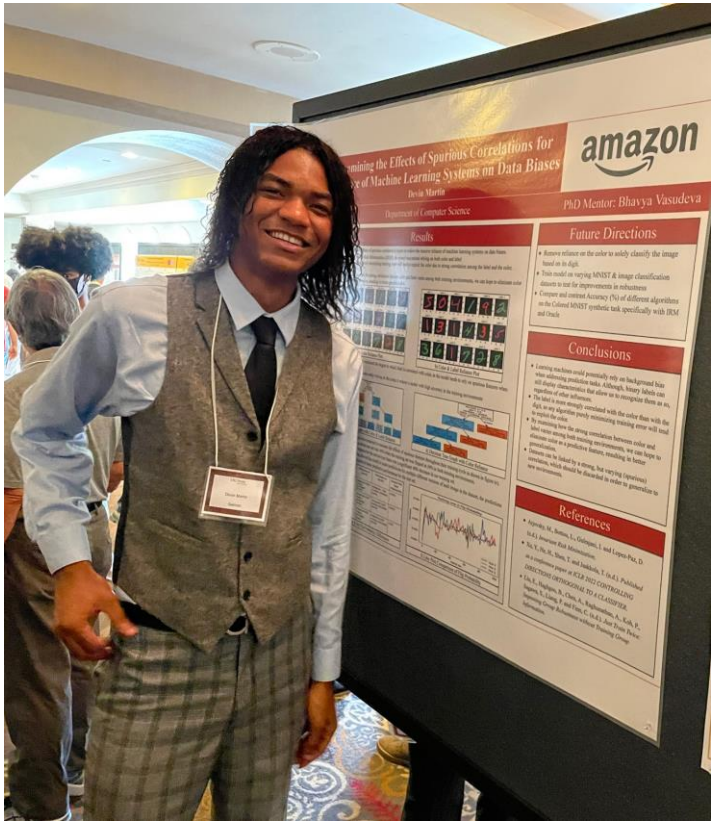
Interview Tips

Benefits

- Industry
- Scholarships
- On-Campus Employment
- Grad School Applications

Tips

- Look up typical questions
- Research the employer/school/etc
- Know your ***why?*** - Be authentic and sincere
- Connect the dots between your experiences/goals and the perceived outcomes
- Practice, practice out loud, practice over Zoom (record and review transcript)



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Interview Tips

Example: “Tell me about something you like to do outside of the classroom.”

1. What is the significance of this question?
2. Make sure to answer the question.
3. What did you learn?
4. Why is this important to your future?

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Interview Tips

“Tell me about something you like to do outside of the classroom.”

I play basketball because I believe it helps me to be fit and healthy, but even more it teaches me about collaboration. In team sports, you need to be able to trust your teammates to work together and achieve a common objective. I have seen that it’s not just about my individual effort, sometimes one person’s performance can win the game, but generally, it is the combination of coordination and a bond with my teammates. I have also learned that these collaboration skills transfer directly to working in teams in school projects and I believe that they will also transfer when I work on teams at a company.

- ☑ What is the significance of this question?
- ☑ Make sure to answer the question.
- ☑ What did you learn?
- ☑ Why is this important to your future?

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Interview Tips

“Tell me about a club or group you are involved with outside of school or work?”

I joined a competitive e-sports team. We are a team of 7 and we play League of Legends. We practice regularly once per week and my team is really good, they just lack confidence. So I reached out to a varsity team to help coach us 1:1 so we could improve. It’s been really cool because we’ve actually won some games. It’s really fun. We also analyze how to improve and I have grown so much.

- ☑ What is the significance of this question?
- ☑ Make sure to answer the question.
- What did you learn?
- Why is this important to your future?

asking for help

practice pays off

believe in yourself

what does growth look like?

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Interview Tips

Practice: “Tell me about a time when you were working to solve a problem with a group of people with different backgrounds or experiences from you. What did you personally do to help ensure the success of the team?”

What is the significance of this question?

Make sure to answer the question.

What did you learn?

Why is this important to your future?

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Interview Tips

Practice: “Tell me about yourself.”

What is the significance of this question?

Make sure to answer the question.

What did you learn?

Why is this important to your future?

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Check-In

Questions?

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