

# The Engineering and Computing Community at the University of South Carolina

Ed Gatzke



UNIVERSITY OF  
**SOUTH CAROLINA**

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College of Engineering  
and Computing

# Freshmen Engineering Challenges

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- Difficult core courses: Math, Chemistry, Physics
  - 30-40% fail to progress (C or better) in each class
- Adjustment to college life
  - Developing new social networks
  - Typical student distractions
  - Lack of structure



# USC Landscape

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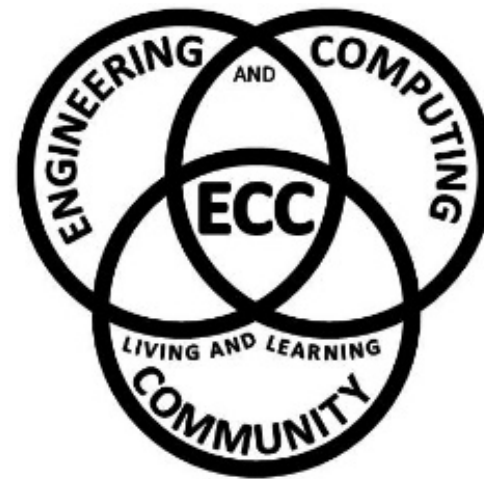
- Significant attrition from our college each year
  - 60-70% graduate from USC
- No common first year for CEC students
- No program limits to enrollment
  - Anyone can pick engineering and computing majors
- Growing CEC student body: 500 → 600 → 650 freshmen



# Residence Hall Living and Learning Communities

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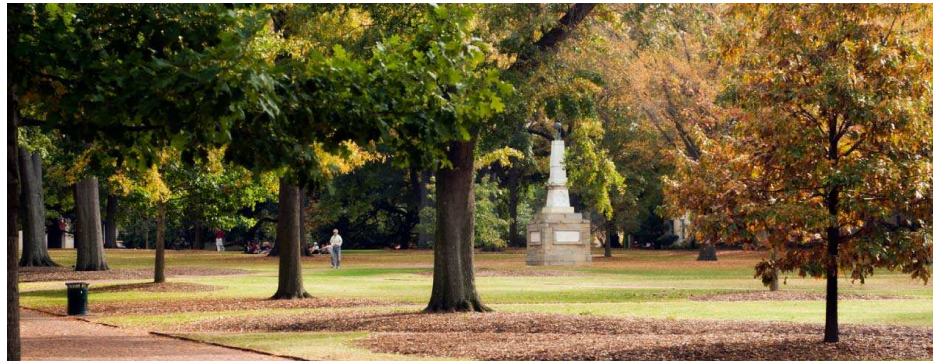
- USC Housing has had communities for many years
- Most are related to profession
  - Pre-med, sports management, etc.
- Worked so well, now all students are in a community
- **E**ngineering and **C**omputing Residence Hall Living and Learning **C**ommunity (ECC)



# ECC Challenge: Non-Scholarship Students

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- 600+ Engineering & CS students per year start in the CEC
  - 100+ in South Carolina Honors College
  - 100+ are Capstone Scholars – focus on leadership
- Remaining students:
  - Not as academically qualified
  - Struggle financially (jobs, lottery scholarship GPA requirements)
  - Sometimes feel like second (third?) class citizens





# ECC Challenge: Time Management

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- Participation challenges in past years
  - Very low numbers for many activities
- Balancing between academics and enrichment
  - Careful what opportunities are offered
- Academic support
  - Lecture + Recitation +  
Supplemental Instruction + Tutoring



# ECC Challenge: USC Housing

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- Official name of group (per housing):  
**Engineering and Computing Residence Hall  
Living and Learning Community**
- Problems in room assignments
  - Blamed partially on roommate requests
  - Confusion in application process
- Various regulations and limitations
  - T-shirts, activities, etc.
- One of the oldest dorms, slated for renovation (2017?)



# ECC Challenge: Student Engagement

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- Course
  - Compressed version of USC's University 101
- Activities
  - Fun, educational, service activities
- Fellows program
  - Financial recognition encourages participation





# ECC Course Details

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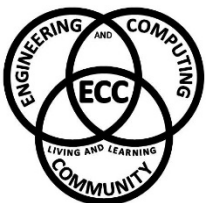
- University 101 – 3 hour course
  - CEC majors have more technical 101 courses
- 1 hour course – ENCP 105
  - Forces students to block out time for activities
  - Small writing assignments
- Traditional lectures
  - Ethics
  - Why is math important?
  - Presentation pointers
  - Future of robotics



# ECC Activities

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- Student group night
- Resume night
- Faculty panel discussion (majors night)
- Lego build night (service for state FLL competition)
- Maker activities
  - 3D printing / Robotics / Welding



# ECC Fellows Program

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- Wanted to encourage participation
- Something for their resume
- Required activities
  - Academic development and professional development
  - Social, wellness, service
  - Must “make” something
- Offering small financial incentives
  - Funded by donations



# Future Considerations

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- Focus more on social development
  - Residence Monitors more as “cruise directors”
  - More events early in semester before classes
- Help them find right path earlier
- Moved time-intensive activities to Spring
  - Hands-on robotics
  - 3D printing
  - Welding
  - Industrial plant trips
  - Game night



# Acknowledgements

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**Questions?**  
**[gatzke@sc.edu](mailto:gatzke@sc.edu)**

