Early Scholars Research Program at UIC

Dr. Renata A. Revelo
Dr. Joseph Hummel
Dr. Mohammad Taha Khan

University of Illinois at Chicago
June 23, 2020
ERSP Goals

• The program was designed to support retention of under-represented students in the field of computing, especially during the second year of their major.
• Under-represented is broadly defined to include gender, race, socio-economic status, and family background.
• The program was developed at the University of California San Diego.
ERSP Central Components

1. A course-supported apprentice model in which students work on real research problems within an active research group as they learn the fundamentals of CS research in a structured class setting.

2. A dual mentoring framework in which students are co-advised by a central team of ERSP mentors and a faculty or graduate student research mentor.

3. A team-based structure that builds community and student-to-student support

ERSP Structure

ERSP Course

• Observations of research meetings
• Development of a research proposal

Research Project

• Team-based research project
• Regular meetings with research advisor

#ASEEVCl
Context for Adoption at UIC

- U. of Illinois, Chicago is a mid-tier R1 research institution
- Diverse student population
- Hispanic Serving Institution
- 40% of student body is Pell-grant eligible
- Commuter School
- Many are first-in-family to attend university
- Nearly 50% are transfer students into college of engineering
Why is UIC a good fit for ERSP?

- Large population of under-represented students
- Commuter school with lower sense of belonging and higher rate of attrition
- Limited research opportunities for second-year engineering students
- Potentially high barrier of entry for undergraduate research
Adoption at UIC and differences from original ERSP

- Broaden to include ECE majors
- Group students such that one student is more advanced / stronger background
- Two faculty members running the program (CS & ECE)
- 10 week curriculum (quarters) → 15 week curriculum (semesters)
- 4-credit hour ERSP course → 1-credit hour ERSP course + research credit
Changes made for successful adoption

- Grading was primarily based on the final report
- In-class sessions were reduced to once-a-week for 50 minutes
- Some topics and in-class exercises were removed
- Critical components were maintained including logging
- Group students such that one student is more advanced / stronger background
ERSP first cohort

- 28 students in 8 teams successfully completed the first year of ERSP at UIC
  - 5 teams in CS and 3 teams in ECE
- 21 self-identified as female, 6 as male, and 1 as non-binary
- 3 students self-identified as Hispanic or Latinx and 2 as Black or African American
Acknowledgement

Partial support for this work was provided by the National Science Foundation under Award No. 1821501. Any opinions, findings, and conclusions or recommendations expressed in this material are those of the author(s) and do not necessarily reflect the views of the National Science Foundation.
Thank you!