Preparing Resilient Individuals to Succeed in Engineering

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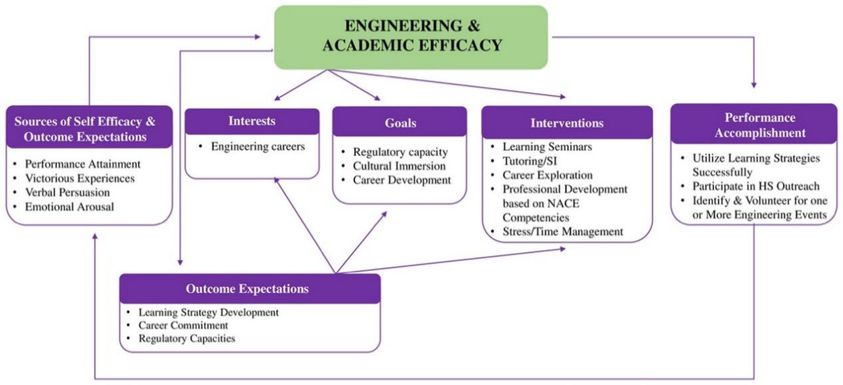
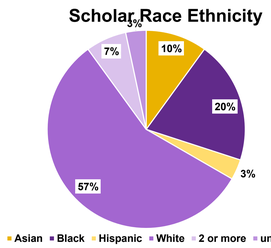
Introduction

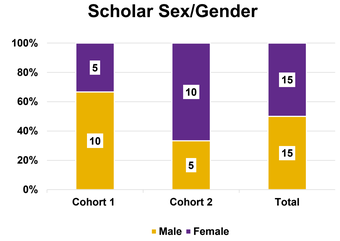
Intellectual Merit: Thorough assessments will create a refined, evidence-based model that can be utilized. PRISE is designed to address academic climate, grades, high school preparation, careers goals, self-efficacy, and confidence. The proposed theoretical framework comes from several evidence-based perspectives: Social Learning Theory (Bandura, 1977) and Social Cognitive Career Theory (SCCT) (Lent et al.,1994). This project provides the academic resources needed to be successful and tools to support perseverance.

General Objectives: (1) *New pathway to success* using direct education and intervention (2) *Reduce time to graduation.* (3) *Enhance professional development* and leadership skills through workshops, experiential learning series, and subsidized internship/co-op. (4) *Increase employer awareness*. Using research-based competencies of National Association of Colleges and Employers (NACE).



Scholars Selected





High School Academic Indicators

	Cohort 1 Mean	Cohort 2 Mean
High School GPA	4.198	4.095
ACT Composite	29.1	27.9
ACT Math	28.2	26.8

Methods

Program Design: Developed academic workshops and professional workshops based on NACE Career Readiness Competencies; among other components.

Bridge to Engineering Excellence (BEE): Differential and integral calculus prep.

EXCELD Tutoring: Tutoring first-year STEM classes;

Time Management Workshop: Priorities, schedules and resources.

Learning Styles Workshop: Felder/Solomon Engineering Learning Styles results.

Red Flags Workshop: LSU policies to protect student academic pursuits.

Teamwork and Communications Workshop (NACE): Workplace teamwork, communication; stages of team development, and types of listening.

Career Development and Professionalism (NACE): Professional image, demonstrating self-improvement and creating an elevator pitch.

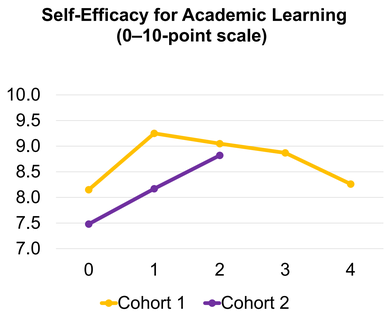
Resume Writing Workshop: Resume beyond the basics: proper wording, critical information made clear and easy, Mega Resume, and a job-specific resume.

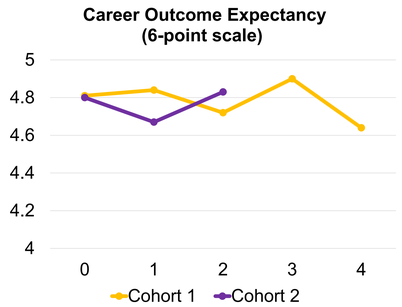
Diversity, Equity, Inclusion and Leadership (NACE): Importance of DEI; suitable leadership type in the workplace; and leadership via role-play scenarios.

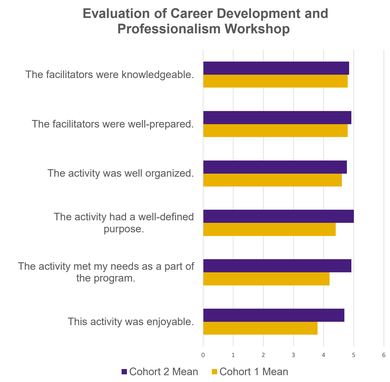
Ethics Workshop: Making ethical decisions as a student and a professional using thought-provoking case studies and discussions.

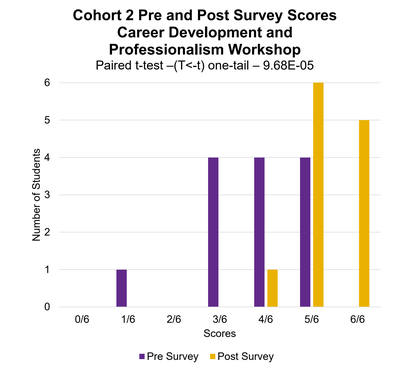
Critical Thinking & Technology (NACE): Technology and critical thinking in alignment; group activity, the Zin Obelisk, to collectively solve a complex riddle.

Results









Scholars Insights

"Just awesome. Make sure you show your face and talk with people individually at these conferences."

"Make sure you are prepared with your resume, time management, and attire. Prepare your body language and be confident about what you say and who you say it to. Don't lie. Be passionate about something – attend club meetings and participate in them. Attend PRISE meetings and be active in them as well.

Academic Performance Overall GPA

	Cohort 1 Mean	Cohort 2 Mean
Semester 1	3.67	3.66
Semester 2	3.59	3.54
Semester 3	3.50	-
Semester 4	3.55	-
Retention in CoE*	100%	87%
Scholarship Retention*	87%	87%

* As of end of Spring 2024

Conclusion

The PRISE program has implemented the program of 2 cohorts with 15 scholars in each. Cohort 1 has completed the second year, and 100 percent of the scholars were retained in engineering, and their mean first-year GPA was 3.59, well above the CoE mean of 2.75 (std. 0.80). Currently, 53 percent of the scholars are on track to graduate in four years. Internal and external evaluations indicate that the program is overwhelmingly positive with the workshops cited as a top strength by the scholars. Cohort 1 workshop pre- and post-surveys indicated about half of the first-year workshops resulted in significant gains of knowledge. Adjustments to the surveys and content were made for Cohort 2 and all but two workshops showed significant gains of knowledge for the 2023-24 academic year. The results of the self-efficacy and motivation survey indicate that the program and especially the workshop element, is having an impact in the first year. A third cohort will start fall 2024.