Early. That was the theme for this year. We redoubled our efforts this year to get students connected to each other and the College of Engineering as early as possible. For many of our students, this started on Move-In Day when the CoRe team and representatives from our partners helped over 1400 students begin their transition to MSU and the College of Engineering. For others, it began with our College Colloquium pep rally two days later...or with their first projects in EGR 100 and EGR 102 the following week. All the while, our students were living and learning together in South Neighborhood, making the connections that will help them succeed as Spartan Engineers.

CoRe continues to thrive with the support of our partners. We were thrilled to celebrate the renewal of theme partnerships from both GE and Bosch. The contributions of these teams, along with our other partners, help our students see from the beginning of their educations how engineers are solving important real world problems and creating the future. It helps students start thinking about what they want to do with their careers. Over 700 of our students participated in Partners Week activities, a new collaboration with the College’s career office, The Center, that helps connect students with potential co-op and internship opportunities. Partners Week, along with The Center’s annual Career Gallery and Engineering Expo activities, gives CoRe students a running start to their professional careers.

We are also thrilled that the CoRe team is growing. This year, we welcomed Debjani Sarkar from MSU’s Center for Language Teaching Advancement. Among other roles, Debjani will be leading our communications and marketing efforts and spatial visualization assessment activities. We also hired two new instructors for EGR 100 and EGR 102, Dr. Jenahvive Morgan from Rowan University and Dr. Janet Lam from the University of Toronto, who will bring new viewpoints and energy to the courses when they begin in the fall. The expanded instructional team will give us more freedom to innovate and explore new opportunities to make these courses exceptional learning environments for CoRe students.

Our goal remains to help every first-year engineering student become a second-year engineering student, which means getting them on the path to success...early.

S. Patrick Walton, Sc.D.
Director, College of Engineering CoRe Experience
Michigan State University
http://www.egr.msu.edu/core

The CoRe Experience is committed to “building the whole engineer”.
Welcome to the CoRe Experience!

The CoRe Experience integrates first year engineering academics and co-curricular/residential activities to support the academic, professional, and personal growth of engineering students during their first year at Michigan State University.

CoRe seeks to demonstrate to students the importance of engineering and the positive impact that engineers make on society and the world around them. Along with community and corporate partners, we bring real-world expertise and challenges into the classroom and residential environment, reinforcing the relevance of studies in engineering to solving global challenges.

“Having the tutoring across the street is a nice location and very accessible. CoRe provides good hours and great tutors.”

CoRe Experience Mission

- Provide early engineering students with unmatched learning opportunities within a supportive community that encourages academic, professional, and personal achievement

- Foster life-enriching connections between students and their peers, faculty members, advisors, and corporate representatives

- Cultivate students’ skills that encourage lifelong learning

- Demonstrate to the students the critical roles of engineers in contributing to society
CoRe co-curricular activities aimed to provide meaningful experiences for students in line with CoRe’s mission of academic, professional, and personal development. We sought to help students establish their Spartan Engineering identity, by engaging in College and campus experiential activities.

The year began with four weeks of getting students thinking about their next big step (their careers) having just finished their last big step (the high school-college transition). This started on Move-In Day, with support from our corporate partners and student organizations. Our new students started building connections that helped them find their passion. Soon after, CoRe hosted a green and white welcome to our incoming Spartan Engineering students at College Colloquium. College staff, partners, and MSU men’s hockey coach Tom Anastos encouraged our students to build strong connections and be passionate about succeeding in their education. CoRe also provided a resource fair filled with College, campus, and community student service providers, further jumpstarting our students’ undergraduate careers. Finally, in collaboration with The Center, CoRe helped students prepare for and attend Partners Week and Career Gallery activities to begin finding their first engineering jobs.

After helping students start thinking of long-term career goals, we brought the focus of our first-semester programming to success in the short-term. At our “How to Get Admitted to the College of Engineering” program, first-year students learned more about the requirements for College of Engineering admission, good study habits, and how to prepare for tests.
In addition to our nightly tutoring efforts, the week before final exams, the CoRe Tutoring Center opened its doors to all students looking for a space to study. Tutors were available during this very important week to assist students in preparing for their first (and second) final exams.

As a fun outlet (with some secret student development thrown in), CoRe Wacky Tuesdays were held each week. These ranged from casino night (with a résumé review session), mocktail beverages (with a corporate information night), a “Walking Dead” movie night (with a study abroad information table), and cotton candy and water pong (with a student organization information fair). Wacky Tuesdays were a great way for students to hang out with their CoRe peers (and maybe learn something).

Other programming throughout the year focused on professional development and community engagement and outreach. A six-week professional mentoring program was piloted to pair students with a professional engineer to connect and develop a better understanding of engineering majors and professional practice.

CoRe also hosted Dr. Raymond S. Colladay, the Associate Administrator of NASA, who shared insightful information on the future of NASA and encouraged students to participate in the NASA design challenge and competition. Dr. Arvind Thiruvengadam, of the Center for Alternative Fuels, Engines and Emissions at West Virginia University, discussed his team’s role in discovering that Volkswagen vehicles had been designed to beat emissions tests. Dr. Thiruvengadam’s presentation emphasized the importance of engineering ethics and professionalism in engineering practice. Other activities included a trip to the North American International Auto Show in Detroit, Michigan, a structural engineering tour of the Breslin Center, and a tour of the Pattern Recognition and Imaging Processing Lab of Dr. Anil K. Jain. CoRe students and Peer Leaders assisted with “Into the Streets,” a campus-wide community service project. CoRe students assisted with ongoing infrastructure maintenance projects.

Finally, to foster a fascination and curiosity for engineering in elementary and middle school girls, CoRe facilitated a workshop on the subject of surface tension during “Introduce a Girl to Engineering,” in partnership with the Women in Engineering program in the College.
CoRe’s academic program is based on the principle that engagement in meaningful engineering experiences early in students’ undergraduate careers supports their success and persistence to graduation. Through our courses, EGR 100: Introduction to Engineering Design and EGR 102: Introduction to Engineering Modeling, we strive to engage students across the disciplines in team-based projects that pique their interest and give them a window into what professional engineering really is. Activities this year occurred on multiple fronts, from new projects in the courses to engaging with campus and community partners.

Experiential projects. We continued our partnerships with ArcelorMittal (overhead crane safety and exhaust gas sampling) and Delphi (hybrid design project) and began a new partnership with Tenneco (exhaust system design and monitoring projects).

Service-learning in the first year. We formed a new relationship with the MSU Adaptive Sports and Recreation Club (ASRC), with teams of CoRe students challenged to design bicycle cargo/passenger carriers, throwing chair stabilizers, wheelchair toe guards, hand cycle pedal adapters, and athletic walkers. We also began work with the MSU Engineers Without Borders (EWB) chapter to develop water collection, purification, and heating systems as well as vehicle and pedestrian bridges. Our students also designed residence hall move in/move out systems for the MSU Residence Education and Housing Services (REHS) group. This project is scheduled for implementation for Fall Semester, 2016 move in.

Engineering and art. This year saw our partnership with the Residential College in the Arts and Humanities (RCAH), with financial support from the Ford Foundation Community Corps, expand with an exciting project for students at
the Paul Robeson Malcolm X Academy in Detroit. Our students designed a portable “stage” in the form of a 1937 Ford fire truck that will enable the voices of Detroit’s youth to be heard through local arts projects. Modification of the truck is to continue this fall through an MSU Mechanical Engineering capstone design project.

Telling the world. We were also busy collecting and analyzing data, presenting a paper at the American Society for Engineering Education (ASEE) annual conference in Seattle, WA; hosting a workshop and presenting at the First Year Engineering Experience (FYEE) conference in Roanoke, VA; and presenting at the Integrating Cognitive Science with Innovative Teaching in STEM Disciplines conference in Evanston, IL. Much of this work focused on our continuing efforts to assess students’ spatial visualization skills, as a means of supporting their success in engineering coursework.

“CoRe has provided clarity in the confusion of new experiences coming to college.”

“In EGR 100 I am learning things that are really useful and solving problems in a group with the engineering robots.”

“I like how the EGR 100 class is team based. It’s different from other classes.”

“Sets it straight as to what it takes to be a successful engineer.”

“CoRe tutors make it easy to learn and I never feel ashamed to ask for help.”

“Solidified my decision to be an engineer.”
Many Thanks to Our Partners!

Theme Partners

Consumers Energy
Count on Us

GE

BOSCH
Invented for life

Project Partners

ArcelorMittal

DELPHI

Ford

MICHIGAN STATE UNIVERSITY
Residential College in the Arts and Humanities

Resource Center for Persons with Disabilities

TENNECO