



A BOLD VISION BECOMES A BRILLIANT REALITY

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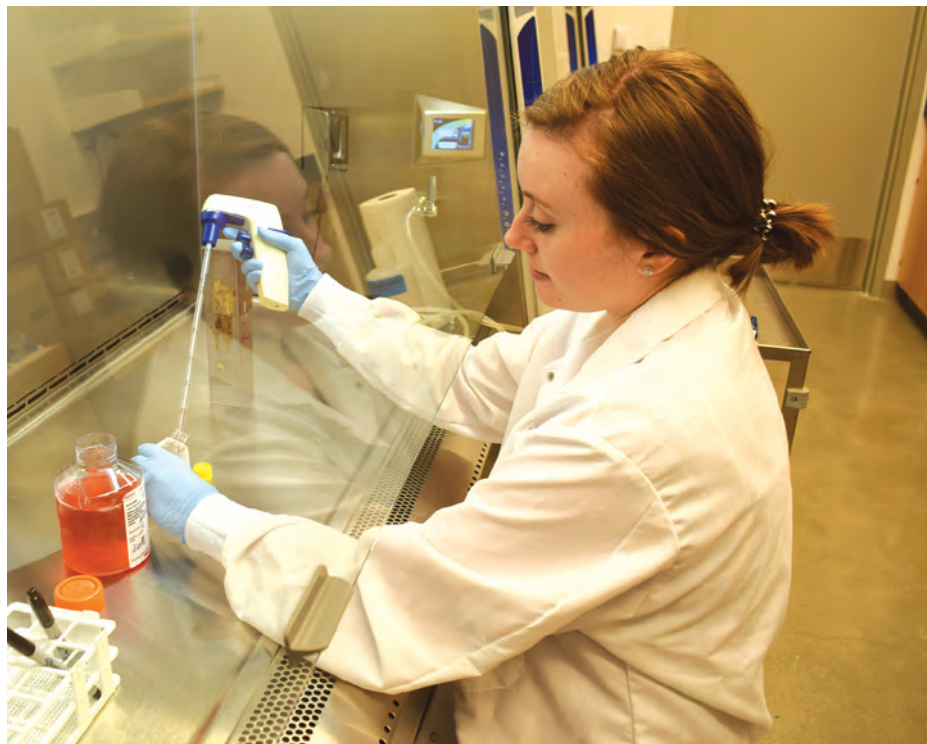
CUSTOM CONTENT • October 1, 2018

For Science at Chapman, the Theme Is Convergence

Convergence. That's the goal for the practice of science at Chapman University, and it's a goal the Keck Center for Science and Engineering helps to achieve. From inception, this space was meant to advance interdisciplinary study and accelerate progress on the scientific and societal problems that impact the world. Its design supports the transcendence of science-as-usual to solve unanswered questions.

The Keck Center serves as home to the Schmid College of Science and Technology and will soon house Chapman University's forthcoming Fowler School of Engineering, opening 2020. Chapman is interweaving experiential learning into the educational approach of the Fowler School of Engineering. This will be guided by the project-based work already in place at the Schmid College of Science and Technology. Schmid College's Grand Challenges Initiative, launched in fall 2017, immerses students in meaningful team-driven experiences from their first day on campus. This approach encourages growth and critical thinking in a way that meshes with future curricula. Students are able to build partnerships that bridge disciplines as they find purposes for their passions.

At heart, engineers are builders. Another key part of engineering is to work with a diverse array of specialists. Participants embrace the collaborative experience, and at Chapman, some of our most innovative research involves experts from across both the arts and sciences. Now, by adding the Fowler School of Engineering to the equation, Chapman can better support students' drive to innovate and invent throughout their time at the Chapman and throughout their careers.



A key element of the Keck Center is prioritizing experiential approaches to education, putting students face-to-face with solving real problems and developing data.

What's more, this experiential approach features a deliberate and unrelenting focus on partnerships with industry. For example, students work on real problems with real data. The goal is to eliminate all barriers between academic and professional cultures. In such an interlocking culture, companies identify and recruit new talent before they become free agents on the job market. Faculty members forge collaborations with their industry counterparts to develop new research agendas. And all parties widen their perspectives by taking on specialized tasks with teammates who bring to the projects a diverse array of skills and talents.

These types of partnerships already shape the educational landscape at Chapman. Students in computer science and data analytics are working with data scientists at CoreLogic on a series of challenges, exploring machine learning with large volumes of real estate data.

Students in the Machine Learning and Assistive Technology (MLAT) Lab have teamed with Experian Consumer

Services to apply predictive analytics to market analysis and credit scoring. Companies are hiring our students based on this type of collaboration. And this is only the beginning.

"We're building something special here at Chapman," says President Daniele Struppa. "We're blending calculation with creativity, experiential learning with industry partnerships, and grand challenges with a growing culture of achievement. As we push our boundaries further with the Fowler School of Engineering, we reaffirm our commitment to the things we already do well, even as we embrace new opportunities and the change that will come with them."

A Vision for Chapman's Future: The Fowler School of Engineering Emerges

Orange County has a wealth of diverse options for engineering employment. There are 352 biomedical companies, 494 high-tech companies and 29 clean-tech companies — just in this region. California itself leads the nation in the greatest need for high technology employment, with a staggering 968,800 jobs and an average salary of \$123,900 per year.

Opening in 2020, the Dale E. ('58) and Sarah Ann Fowler School of Engineering, housed in Chapman University's new Keck Center for Science and Engineering, fulfills this need for qualified, intellectual and innovative minds to fuel the future. Chapman Trustee and Alumnus Dale E. '58 and Sarah Ann Fowler are so committed to helping define that future that they're willing to put their names on it.

Literally.

Their \$45 million gift not only names the program, but it brings their Chapman philanthropy to more than \$100 million, the largest total commitment from one family made to the University.

The prospect of a School of Engineering has been in discussion at Chapman for most of the past decade. The Fowler gift will make this vision a reality and at just the right moment.

"This is a natural evolution of our success in the sciences," said President Daniele Struppa. "Chapman's Schmid College of Science and Technology; Crean College



Chapman trustee and alumnus Dale E. ('58) and Sarah Ann Fowler are the generous donors whose \$45 million gift named Chapman's Fowler School of Engineering.

of Health and Behavioral Sciences; and our recently fully-accredited School of Pharmacy have all been undergoing burgeoning growth. The completion of the Keck Center along with the plans for the Fowler School of Engineering position the university perfectly to move forward in the engineering and technical arena."

All science programs at Chapman place a priority on interdisciplinary problem-solving. The first initial majors within the Fowler School of Engineering will be electrical and computer engineering as well as software development. Civil, biomedical and mechanical engineering would be logical next-step programs.

On track to accept students as early as 2020, the new Fowler School of Engineering has the potential to create long-lasting influence not just in technological progress, but in the strength of the regional and state and, eventually, national economies.

The Fowler family has a deep connection to Chapman that goes beyond a shared dream for the future of science and technology education. Two of their three

children — son Jeffrey Fowler '88 and daughter Kathryn Fowler Flattum '88 are Chapman graduates. Their granddaughter Sarah Robblee, Ph.D., is a professor at Chapman, and daughter Lori Smith serves on the Board of Governors.

"I really feel like Chapman is part of our family, and we enjoy being involved in the University's educational areas, from science to law to the arts," Dale Fowler said. "We feel we are making a positive impact on future generations of students."



THE KECK CENTER FOR SCIENCE AND ENGINEERING **EXPERIMENT BOLDLY.**

Join us
Thursday, October 11
5:00 p.m. Grand Opening Ceremony
6:00 p.m. Open House

Ceremony takes place at the Donald and Felicity Sodaro Arch entrance,
400 N. Center Street, adjacent to the Holly and David Wilson Field.

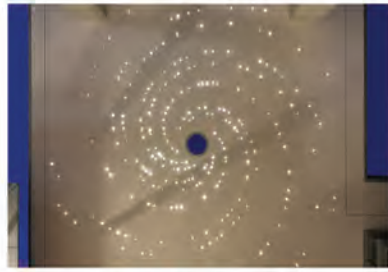
Business attire. Please RSVP to events@chapman.edu



CHAPMAN UNIVERSITY

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A LOOK INSIDE THE KECK CENTER FOR SCIENCE



ULAM SPIRAL

Step outside the Arnold and Mabel Beckman Lobby and look up. What might appear to be a constellation is actually a representation of the Ulam Spiral. This pattern, which depicts the distribution of prime numbers, is seen in natural structures ranging from galaxies to the whorl of flower petals.

ARNOLD AND MABEL BECKMAN LOBBY

This dramatic two-story entryway pays homage to scientist, innovator and humanitarian Dr. Arnold O. Beckman with display cases featuring prototypes of his inventions alongside their modern-day counterparts.



PHILIP H. CASE DEAN'S SUITE

The leadership hub in the Keck Center doesn't just have art on the walls; it has art as the walls. The suite is encased in panels depicting cellular shapes in eight layers of lighted glass, created by artist Peter Bynum.

MCCARDLE STEPS

Loaded with comfortable seating and charging stations, the McCardle Steps is the perfect place to hang out between classes and work on group projects.



ARNOLD AND MABEL BECKMAN COMPUTATIONAL SCIENCE LABORATORY

This active learning space flips the traditional classroom model on its head: students work in collaborative pods around the room with the instructor at the center.



MODULAR LABS

You won't find any cookie-cutter science here; no two labs are the same in Keck Center. That's because each one is modular and can be configured to best support the innovation and exploration taking place within its walls.



MODULAR FURNITURE

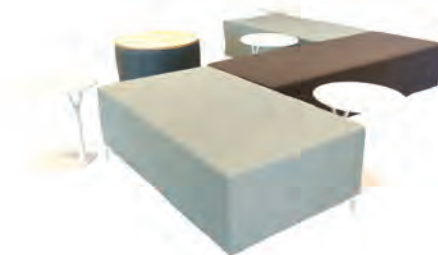
Students wanted space to work side-by-side, so modular movable furniture was incorporated in the creation of the Keck Center.



vs.



It's no mistake that you'll find both in the Keck Center. "Almost everyone in math and physics prefers chalkboards to whiteboards," said Dr. M. Andrew Moshier, professor and director of Chapman's Center of Excellence in Computation, Algebra and Topology. "The joke is that if you don't hear the chalk tapping, you can't tell you're actually working."



AND ENGINEERING



706 Seat

**HOLLY AND DAVID
WILSON AMPHITHEATRE**

How many other science centers offer built-in outdoor stadium seating and prime views to catch a football or lacrosse game?



WOMEN OF CHAPMAN GALLERY

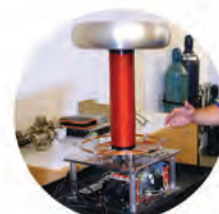
Stroll down this sprawling corridor and enjoy a panoramic view of Wilson Field on one side and a gallery of influential women in science on the other.



ENGINEERING WING

Empty for now, this expansive space is the future home to the Fowler School of Engineering, which admits its first class of students in fall 2020.

KECK TECH



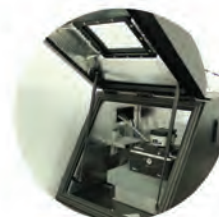
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**DONALD AND FELICITY
SODARO ARCH**

This architectural showpiece is the gateway to the Keck Center from Center Street. It also provides pedestrian access into Ernie Chapman Stadium.



ECOLOGY TEACHING LAB

With access to green spaces on the roof of the building, the third-floor Ecology Lab allows faculty and students to dig in, literally, to their ecology studies and research.



891 + 349 = 1,240

INCREASED PARKING

The expansion of the subterranean Lastinger Parking Structure beneath the Keck Center gives students, faculty and visitors direct access from the structure into the building via two elevators.



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Spinitar Designs and Integrates Audiovisual Systems for Chapman University

Chapman University first worked with Spinitar as their audiovisual integration partner in 2005. This year, they came to Spinitar with two new projects: an AV design-build for their brand-new Keck Science Center and a custom audio solution for their outdoor stadium.

There were 19 total spaces in the Keck Science Center to be designed and integrated with modern AV equipment:

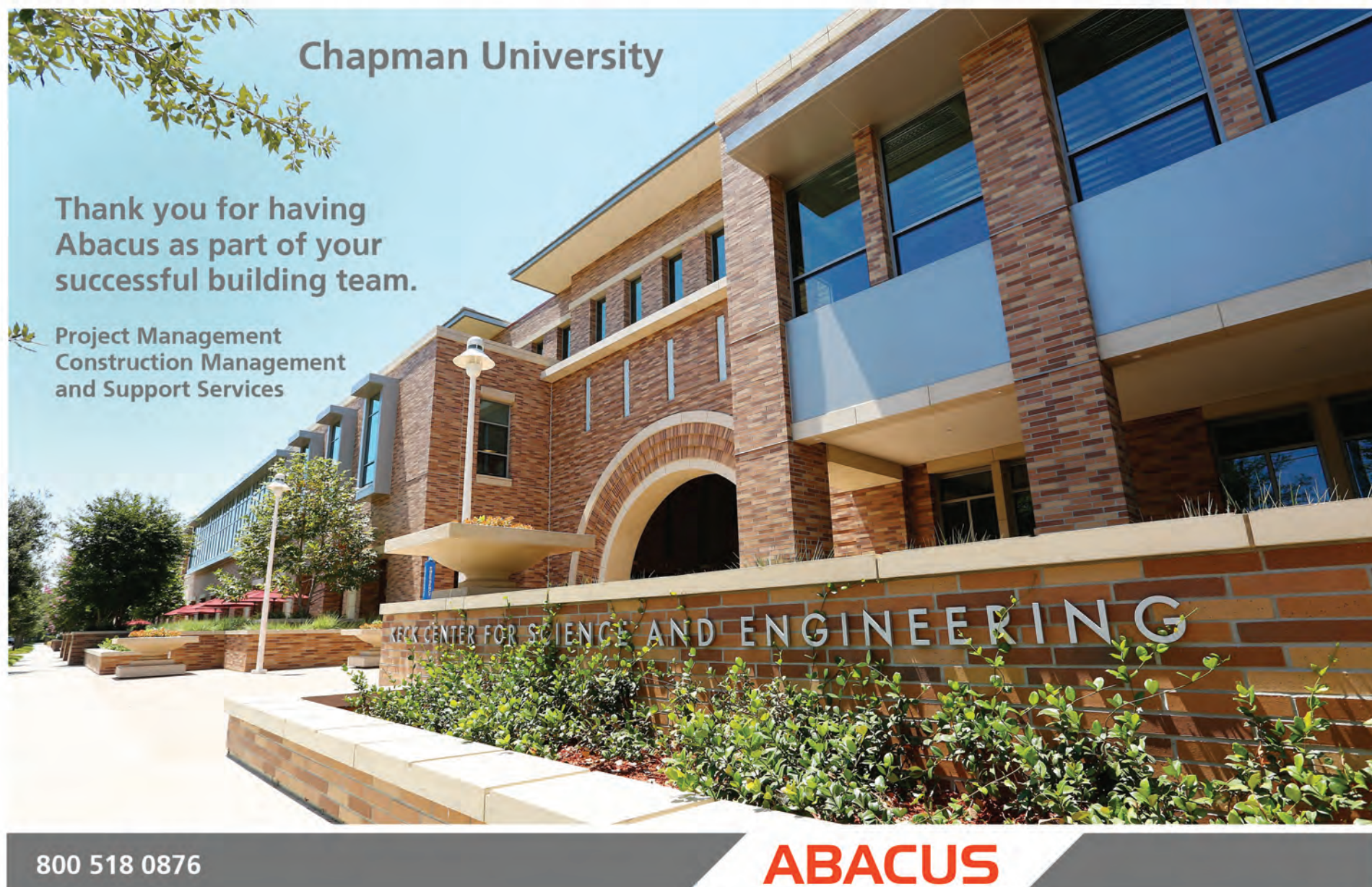
An open-ceiling collaboration room with stadium seating for 50 that led to the floor above was configured with a 95" display. The display, enabled with wireless connectivity, hangs from the floor above and slopes into the collaboration room.

The new active learning classroom contains four large displays around the perimeter of the room. For instructor/student collaboration, there is also a display built into each of the six student tables in the room that can be matrixed out from the instructor's centralized system.

17 labs, four large and 13 small, were designed with Extron systems (8x4 in the large, 8x2 in the small), voice reinforcement for professors, and Lumens document cameras. Each lab contains four mounted NEC displays, two in the front and another two halfway through the room. These systems can be accessed via the room's PC or by laptop.

The visitor side audio for the outdoor stadium was a custom solution. Spinitar designed and worked to engineer a mount to hang six Community speakers. Now, a huge sunshade structure covers the visitor side of stadium with audio that can be separated from the main stadium or synced directly to it. The QSC system is controlled from an equipment rack on the visitor side of the stadium and can also be controlled from the press box via fiber.

For more information, contact Spinitar at www.spinitar.com, (800) 722-6444, or sales@spinitar.com.

Chapman University

Thank you for having Abacus as part of your successful building team.

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KECK CENTER FOR SCIENCE AND ENGINEERING

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The Keck Center would not be possible without the support of every one of our generous donors. We are especially thankful to the following donors for the part they played in bringing this longtime University vision to reality.

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Twining Consulting was founded in 1998 upon the ideals of *Quality, Service, and Integrity*. More than two decades later, our commitment to these ideals is what drives our dedication to ensuring that our clients receive the highest quality **material testing, special inspection, and engineering services** in the most efficient method possible. Ultimately, our goal is to build upon our reputation for excellence by fostering long and mutually successful client relationships.

With a steadfast mission to cultivate multidisciplinary, collaborative innovation, Chapman University's new Keck Center for Science and Engineering will enable faculty and students alike to pursue greatness, boldly. In strong support of this mission, Twining was honored to provide materials testing and special inspection during the construction of this important project, helping to ensure the structure's safety and longevity. We look forward to seeing the Keck Center serve the University for years to come.

Twining is a leading provider of materials testing, special inspection, and engineering services for higher education projects, and have worked with Chapman for more than ten years. In addition to Chapman, we have worked with Soka, Vanguard, Pepperdine, and Loma Linda Universities, the Claremont Colleges, as well as five California State University campuses and seven University of California campuses. Our client list also includes dozens of community college and K-12 districts.

Whether your facilities master plan calls for new student housing, classroom additions, dining hall renovations, or any other type of project, Twining is the clear choice for your testing, inspection and engineering needs. Contact John Burke by phone at (562) 233-2846 or by email at jburke@twiningconsulting.com. We look forward to discussing your campus plans.

Congratulations

to the Keck Center for Science & Engineering at Chapman University. Your new facility creates a foundation that helps students learn, lead, and solve the world's most complex problems.

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Abacus Project Management is proud to have played a leading role in the development of a new Science and Engineering facility for Chapman University. In Chapman's 157-year history, the Keck Center for Science and Engineering is their largest building project at over 290,000 square feet. The project went through two years of planning, followed by 28 months of construction. 14 special consultants and over 40 subcontractors contributed to the overall success of this project.

Abacus has completed many successful projects with the firm's ability to facilitate the completion of even the most complex projects on time and on budget. Our reputation for excellence is backed by the reliable delivery of quality, professional service to every client, regardless of project size or scope. We provide a comprehensive range of services within the project/construction management profession to meet the needs of owners and real estate developers and to successfully accomplish their project goals.

Founded in 1990, Abacus Project Management provides a wide range of professional construction management services, nationwide, from our offices in Newport Beach, CA, Phoenix, AZ, and El Paso, TX. Our success and repeat business serve as testimonials to our complete competence in the implementation of project and construction management systems, as well as in the application of systematic risk, cost and project control measures throughout all phases of construction.



Abacus serves as an extension to our Client providing overall coordination, planning, and management to control cost, schedule, and quality on every project.



"Abacus has been Chapman's Program/Project/Construction Management firm of choice for nearly two decades, and has supported Campus Planning with the execution of over 100 projects with a value of close to a billion dollars. Abacus has supported the goals and objectives of the University in completing many complicated projects, with the Keck Center for Science and Engineering as the most recent of many successes. With the capable leadership and dedication of Abacus' highly-skilled staff, we have mitigated delays and cost overruns that would have otherwise negatively affected the Campus."

— Harold W. Hewitt, Jr., Executive Vice President and Chief Operating Officer, Chapman University

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