

UC San Diego

UC San Diego News Center

By Christine Clark

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2015 Commencement Series Ushers in Next Generation of Innovators and Trailblazers



Speaker J. Craig Venter urges new graduates of School of Medicine to become the leaders of new medical revolution

According to UC San Diego alumnus J. Craig Venter, a world-renowned biochemist, geneticist and entrepreneur, medical research as we know it is at the dawn of a new era.

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“We are moving from our current ad hoc, sick system to a much more proactive, preventive medicine model together with a precision medicine approach,” Venter said to 115 graduating medical students at the UC San Diego School of Medicine commencement ceremony June 7. “These changes will have enormous, disruptive impacts on all aspects of the medical industry... and particularly on you as physicians, scientists and medical practitioners.”

The event was one of 11 commencement ceremonies for the 8,364 students who graduated from UC San Diego’s six undergraduate colleges, four professional schools and various graduate programs. The majority of graduation events took place June 13-14, which were preceded by Skaggs School of Pharmacy and the School of Medicine. Venter was one of many dynamic speakers who delivered keynote addresses to students. These speakers included Frank Bruni, New York Times op-ed columnist; Christiana Figueres, United Nations executive secretary; Danny Zuker, award-winning executive producer and writer for the popular ABC series “Modern Family;” Julia Brown, executive and trustee of the UC San Diego Foundation; and more.

A new era for medicine

At the School of Medicine ceremony, Venter’s speech was preceded by a congratulatory message to the graduating medical students from Chancellor Pradeep K. Khosla. “You are entering the medical profession at a critical time,” Khosla said. “The field of medicine is advancing at a rapid rate with new research, treatments and technology emerging on a near-daily basis...with UC San Diego leading the way.”

Venter, who established a \$37 million research facility at UC San Diego in 2014 as part of the J. Craig Venter Institute based in Rockville, Md., also spoke of the changing field of medicine.

“I predict that within a decade, all of you will find it hard to believe that you were practicing medicine without knowing the genome sequence of every patient,” he said.



J. Craig Venter. Photos by Erik Jepsen/UC San Diego Publications

Venter's forward-thinking approach has garnered him praise as one of the most innovative scientists of his time. Venter made worldwide headlines in 2000 when his team tied a rival team in a furious race to be the first to sequence the human genome. In 2008, Venter was awarded the National Medal of Science by President Barack Obama.

"Many of you weren't even in high school when my company, Celera, and the government-funded program were racing to sequence the first genome," Venter said. "The first genome sequence cost my team \$100 million and nine months to complete. Today, we are close to \$1,000 per genome and that cost will likely be down below \$500 per genome within the decade."

Venter went on to describe how new advances, which include some of his current initiatives, are helping revolutionize the practice of medicine.

"Technology and computers and machine learning will become a much more integral part of clinical decision-making," Venter said. "New medical insights are being generated and applied in real time from computational based interactions at a pace that will likely make current medical practice look frustratingly static."

He also discussed how specialist physicians are going to be challenged with much more definition and diversity among diseases, as scientists reveal new molecular complexity and begin re-classifying diseases by sets of specific genomic and other molecular markers. He says this trend is already occurring in the treatment of cancer.

"We are sequencing the whole genome of cancer patients and their tumors ... Sequencing the immune system shows us if the patient has mounted an immune response to their cancer proteins," Venter said. "From here, we can use this information to make therapeutic decisions and to develop novel therapeutics and vaccines that are specific to an individual's tumor. We are starting clinical trials with Moores Cancer Center here at UC San Diego to test these personalized cancer vaccines."

Continual learning essential for physicians of the future

Venter said he also predicts that care teams will become more multi-disciplinary, that computer technology will be more ubiquitous, and data from wireless monitors and sensors relevant to individual health will be flowing constantly. At the same time, he urged the new physicians in the audience to get more personal and sophisticated in supporting patients to take ownership and control over their own health and behaviors.



He also stressed the importance of being dependent on continual learning.

Though Venter warned the new graduates that they have many challenges ahead of them, he said they are well prepared to face them as UC San Diego alumni. After Venter served in Vietnam, he attended community college in San Mateo, Calif. and then transferred to UC San Diego where he earned a bachelor's degree in biochemistry

in 1972, and a doctorate in physiology and pharmacology in 1975.

“UC San Diego gave me the best education, in an environment that was intellectually stimulating and nurturing. I truly credit my experience at UC San Diego to forming the scientist I became,” Venter said. “I made life-long friends here and continue to establish and strengthen scientific and medical collaborations that I believe are helping to change the face of healthcare today.”

He concluded his speech by urging the new graduates to pay close attention to computational and genomic-based medicine. “Become the leaders of this new medical revolution,” he said.

UC San Diego alumni speakers share advice with new alumni

Other alumni speakers for UC San Diego's 2015 commencement series included Dan Santat, author and illustrator. Santat delivered the keynote speech on Saturday, June 13 to about 930 Revelle College graduating students and more than 5,000 guests. Santat earned a bachelor's degree in microbiology from UC San Diego's Revelle College in 1998. He is the author and illustrator of “Sidekicks” and the winner of the Silver Medal from the Society of Illustrators for “Oh No!” (or “How My Science Project Destroyed the World”). He is also the creator of the Disney animated hit “The Replacements.” During the ceremony, Santat spoke about the importance of following your passion. Advice that he said has led him to successes he's had in his own career.



Dan Santat

The keynote speaker for the Graduate Division's commencement ceremony on Sunday, June 14 was alumnus Chris White. White holds a doctorate in chemistry and biochemistry from UC San Diego and is the founder of White Labs. White opened the company in 1995 to manufacture yeast cultures and provide fermentation services to the brewing, wine and distilling industries. Headquartered in Miramar, the company provides access to a variety of fresh yeast strands for San Diego brewers and beyond. At the event, White shared his experience of starting White Labs to show graduates what can be achieved by working hard, creating something different, being open to change and embracing lifelong learning.

On Sunday, June 14, keynote speaker and alumnus David Lopez addressed Sixth College's 1,000 graduating students and 2,500 guests. Lopez earned his bachelor's degree in management science from UC San Diego and co-founded USAdelante, an organization that connects Latino college students to a network of mentors. He now serves as executive director of Teach for America – San Diego, where he partners with local schools and districts to help ensure that students across the county have access to an excellent education. Lopez talked about his experience with Sixth College's graduating students and how, often, the path to progress is paved with failure, as we all experience many ups and downs in our efforts to make personal, career and societal progress.