OFFICE OF THE DEAN

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USC Viterbi School of Engineering

History: USC Engineering began in 1905, with the first courses being offered in civil and electrical engineering. The School was renamed in 2004 as the USC Andrew and Erna Viterbi School of Engineering (shortened to USC Viterbi School of Engineering), after a transformative gift from alumnus and USC Trustee Andrew Viterbi and his late wife Erna.

Vision: USC Viterbi espouses the concept of Engineering+, positioning engineering as the enabling discipline of our times. We are actively engaged in the effort to "change the conversation about engineering: *who we are, what we do and what we look like*". We believe that in order to thrive in today's exponentially changing world, in addition to knowledge and skills, engineering education should also nurture *mindsets of growth*. These include: technical excellence (we call it *hugging the exponential*), interdisciplinarity (we call it *Engineering+*), innovation and entrepreneurship, cultural competence, and understanding of the societal impact of technology (we call it *Heroic Engineering*). The latter includes addressing the National Academy of Engineering (NAE) Grand Challenges, as well as technology ethics. As part of Engineering + we collaboratively partner with almost any discipline, including bringing the data sciences and AI revolutions across the university. Along with Duke University and Olin College, we co-founded in 2009 the Global Grand Challenges Scholars Program (related to the NAE Grand Challenges), now a signature program of the NAE, that has spread to more than 100 engineering schools worldwide. In 2015 we spearheaded a national engineering diversity initiative, to "*change the face of engineering*", now adopted by more than 220 engineering schools nationwide. In recognition of these initiatives, USC Viterbi received in 2017 the ASEE President's Award (a rare distinction for an engineering school). At USC Viterbi, we pursue the strengthening of four pillars: Outstanding Talent (faculty, students and staff) and their Growth, Innovative Programs (curricular, extra-curricular and new facilities), Global Thought Leadership (pioneering research), and Impact (innovation and entrepreneurship, outreach (including K-12) and related best practices).

Programs: The school offers 15 BS programs, 17 active minors, 60 Master's programs, 13 Doctoral programs and a thriving online program consisting of 40 Master's programs and 5 graduate certificates. All its main undergraduate degree programs are ABET-accredited.

Academic Departments: Programs and degrees are offered in the following academic departments: Aerospace and Mechanical Engineering, Astronautical Engineering (one of a few in the nation), Biomedical Engineering, Computer Science, the Daniel J Epstein Department of Industrial and Systems Engineering (named in 2001 after alumnus and Trustee Daniel J Epstein), the Ming Hsieh Department of Electrical and Computer Engineering (named in 2006 after alumnus and Trustee Ming Hsieh), the Sonny Astani Department of Civil and Environmental Engineering (named in 2007 after alumnus Sonny Astani), and the Mork Family Department of Chemical Engineering and Materials Science (named in 2005 after alumnus and Trustee John Mork and his family). In addition, minors and certificates are offered by the Information Technology Program, while the school also has a vibrant Continuing Education program.

Students: In Fall 2018, the school's enrollments were 2,750 undergraduate students, 1,000 PhD students and 5,000 MS students. 35% of the UG student body is female, the 2017 and 2018 entering UG classes being 44% and 45% female, respectively. USC Viterbi has the largest number of female graduate students (about 32% of the total USC Viterbi graduate enrollment) nationally. It counts about 77,000 living alumni.

Faculty: In Fall 2018, the school counted 188 full-time, tenure track faculty, 123 full-time, non-tenure track faculty, 33 faculty with joint or other partial appointments, 20 part-time lecturers, more than 100 adjunct faculty, 96 endowed chairs, professorships or distinctions, 74 NSF Career recipients, 16 NAE members (with an additional 16 affiliated NAE members), 3 NAS members, 9 National Academy of Inventors members, 9 recipients of the PECASE Award, 1 recipient of the Presidential Award for Excellence in Science, Engineering, and Mathematics Mentoring, and 13 MIT TR-35 Recipients (of whom 9 are women). Two of our faculty have won the National Medal of Science and one the National Medal of Technology.

Research: Scholarly research is conducted in departments and research centers, with externally funded annual expenditures exceeding $207M (as of Fall 2018). Key research centers include: i. The Information Sciences Institute (ISI), founded in 1971, a world leader in research and development of advanced information processing, and computer and communications technologies, with over $100M annual research expenditures from federal agencies and the private sector. ISI helped conceive, design and implement the Internet, including communications protocols and the Domain Name System (DNS). Based in Marina del Rey, CA, it also maintains offices in Arlington, VA, and Waltham, Mass. ii. USC Viterbi is affiliated with the Institute for Creative Technologies (ICT) specializing in artificial intelligence, graphics and virtual reality to advance immersive techniques and technologies. Established in 1999, ICT is a DoD-sponsored University Affiliated Research Center (UARC) working in collaboration with the U.S. Army Research Laboratory. iii. A University Center of Excellence of the U.S. Department of Homeland Security (the Center for Risk and Economic Analysis of Terrorism Events (CREATE)), in partnership with the Price School. iv. A DOE/White House Materials Genome Initiative Center. v. The USC-Lockheed Martin Quantum Computation Center, housing a D-Wave Quantum Computer. vi. The NSF I-Corps Innovation Node Los Angeles (IN-LA), established in 2014 as a partnership between USC, Caltech and UCLA. IN-LA supports, strengthens and grows the Southern California startup and technology ecosystem (known as *Silicon Beach*). vii. USC Viterbi is also affiliated with the Alfred E. Mann Institute for Biomedical Engineering (AMI).

Rankings: In the U.S. News & World Report (USNWR) 2020 rankings of graduate programs in engineering, USC Viterbi was ranked #9 overall and #5 among private engineering schools, after MIT, Stanford, Caltech and CMU. Importantly, USC Viterbi is the only engineering school in the US on three USNWR top-10 engineering program lists: Best Graduate Schools (ranked #9), Best Online Graduate Engineering Programs (ranked #2), and Best Online Information Technology Programs (ranked #1).

Supporting Functions: USC Viterbi counts 557 staff (of which 185 are at ISI) and 23 resource employees. It occupies 470,000 NSF of space (418,000 NSF on campus and 52,000 NSF leased space off-campus) in 11 buildings, and in partial occupancy of 12 others. Its unrestricted annual budget (excluding external research) is about $220M. The Viterbi Advancement office has secured more

than $480M in gifts and pledges during the recently concluded USC Campaign (2010-2018). It also raised more than $300M during a previous fundraising initiative in the period 2001-2007.

Global Reach: The school has multiple partnerships with a number of overseas institutions, including Peking University, Tsinghua University, Technion Israel Institute of Technology, the Technical University of Aachen, the University of Sao Paolo, and many others. It offers a unique educational technology platform, called *iPodia*, to offer joint courses with a number of these schools. USC Viterbi has two overseas offices, in Shanghai, China and Bangalore, India. It is advised by several advisory boards, including the Board of Councilors, an Emerging Leaders Board, the Corporate Board, a China and East Asia Board, and an India Board.