USC HEALTH PROGRAMS

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THE ASSOCIATION OF ACADEMIC HEALTH CENTERS
ALIGNMENT OF INSTITUTIONAL MISSION PROGRAM

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TABLE OF CONTENTS

1. **ACADEMIC HEALTH AT THE UNIVERSITY OF SOUTHERN CALIFORNIA** ........................................... 4
   a. History ............................................................................................................................................ 4
      i. Keck School of Medicine (KSOM) .................................................................................................. 5
      ii. Schools of Pharmacy and Dentistry ............................................................................................. 7
      iii. Children’s Hospital Los Angeles (CHLA) ...................................................................................... 9
      iv. Other Health-Focused Schools .................................................................................................... 10
      v. Vice President for Health Affairs .................................................................................................. 12
      vi. Expansion of Programs Through Online Education ........................................................................ 13
   b. Rankings and Ratings for Clinical Programs .................................................................................... 14

2. **PARTNERSHIPS** ............................................................................................................................ 15
   a. Clinical Affiliations ......................................................................................................................... 15
      i. USC and Hoag Memorial Hospital Presbyterian ............................................................................. 15
      ii. USC and Hoag Memorial Hospital Presbyterian ............................................................................. 15
      iii. USC and the County of Los Angeles ............................................................................................ 15
      iv. USC MOU with CHLA ................................................................................................................. 15
      v. USC Affiliation with PIH Health .................................................................................................... 16
   b. Partners .......................................................................................................................................... 16
   c. Academic Relationships .................................................................................................................. 17

3. **GOVERNANCE** .............................................................................................................................. 19
   a. Units of the University and Organization ...................................................................................... 19
      i. University of Southern California – Trustees, President, President’s Cabinet ......................... 19
      ii. Keck Medicine of USC (KMC) .................................................................................................... 20
      iii. Keck School of Medicine ............................................................................................................ 21
      iv. Office of the Provost .................................................................................................................. 22
      v. Faculty Governance .................................................................................................................... 22
   b. Strategic Planning ............................................................................................................................ 25
      i. University Vision, Strategic Plan, Core Instrumentation Plan, and Code of Ethics ...................... 25
      ii. School Planning .......................................................................................................................... 26
      iii. Institute Plans ............................................................................................................................ 28
      iv. Master Planning for Health Science Campus .............................................................................. 28
   c. Succession Planning ........................................................................................................................ 29
      i. Search Processes .......................................................................................................................... 29
   d. Branding and Promotion ................................................................................................................. 30
      i. University Brands .......................................................................................................................... 30
      ii. Keck Medicine of USC ................................................................................................................ 30
      iii. Degree and Educational Programs .............................................................................................. 30
      iv. Research ...................................................................................................................................... 31
      v. Advancement/Fund Raising .......................................................................................................... 31

4. **FINANCIAL STATUS** ..................................................................................................................... 33
   a. University Annual Financial Statement ......................................................................................... 33
      i. Key Expense Drivers .................................................................................................................... 33
ii. Endowment/Fund Raising .............................................................................................................. 33

b. Financial Reporting ......................................................................................................................... 33

5. COLLABORATIVE LEADERSHIP ................................................................................................. 35
   a. Interfaces Between Education, Research, and Practice ............................................................. 35
   b. Institutes and Centers and Collaboration Groups ..................................................................... 36
      i. Institutes .................................................................................................................................... 36
      ii. Collaboration Fund .................................................................................................................. 40
   c. Faculty Profiles and Faculty Appointments .............................................................................. 41
      i. Faculty Appointments ............................................................................................................. 41
      ii. Range of Appointment Types ................................................................................................. 42
      iii. Faculty Handbook .................................................................................................................. 43
      iv. Promotion & Tenure ............................................................................................................... 43
      v. Vice Provost for Academic and Faculty Affairs ....................................................................... 44
      vi. Faculty Count ......................................................................................................................... 44
   d. Academic Review .......................................................................................................................... 45
      i. Creation of Degree Programs ................................................................................................ 45
      ii. Review of Doctoral Programs ............................................................................................... 45
      iii. Programmatic Review ........................................................................................................... 46
      iv. Enrollment Management ....................................................................................................... 46

6. INNOVATION THRUSTS .................................................................................................................... 47
   a. Research Funding Distribution Across Schools ......................................................................... 49
   b. Organization of Innovation .......................................................................................................... 51
      i. University-wide Innovation Efforts ......................................................................................... 51
      ii. School-led Innovation Efforts ................................................................................................ 52
   c. Key Areas of Licensed Technology ............................................................................................ 54
      i. Licensing .................................................................................................................................. 54
      ii. Corporate Collaborations ...................................................................................................... 55
   d. Clinical Trials Organization ......................................................................................................... 55
      i. Clinical Trials Office ................................................................................................................. 55
      ii. Clinical Investigations Support Office .................................................................................... 56
      iii. SC CTSI-Southern California Clinical and Translational Science Institute ....................... 56
      iv. Online Systems ....................................................................................................................... 56
   e. Policies on Conflicts of Interest .................................................................................................... 57
      i. USC Office of Compliance ....................................................................................................... 57
      ii. diSclose .................................................................................................................................... 57
      iii. Conflict of Interest Review Committee (CIRC) ..................................................................... 58
   f. Implementation Science ................................................................................................................. 58
   g. Creating a Research Culture Among Clinical Faculty, Students, Residents and Fellows ........... 59

7. COMMUNITY HEALTH .................................................................................................................... 60
   a. State of the Community Reports and Input from Partners ......................................................... 60
      i. Neighborhood report and LA County reports ......................................................................... 60
      ii. Critical Role of Ethnic Diversity, Hispanic Populations, and Demographics ....................... 61
iii. Input from Community Partners (chronic disease, obesity/diabetes, immigration/undocumented, pollution, trauma from other countries, homelessness) ................................................................. 61

b. Key Community Health Programs ........................................................................................................ 62
i. Service Focused .................................................................................................................................. 62
ii. Experiential Education ....................................................................................................................... 64
iii. Student Led ....................................................................................................................................... 64
iv. Research ............................................................................................................................................. 65
v. Keck Medicine, SC-CTSI and CHLA Community Benefit Offices ................................................... 65

8. INTERPROFESSIONAL EDUCATION .................................................................................................. 67
a. Degree Programs at USC by Category ................................................................................................. 67
b. Preparation of Undergraduates ........................................................................................................... 68
c. Rotations and Placement of Health Professionals ............................................................................. 69
d. Residencies at LA County, Keck Medicine, School of Pharmacy and CHLA ................................. 70
e. Postdoctoral Scholars ........................................................................................................................ 71
f. Coordination of Interprofessional Education ..................................................................................... 71

9. ACCESS AND DEVELOPMENT OF UNIQUE/SPECIALIZED CARE .................................................... 73
a. Hospital Specialty Versus Primary Care ............................................................................................ 73
b. Integration of LAC/USC + Keck Medicine ......................................................................................... 73
c. Relationships with Research Programs/Institutes ............................................................................. 74

10. APPENDICES ............................................................................................................................................. 76
a. Appendix A. Fiscal Year 2016 Expenditures ....................................................................................... 76
b. Appendix B. Spring 2016 Enrollment - Health-Related Programs ..................................................... 77
1. ACADEMIC HEALTH AT THE UNIVERSITY OF SOUTHERN CALIFORNIA

a. History

The University of Southern California was conceived in 1879 when Judge Robert Maclay Widney formed a board of trustees and secured a donation of 308 lots of land from three prominent members of the Los Angeles community — the gift provided land for a campus as well as a source of endowment, the seeds of financial support for a nascent private educational institution. The following year, California’s first research university, the University of Southern California, was born. What started in 1880 with a class of 53 students and 10 teachers has grown to today’s current 44,000 graduate and undergraduate student population and about 4,000 full-time faculty.

USC is led by Dr. C.L. Max Nikias, a professor of engineering and former USC Provost, who has served as President since 2010. His predecessor Dr. Steven Sample, also an engineer, led USC from 1991 to 2010. Both presidents are widely credited for raising the stature and reputation of the university, attracting large gifts to expand endowment, transforming the campus through new buildings and beautification, raising standards for admission and improving the ranking of the university for its faculty and student achievements.

USC exhibits the character of a large prestigious private university integrated into a major urbanized city. Unique aspects of the university include:

- Strong and diverse professional and artistic schools, coupled with a central college of letters, arts and sciences, that is deeply engaged in preparing students for impactful careers. Most schools also offer health-related research or educational programs.

- Entrepreneurial culture in which faculty, staff and students are encouraged to develop new programs, and a revenue centered management system that empowers deans to expand their faculties and student bodies through growth in income.

- Community engagement around our campuses providing a diverse set of services, funded in part by staff and faculty donations, as well as a student aid and recruitment program that attracts a highly diverse student body.

- The “Trojan Family” as a signature ethos of the university, developing life-long connections to our university community.

- An academic structure in which our health science schools are fully integrated into the university as a whole, and therefore not separated as a distinct unit of the university, although they are located on distinct campuses.

- An overriding drive toward excellence and impact, through improvement and innovation in all that we do.

USC is deeply committed to building outstanding health programs in all dimensions and all areas of the university. As stated by President Nikias immediately after his inauguration:
“Let’s make no mistake about it. When it comes to doing good for the world, we believe there is a USC way to do it, and we compete for the right to do it the USC way. This way is entrepreneurial, engaging, forward thinking, ethical, adaptable and resilient. We aspire to put this approach to work as we build the very best academic medical center in Southern California.”

With an endowment of $4.7 billion and more than $700 million in research expenditures annually, USC is home to the Dornsife College and to 21 Schools and units, some of which are highlighted in this report. USC has become a true university of the southern California region, with its University Park Campus and Health Science Campus (including the adjacent USC owned Keck Hospital and Norris Cancer Hospital as well as the LA County+USC Hospital) and affiliated Children’s Hospital Los Angeles in the vicinity of downtown Los Angeles; Institute for Information Sciences, Institute for Creative Technology and planned Ellison Institute for Transformative Medicine on the west side of Los Angeles; Alzheimer’s Therapeutic Research Institute and Social Work Academic Center in San Diego; Wrigley Institute on Catalina Island; and clinics and hospitals located in Los Angeles, San Gabriel Valley, Bakersfield, Beverly Hills, and other locations throughout the region. Measures of USC’s size and accomplishments include:

- Largest graduate program among all American universities in the STEM fields, and 12,000 students overall enrolled in health-related majors.
- Second largest federally funded research program in computer science among all American universities.
- Second most international student population among all American universities.
- Student aid budget of more than $400 million, which is among the largest in the country.
- #14 worldwide in the Thomson Reuters innovation ranking of American universities (#6 among private American universities).
- Ranked #10 among private research universities in federally funded research expenditures.

i. **Keck School of Medicine (KSOM)**

Five years after the founding of USC, the College of Medicine of the University of Southern California was established as the region’s first medical school. It was renamed Keck School of Medicine (KSOM) in 1999 after a $110 million gift was provided by the W.M. Keck Foundation. The school is led by appointed Dean Rohit Varma, MD, MPH.

The school’s history is linked to the creation of the LA county hospital (originally named the Los Angeles County Hospital and Poor Farm), which was established in 1878 to care for the area’s indigent population. In 1885 it entered into a formal affiliation with USC and in 1933, a new facility was open on State Street. Twenty-six years later, the Los Angeles County Board of Supervisors voted to change the name to the Los Angeles County+University of Southern California (LAC+USC) Medical Center. A replacement hospital with 600 beds opened in 2008, and with 600 beds is currently one of the largest public hospitals in the country. With 150,000 visits per year, LAC+USC has one of the busiest emergency departments in the country; its Level I trauma center treats over 28% of the region’s trauma victims. LAC+USC, and its associated clinics, remains the primary location for USC’s medical residencies, and is instrumental to our
medical education programs, clinical trials and community focused research programs.

LAC+USC operates special units that serve patients from throughout Southern California, including a Burn Center, a Level III Neonatal Intensive Care Unit, and a Level-One Trauma Center for the most severe injuries. LAC+USC is also home to the Rand Schrader HIV/AIDS Clinic, the Violence Intervention Program, offering medical, mental health, protective, and social services to over 20,000 victims of family violence and sexual assault each year, and to a medical clinic for children at risk for, or already in foster care. LAC+USC is led by CEO Dan Castillo, and its Chief Medical Officer is Brad Spellberg, MD, Professor of Clinical Medicine and Associate Dean for Clinical Affairs at KSOM.

Another major milestone for the school was the construction of the privately owned USC University Hospital in 1991, adjacent to the School of Medicine on the Health Science Campus, constructed with 411 beds and 11 operating rooms. Owned initially by National Medical Enterprises, and later Tenet Healthcare, the hospital extended USC’s clinical practices and enabled growth of its clinical departments. In 2006, USC sued Tenet for breach of contract, leading to a settlement in 2009 in which the university acquired USC University Hospital, as well as the 60 bed Norris Cancer Hospital.

The Keck School reached its next milestone in 2011 with the $150 million naming gift for the Keck Medical Center (in addition to the prior naming of the Keck School) from the W. M. Keck Foundation. This gift aimed to accelerate medical, clinical and translational research and education. Today, “Keck Medicine of USC” represents USC’s owned clinical enterprise, and the “Keck School of USC” represents USC’s school of medicine. Keck Medicine of USC includes the university hospital, which was renamed the Keck Hospital of USC, and USC’s faculty practice, which was renamed the USC Care Medical Group, as well as USC Norris Cancer Hospital.

In 2013, USC further expanded its medical services with the acquisition of Verdugo Hills Hospital, a 158-bed hospital in Glendale, CA. The acquisition included $30 million in capital investments by USC to improve Verdugo Hills Hospital facilities. Verdugo Hills Hospital was established in 1947 and is home to 105 doctors offering medical services in 31 specialty fields. It also received designation as a Primary Stroke Center and earned certification as an Emergency Department Approved for Pediatrics.

In the last two decades, the school’s growth strategy for research has been coupled with expansion of research institutes and their associated buildings, all of which are now led by faculty recruited to USC in the last five years:

**Norris Comprehensive Cancer Center:** USC’s cancer center has been an NCI designated cancer center since 1973, when it was named one of the first eight such centers. Harlyne Norris Cancer Research Tower opened in 2007 and Norman Topping Tower in 1996, supplementing the Ezralow Tower, creating USC’s largest health research facility. The center is directed by Steven Gruber.

**Zilkha Neurogenetic Research Institute:** Six-story research building with 70,000 square feet of lab space and a vivarium opened in 2003, and is currently led by Berislav Zlokovic.

**Broad for Regenerative Medicine and Stem Cell Research:** Established in 2006 with a gift from Eli and Edythe Broad and support from the California Institute for Regenerative Medicine, and led by Andrew McMahon.
Stevens Neuroimaging and Informatics Institute: Opening in 2016, and led by Arthur Toga, includes a new 3T MRI scanner and a Siemens Magnetron 7T MRI scanner, within a fully renovated integrated research building.

Alzheimer’s Therapeutic Research Institute (ATRI): Established in 2015 in San Diego, leads collaborative multicenter clinical trials, with a focus on effective treatments to prevent memory loss. ATRI is led by Paul Aisen.

In addition to these research institutes, USC recently opened the new 450 bed Currie Hall for student housing in September, as well as opened a new 1,200 space parking structure. The 100,000 square foot Norris Healthcare Center is under construction, opening in June of 2017, and a Hyatt House hotel is scheduled to begin construction in the near future.

Beyond the named institutes, highly active research departments include the Department of Preventive Medicine (led by Jonathon Samet, MD, and a center for research on population and environmental health, health promotion, and global health), the USC Roski Eye Institute (led by Rohit Varma, MD, MPH), and the Department of Molecular Microbiology and Immunology (led by Jae Jung, PhD), as well as the school’s largest department, the Department of Medicine (led by Ed Crandall, MD).

The Keck School is ranked #31 nationally for research by US News and World Report. It has more than 1,500 full-time faculty, 2,400 voluntary faculty physicians, and 1,800 staff, with over 900 resident physicians being trained in more than 50 specialty or subspecialty programs. It generates more than $230 million in annual sponsored research and had over 2,200 registered students for the Spring 2016 semester, offering a wide range of programs, including MD, PhD, master’s, undergraduate, professional degrees, as well as residency and clinical fellowship programs. KSOM also provides a number of dual programs such as MD/MBA, a joint effort between Keck and the Marshall School of Business, which explores the impact of business decisions on health care; the MD/MPH program, for MDs who wish to acquire an understanding of public health, and the MS in Global Medicine/Doctor of Pharmacy (PharmD/MS), that provides an advanced understanding of the role of, and issues surrounding, modern medicine in developing countries, as well as undergraduate programs in Global Medicine and Health Promotion and Disease Prevention. The school offers a Master of Public Health through is Department of Preventive Medicine.

ii. Schools of Pharmacy and Dentistry

The USC School of Pharmacy was founded in 1905 on the University Park Campus, offering a two-year graduate degree. Thirteen years later, a four-year Bachelor of Science degree was created and, in 1950, USC established the nation’s first PharmD program. In 1974, the school relocated to USC’s Health Sciences Campus, providing faculty and students access to multidisciplinary medical facilities and the LAC+USC Medical Center. Vassiliros Papadopoulos, PhD, is the dean of the USC School of Pharmacy (as of October of this year) and was previously the executive director and chief scientific officer of the Research Institute of the McGill University Health Centre in Montreal, Canada. It is currently ranked #9 as the top School of Pharmacy in the nation by US News. With about 1,000 students registered for the spring 2016 semester, it offers 26 graduate programs ranging from PharmD to Regulatory Science, Global Medicine, Pharmaceutical Economics and Policy, Drug Development, Pharmacology & Toxicology, among many others. The school also offers a wide range of certificate, fellowship, postgraduate residency and online programs. Interdisciplinary efforts include the creation, in 2009, of the Leonard D. Schaeffer Center for Health Policy and Economics, a collaboration between the School of Pharmacy and the Price School of
Public Policy. The center supports private and public sector engagement and research that promotes health through evidence-based policy solutions.

The School of Pharmacy also owns, operates and manages three pharmacies and is in the process of re-opening a 4th (listed below). In addition, the school owns and operates a closed door specialty pharmacy that manages specialty drug prescriptions for Keck Medical Center of USC and Norris Cancer Center. It is the only School of Pharmacy in the nation with this large of a pharmacy business enterprise. All sites engage students (including undergrads, intern pharmacy students, and/or pharmacy residents although to varying degrees at each location), with the goal to serve as a best practices model of pharmacy.

- **USC Plaza Pharmacy at HSC**: serves the public/community (largely patients receiving inpatient and outpatient care at Keck Medical Center), students, faculty, and staff, and offering many clinical services including travel medicine, immunizations, and smoking cessation.
- **UPC Pharmacy**: serves students, faculty, and staff. Immunizations and health screenings are offered.
- **Verdugo Hills Pharmacy**: serves the community, but largely patients seen at the hospital and clinics.
- **The Student Health Pharmacy**: serves mostly students, as well as faculty and staff.

*The Ostrow School of Dentistry* was established in 1897, and is divided between the Health Science and University Park campuses. In 2010, the school was named for its graduate Herman Ostrow, who donated $35 million to endow the school. The school’s dean is the G. Donald and Marian James Montgomery Professor of Dentistry Avishai Sadan, DMD, MBA. Ostrow supports research in a broad range of areas including, oral biology, stem cell science, clinical and biofilm research, among others. The school is home to the Center for Craniofacial Molecular Biology, with research targeting developmental, biochemical and molecular biological aspects of human development with a special emphasis on craniofacial structures in both health and disease. The school promotes opportunities for community service through community outreach efforts, where students and faculty provide oral health services and education. Its Mobile Clinic has served more than 80,000 children in need. Each year, the program holds approximately 10 clinics, providing care in both rural and urban areas in Southern and Central California. The program currently has five vehicles, including a sterilization van and portable dental equipment. Since 1994, the Mobile Clinic has been a required clinical rotation for all doctoral dental students. Interprofessional opportunities at Ostrow are also fostered through student participation in clinical health care teams, a collaborative effort between the schools of dentistry, medicine, gerontology and pharmacy. Under the supervision of Ostrow faculty and in a teaching environment, dental students and residents (dentists in training) provide high-quality care at reduced rates at the Norris Dental Science Center, from routine checkups and cleanings to fitting braces and treating oral disease. All first-time patients receive an initial evaluation of oral health in the Center for Diagnostic Services. Patients are then assigned to a student within a particular group practice, overseen by one of our faculty.

Faculty members from the School of Dentistry also provide USC faculty, staff, students, as well as non-USC clients and range of services and specialized care through the *Herman Ostrow School of Dentistry of USC Faculty Practice*, from basic check-ups, cleaning, root canals, dental implants and oral surgery to access to highly specialized clinics including:

- The Bioimaging clinic: provides 3-D X-ray technology.
- The Orofacial Pain & Oral Medicine clinic: treats patients with cancer, ulcers, infections,
abnormal growths, temporomandibular joint disorders (TMJ), headaches, jaw-function problems, sleep-disordered breathing difficulties and other disorders.

- The Diagnostic Services clinic: diagnoses and treats orofacial pain, headaches, bad breath, dry mouth, oral cancer and other conditions.
- The Esthetic and Biomimetic Restorative Dentistry clinic: using state-of-the-art ceramics

Ostrow is also home to the Division of Biokinesiology and Physical Therapy and well as the Mrs. T.H. Chan Division of Occupational Science and Occupational Therapy. The physical therapy program was founded in 1945 and is currently the #1 ranked program in the nation by US News & World Report and was the first in the nation to develop a PhD degree program in physical therapy; it also offers master’s and doctorate programs in Biokinesiology. The division is led by Associate Dean and Division Chair James Gordon, EdD, PT, FAPTA, whose research interests include neural control of movement and rehabilitation of patients with neurological disorders.

USC established the first post-professional programs in Occupational Therapy and Occupational Science in 1947 and is currently ranked #3 by US News & World Report among the nation’s best occupational therapy educational institutions. The division also established the nation’s first doctoral program in occupational sciences in 1989. Home to 78 full-time faculty, the division offers bachelor’s, master’s, OTD (clinical doctorate) and PhD degree programs, as well as specializations in pediatrics, rehabilitation medicine and the Lifestyle Redesign program. Additionally, a partnership between the Division of Occupational Therapy and the Peking University Health Science Center was recently announced to create China’s first graduate-level programs in occupational therapy. During the first two years of the partnership, the Division of Occupational Therapy and Peking University Health Science Center faculty members will collaborate to develop the contours of the program. The program’s first faculty members will be individuals appointed by the Peking University Health Science Center to spend two years at USC, earning both a post-professional master's degree and a post-professional occupational therapy doctorate. These faculty members will then return to China to launch the Peking University Health Science Center program.

iii. Children’s Hospital Los Angeles (CHLA)

Founded in 1901, Children’s Hospital Los Angeles has been affiliated with the KSOM since 1932. CHLA physicians and scientists are appointed as USC faculty, and are paid through the university. Research at CHLA is centered in the Saban Research Institute, opening in 2003 with an 88,500 square-foot- building. The 317-bed, 460,000 square-foot Marion and Anderson Pavilion opened in 2011. CHLA is ranked as one of the top 10 children’s hospitals in the county by US News and World Report, and is the only pediatric hospital to make the top 10 list in California.

The hospital currently mentors 98 fellows and is home to 12 core facilities, including a GMP Core. CHLA’s Saban Research Institute comprises basic, translational and clinical research organized around three areas of focus: a) The Institute for the Developing Mind; b) Metabolism, Immunity, Infection, and Inflammation and c) the Regenerative Medicine and Cellular Therapies. Fellows and residents at CHLA may also be appointed as post-docs at KSOM, making them eligible to apply for the USC Provost’s Clinical Residence & Fellow Program, supporting MDs who wish to pursue additional post-doctoral training, and providing access to programs such as Regulatory Sciences or Preventive Medicine, among others. Close research and educational collaborations between the USC and CHLA include the recent renewal of the $36.6 M NIH Clinical and Translational Science Award (CTSA) to co-PIs Tom Buchanan (USC) and Michele Kipke
(CHLA), and the creation of the Center for Technology and Innovation in Pediatrics (CTIP) in 2011, funded by USC’s Collaboration Fund grant program to promote the creation and development of research collaborations between faculty working on interdisciplinary research topics.

iv. Other Health-Focused Schools

The USC Suzanne Dworak-Peck School of Social Work was established in 1920, with the objective to “improve the well-being of vulnerable individuals and communities.” Today, the school is one of the most ambitious and impactful of its kind, enrolling over 3,500 students and graduating nearly one out of every 20 social workers in the country. A major part of the school’s growth strategy has been to offer MSW degrees nationwide on-line. The school is led by dean Marilyn Flynn, PhD, 2U Endowed Chair in Educational Innovation and Social Work and is home to 114 full-time faculty. Degree programs include Master of Social Work (on campus and online), and online Doctor of Social Work (DSW), as well as a PhD and eight dual degree programs. It is ranked #12 by US News Grad Schools among the nation’s schools with top social work programs. The school is also home to two centers: the Center for Innovation and Research on Veterans and Military Families, with a mission to inform decision-makers on policy issues affecting veterans and their families; and the Hamovitch Center for Science in the Human Services, which supports faculty engaged in basic and applied research focused on the needs, behaviors and problems of groups which are vulnerable in society because of their at-risk status. This fall, the school became the first school of social work to offer a degree in nursing, an online MSN as Family Nurse Practitioner, designed for RNs who hold a bachelor’s degree and at least one year of experience. This fall, the school received the largest naming gift ever for any school of social work, in the amount of $60 million, from one of its graduates, Suzanne Dworak-Peck.

The Sol Price School of Public Policy was created in 1998 after the merger of the School of Public Administration (founded in 1929) and the School of Urban Planning (founded in the 1980s). The school was named for Sol Price in 2011 after a transformational gift from the Price Family Charitable Fund. It is led by Jack H. Knott, PhD, C. Erwin and Ione L. Piper Dean and Professor. The school is home to over 80 full-time faculty and over 1,300 students and offers a range of programs in health-related areas, including a Bachelor in Health Policy and Management, Master in Health Administration and PhD in Public Policy and Management, in addition to certificate programs in Ambulatory and Long Term Care, as well as Nonprofit Management and Policy and Public Policy. The school is the joint home for the Schaeffer Center, led by Dana Goldman, with the School of Pharmacy. The Center is located in the interdisciplinary Dauterive Hall, adjacent to the Price School on the University Park Campus. Nobel Laureate Daniel McFadden, whose research examines fundamental problems facing the health care sector, looking specifically at how consumers make choices about health insurance and medical services, is among the center’s faculty. The School was ranked #3 in 2016 by US News Best Graduate Schools among Public Affairs schools nationally within the specialty “health policy and management.” Its rankings were fourth in the overall rankings of best public affairs graduate schools in the country (up from sixth in 2012).

The USC Davis School of Gerontology was established in 1975 on the University Park Campus and was home to the country’s first PhD, master’s and bachelor’s in gerontology. Pinchas Cohen, MD, is the dean and Executive Director of the Ethel Percy Andrus Gerontology Center. With over 1,500 students registered in the spring of 2016, the school also offers undergraduate, certificate and on-line programs with curricula that explore the biological, psychological, sociological, political, medical and business dimensions of adult life. Other centers within the school include Center for Digital Ageing, which explores the use of social media and technology to help older adults, caregivers, businesses and services; and the Center for Global Ageing, increasing the understanding of how aging can vary around the world. The
school also houses the *Longevity Institute*, supporting multidisciplinary approaches to translate aging research into interventions that maximize the healthy life span.

**The USC Viterbi School of Engineering (VSOE)** began in 1906, offered by the then College of Liberal Arts. In 1928, the College of Engineering was established. The school’s growth was fueled by its close connection to southern California’s aerospace industry in the post-war era, including an emphasis on post-graduate education delivered on-site through remote classrooms. This distance learning approach evolved into VSOE’s web-delivered Distance Education Network. Investment in the creation of an Electrical Engineering-Systems Department in the 1960s, and the creation of the Information Sciences Institute in the 1970s solidified the school’s reputation as a research powerhouse. Today, USC ranks #2 in the nation in federally sponsored computer science research expenditures, with a growing component devoted to health topics, including health information management, virtual therapeutic systems, and health information discovery. Yannis Yortsos, PhD, is the dean.

Today, VSOE is home to 8,000 undergraduate and graduate students, and offers 15 bachelor’s, 57 master’s, 37 online master’s and certificates and 13 doctoral programs. The school is ranked #12 by *US News* among the best engineering schools in the nation. Its *Biomedical Engineering Department* conducts research in a wide variety of health-related areas, including neuroengineering, biosystems and biosignal analysis, medical devices (including bioMEMS and bionanotechnology), biomechanics, bioimaging and imaging informatics. VSOE also houses six health-related research centers, including the Biomimetic MicroElectronic Systems Engineering Research Center (funded by the NSF), three NIH-funded centers (the Biomedical Simulations Resource, the Medical Ultrasonic Transducer Center and the Center for Genomic and Phenomic Studies in Autism), as well as the Center for Neural Engineering, and the Center for Vision Science and Technology (funded by an NIH Bioengineering Research Partnership Grant). Additionally, in partnership with KSOM, VSOE co-founded the Health, Technology and Engineering program in 2010. Since then, HTE@USC has augmented the training of medical and engineering students through project-focused collaboration mentored by faculty from both schools. Teams develop creative and efficient solutions to real-world healthcare problems they find via clinic-based fieldwork. HTE@USC is part of a larger USC effort to promote rapid advances in healthcare through research and education combining the essentials of medicine with advanced engineering and scientific technologies. VSOE also participates in the *Ming Hsieh Institute* that supports engineering, scientific and medical research with a focus on cancer. All work funded by the institute combines the skills of medical doctors with scientists and engineers.

**The USC Dornsife College**, along with the USC University, was founded in 1880. The College includes nearly 40 departments, grouped into sciences, social sciences and the humanities, and is led by Amber Miller, PhD. In 2011 the College was named the *USC Dana and David Dornsife College of Letters, Arts and Sciences* in recognition of the benefactors’ $200 million endowment gift. The Dornsife College offers 79 undergraduate majors, 74 doctoral and master’s programs and is home to 37 departments, 41 research centers and institutes (such as the Brain and Creativity Institute), over 460 tenured and tenured-track faculty and about 8,000 students. Dornsife’s scholars include four Nobel Laureates, 51 American Association for the Advancement of Science members, 20 American Academy of Arts & Sciences fellows, 13 National Academy of Sciences members and 6 National Academy of Engineering members. Health related research is concentrated in the Biology, Chemistry, and Psychology departments.

Beyond these focused areas, health research and education occurs in many places at USC, including the Annenberg School of Communication (such as its “Hollywood, Health and Society” program), the School of Cinematic Arts (including its Creative Media and Behavioral Health Center). Marshall School of
Business (which offers a Masters of Medical Management) and Gould School of Law (with expertise in health ethics, mental health law and global health rights).

In 2013, the Dornsife College and the Viterbi School jointly established the Michelson Center for Convergent Biosciences on the University Park Campus, through the gift of the surgeon Gary Michelson. The Center is both a 190,000 square-foot research building (opening in 2017), with significant core facilities for nano-fabrication and microscopy, and a research home for programs spanning biology, chemistry, biomedical engineering, material science and other fields. The center led to the attraction of key transformational faculty, including Ray Stevens and Peter Kuhn from the Scripps Research Institute, Scott Fraser from Caltech and its director, Steven Kay, from UC San Diego. The vision of the center is to transform how research is conducted at the intersection of engineering and the life and biomedical sciences.

v. Vice President for Health Affairs

Health affairs has undergone two major reorganizations at USC, post 2000. In 2005, Joseph P. Van Der Meulen, MD, (an active AAHC member) stepped down from the position of vice president for health affairs of the Keck School of Medicine, a post he had held since 1977, and from the position of director of the division of Independent Health Professions, which he had held since 1991. The division included the departments of Occupational Science and Occupational Therapy and Biokinesiology and Physical Therapy. Dr. Van Der Meulen also served as the university’s representative to its affiliated hospital partners. He served as chair of the USC University Hospital board of governors and as a board member of USC/Kenneth Norris Jr. Cancer Hospital and other USC-affiliated hospitals. For almost 30 years, Van Der Meulen also served as the university’s lead liaison to the County of Los Angeles on USC’s involvement at LAC+USC Medical Center.

Subsequent to Dr. Van Der Meulen’s retirement, the position of VP for Health Affairs, and his office, was eliminated, and his prior responsibilities were redistributed. This included transfer of the OT and PT programs to the School of Dentistry, Animal Resources to the Office of Research, and management of the LAC+USC relationship to the Keck School’s Senior Associate Dean for Clinical Administration (Glen Ault, MD). USC’s VP for Research (Randolph Hall, PhD), became the university’s AAHC representative, because of his university wide responsibility for all aspects of research. The elimination of the VP for Health Affairs position was preceded, three years earlier, by the closure of USC’s Department of Nursing, which had existed since 1895.

The position of Senior VP for Health Affairs, reporting to President Nikias, was created in 2012 with the appointment of Thomas Jackiewicz, MPH. Jackiewicz serves as chief executive officer for Keck Medicine of USC and is responsible for oversight of the university’s clinical activities, including the Norris Comprehensive Cancer Center; USC Care Medical Group, the medical faculty practice; Keck Medical Center of USC, including all university owned hospitals and outpatient facilities and other clinical practices and joint ventures throughout Los Angeles and Orange counties. Jackiewicz is responsible for implementation of a strategic vision to significantly grow, align and integrate the medical enterprise.

The appointment of Jackiewicz is a response to USC’s strategic decision to acquire USC Hospital and Norris Hospital in 2009, integrate its faculty practice plans, and expand Keck Medicine into a major academic health enterprise.
vi. Expansion of Programs Through Online Education

USC has a strong history supporting distance and online education. It pioneered distance education 40 years ago, through TV courses and later Internet broadcasting from the Viterbi School of Engineering. Today, the USC Viterbi School of Engineering’s Distance Education Network, or DEN@Viterbi, is one of the top-ranked online graduate engineering programs in the nation, offering more than 44 different graduate degrees. Under the leadership of Elizabeth Garrett (2010-2015), the Office of the Provost created a broad and multidisciplinary online education approach by providing incentives to deans and faculty. Technology-enhanced and distance learning continued to be a cornerstone of USC’s Strategic Plan under the then Provost Max Nikias. His Strategic Plan outlined a strategy in which every academic department or interdisciplinary program should eventually offer distance learning curricula (degrees for graduate students only), while also recognizing that not all disciplines were suited for distance learning. He was committed to providing the infrastructure and training to support the plan and appointed a Chief Technology Officer for Enhanced Learning to oversee its execution.

Online education continues to be a cornerstone of the university’s strategic plan under President Nikias. Total annual revenues for online USC professional, graduate, and continuing education programs in 2012 alone reached $114.5 million, with roughly 4,800 persons enrolled in accredited USC online master’s degree programs that spanned nine different USC schools. Programs, such as the USC Rossier’s Master of Arts in Teaching online program, were recognized for their excellence, receiving the 2011 International Award for Innovative Practices in Higher Education in Washington, D.C.

Today, USC offers a large number of health-related online programs (listed below). Of note is the new Nursing@USC, the first graduate online nursing program in the United States to integrate nursing and social work practice, preparing nurses for clinical leadership roles. Nursing@USC is powered by technology the education company 2U Inc. through its cloud-based software-as-a-service technology platform. Additional online programs include:

- **Gerontology**: Gerontology, M.S.; Aging Services Management, M.A.S.M.; Gerontology, M.A.; Long Term Care Administration, M.L.T.C.A.; Nutrition, Healthspan, and Longevity, M.S.; Graduate Certificate in Gerontology
- **Health and Medicine**: Academic Medicine, M.A.C.M.; Public Health, M.P.H.;
- **Price School of Public Policy**: Executive Master of Health Administration, E.M.H.A.;
- **Dentistry**: Orofacial Pain and Oral Medicine, M.S.; Geriatric Dentistry, M.S.; Certificate Program in Geriatric Dentistry
- **Pharmacy**: Management of Drug Development, M.S.; Regulatory Science, M.S.; Graduate Certificate in Clinical Research Design and Management; Graduate Certificate in Food Safety; Graduate Certificate in Patient and Product Safety; Graduate Certificate in Preclinical Drug Development; Graduate Certificate in Regulatory and Clinical Affairs
- **Viterbi - Biomedical Engineering**: Biomedical Engineering, M.S.; Biomedical Engineering (Medical Imaging and Imaging Informatics), M.S.; Medical Device and Diagnostic Engineering, M.S.
- **Psychology**: Applied Psychology, M.S.
- **School of Social Work**: Social Work, M.S.W.
b. Rankings and Ratings for Clinical Programs

**Keck Medicine of USC Rankings:** Keck Medical Center was ranked nationally in 2016 by US News Best Hospitals in 7 adult specialties (cancer, cardiology and heart surgery, geriatrics, and nephrology, ophthalmology, orthopedics and urology). It is also rated high performing in four specialties: gastroenterology & GI surgery, neurology and neurosurgery, pulmonology, and diabetes and endocrinology. Additionally, Keck Medical Center received high performing scores for six procedures/conditions: abdominal aortic aneurysm repair, aortic valve surgery, colon cancer surgery, heart failure, hip replacement and lung cancer surgery. The 2015 Case Mix Index for Keck Hospital of USC is 2.73.

**CHLA Rankings:** In 2015, for the seventh straight year, CHLA was ranked among the top 10 children’s hospitals in the nation by U.S. News Honor Roll. CHLA’s Consortium for Innovation Program was named in Becker’s 2016 Review among the top 50 hospitals with Innovation programs. The hospitals and health systems on this list are among those that have committed to keeping up with the pace of change in healthcare by forming dedicated centers and institutes for innovation. The hospital was ranked nationally in 2016 among the top 10 Pediatric Hospital by US News Best Pediatric Hospitals in 2016: Cancer (#7), Cardiology & Heart Surgery (#10), Diabetes & Endocrinology (#8), Gastroenterology & GI Surgery (#9), Neonatology (#7), Neurology & Neurosurgery (#16); Neurology & Neurosurgery (#8), Pulmonology (#19) and Urology (#10). The 2015 Case Mix Index for CHLA is 1.81. The CHLA Saban Research Institute received $32.7 million (prime and subawards) in NIH funding and $74.8 million in total funding. The Saban Research Institute ranks eighth in the nation among children’s hospitals in NIH funding.

**USC Norris Cancer Hospital Rankings:** USC Norris Cancer Hospital was ranked nationally in 2016 by US News Best Hospitals in one adult specialty (Cancer, #18). It also achieved the highest rating possible in two procedures or conditions (colon cancer and lung cancer surgery). USC Norris Cancer Hospital is a 60-bed general medical and surgical facility. The 2015 Case Mix Index for Norris is 2.08.
2. PARTNERSHIPS

a. Clinical Affiliations

A part of USC’s growth strategy has been to expand our affiliations with outside clinical organizations, which couple with USC’s focus on tertiary and quaternary care. Examples include:

i. USC and Hoag Memorial Hospital Presbyterian

Master Collaborative Research Study Agreement between USC and Hoag Memorial Hospital Presbyterian, Dated March 31, 2016; term 10 years. Summary: subcontracting with Hoag for non-industry sponsored primary agreements and awards; Hoag and USC collaborate on clinical trials. PIs are USC faculty members; may appoint Hoag’s sub-investigators. USC provides overall technical and scientific direction of the study. Hoag serves as a study site.

ii. USC and Hoag Memorial Hospital Presbyterian

Clinical Research Services Agreement between USC and Hoag Memorial Hospital Presbyterian, Dated November 18, 2015; term 10 years. Summary: Hoag to provide clinical research services on subjects enrolled in government-funded IRB approved research studies. USC provides Research Order Form (ROF), budget and Medicare Coverage Analysis (MCA) for the studies and scheduling of the procedures, and is responsible for all regulatory contacts and communications. Hoag provides clinical research services and standard of care services required by the studies. Hoag itself bills Medicare and third party payers for billable services (standard of care), and USC pays for research services according to the budget.

iii. USC and the County of Los Angeles

Under our master services agreement (MSA), USC doctors provide clinical services to LA County’s largest hospital, LAC+USC. With few exceptions, the LAC+USC doctors are paid by USC and are USC employees, though there are a few “direct pay” doctors employed by LAC+USC. A key feature of the MSA is that USC’s doctors are encouraged to serve patients at both LAC+USC and at Keck Medicine of USC.

We also have a longstanding relationship for medical residency training, and USC serves as the IRB of record for all human subjects research at LAC+USC. In addition to USC’s longstanding MSA, USC and LA County executed a Sponsored Programs Agreement on December 14, 2014 with indefinite. Summary: conduct of sponsored programs at LAC+USC Medical Center (Hospital). USC provides information regarding sponsored programs, necessary approvals (including IRB), MCA, obtains informed consent, and conducts sponsored programs at Hospital. Hospital bills Medicare and third party payers for billable services. USC pays Hospital for sponsored program services and non-routine ancillary services and supplies.

iv. USC MOU with CHLA

USC’s master agreement with CHLA provides for all of CHLA doctors and scientists to be appointed as faculty within the Keck School of Medicine, with salaries paid through USC. This agreement has been supplemented by many partnership arrangements, particularly with respect to shared software for research, which is managed by USC and provided to CHLA for a fee. For example, one MOU provides USC Support for Data Exploration and Warehousing to Advance Research Solutions (DEWARS) with CHLA, another provides for a shared Clinical Trial Management System (OnCore), and another shared software
for research compliance (iStar, which provides IRB and conflict of interest management, for example). We have also partnered on numerous funded projects, including our Clinical and Translational Science Institute and a pediatric device consortium.

v. USC Affiliation with PIH Health
Keck Medicine of USC and PIH Health recently signed a letter of intent to jointly develop and operate service lines to enhance access and quality healthcare for the residents of eastern Los Angeles County, representing an evolution in the longstanding relationship between PIH Health and Keck Medicine of USC, which for many years has served as a primary quaternary referral center for PIH Health, a regional nonprofit healthcare delivery network that serves more than 2.1 million residents in the Los Angeles, Orange County and San Gabriel Valley region. This affiliation also provides educational opportunities between the Keck School of Medicine of USC and PIH Health, with access to clinical trials, academic affiliation for the PIH Health residency programs, and teaching and training opportunities for USC residents and fellows.

b. Partners

USC also partners with a variety of community health organization for research, education, and clinical services. Example relationships follow.

- **QueensCare** is a 501(c)(3) public charity that partners with QueensCare Health Centers, a separate nonprofit organization, to provide primary care services at six locations throughout Los Angeles. QueensCare provides partial funding for the centers, and offers referrals to specialists and hospitals for those health center patients who qualify. The population served includes those who have no health care, who do not qualify for government health programs, or who earn a household income of less than 200% of federal poverty levels. QueensCare is closely connected to the Ostrow School of Dentistry, which, for instance, provides mobile dental clinics for its patients.

- Located in Downey, CA, **Rancho Los Amigos National Rehabilitation Center** is a public rehabilitation center within LA County Department of Health Services. Rancho provides comprehensive rehabilitation services to individuals with physical disabilities due to catastrophic injuries or illnesses. Rancho treats nearly 4,000 inpatients and 75,000 outpatients annually, primarily serving residents of Los Angeles County. Approximately 25% of Rancho clients are indigent and an estimated 60% are MediCal recipients. Rancho has had close collaborations with our Neurology department in the Keck School and Physical Therapy division in the Ostrow School.

- **AltaMed** is the largest independent Federally Qualified Community Health Center in the U.S. delivering more than 930,000 annual patient visits through its 43 sites in Los Angeles and Orange Counties. Its first clinic – the East Los Angeles Barrio Free Clinic, was established on Whittier Boulevard in 1969. Designated by the Joint Commission as a Primary Care Medical Home (PCMH), AltaMed has been providing primary medical care, dental clinics and complete senior long-term care services to underserved communities for over 45 years. It also delivers disease management programs, health education, youth services, and specialty HIV/AIDS care. AltaMed has built close collaborations with our School of Pharmacy, such as improving the use of antibiotics.
• **The Children’s Clinic** was founded in 1939 by a group of physicians and community leaders who recognized the importance of access to healthcare for all children. TCC has grown from offering weekly well-child care to daily, full service health care with primary care services for children, adolescents and adults. With seven locations throughout Long Beach, and one in Bellflower, CA, it also provides health education and partners with the Legal Aid Foundation of Los Angeles to provide free legal services.

• **The JWCH Institute Inc.** is a private non-profit health agency that was established as the “Attending Staff Association of the John Wesley County Hospital” in 1960. Prior to 1979, medical research and education at county facilities were the paramount functions of the agency. After 1979, medical services and patient education took priority with a focus on community-based health education and social support programs. It provides under-served segments of the population with direct provision or coordination of health care as well as medical outreach and referrals for medical care, HIV services and drug treatment, psychosocial assessment and intervention, primary medical care, and family planning services. JWCH partners with USC in the operation of the “Student Run Clinic,” which is organized through the Family Medicine Department in the Keck School.

c. **Academic Relationships**

The Southern California region offers unique research and educational opportunities for collaborations between USC and a number of universities and large health-research centers, all located within 15 miles of USC, including the California Institute of Technology (CalTech), the University of California, Los Angeles (UCLA), Cedars Sinai Hospital and City of Hope (COH), highlighted below:

**CalTech:** USC’s Health Science Campus is located 15 minutes from California Institute of Technology’s (CalTech’s) campus in Pasadena. By contrast to USC, Caltech has a small and focused study body, predominantly in engineering, the life sciences and physical sciences, and does not have a health science program. In 1998, USC and CalTech created a joint MD/PhD program in which students do their preclinical and clinical work at USC, and their PhD work with any member of the Caltech faculty. The joint program also provides opportunities for collaborations between laboratories at both institutions, including the USC Department of Preventive Medicine, Keck School of Medicine, Viterbi School of Engineering, and the USC School of Pharmacy, as well as opportunities for training at LAC+USC Medical Center. Other large collaborative efforts with CalTech include the NSF Innovation Corps, or “i-Corps” grant, (also with UCLA), to support translation of scientific research into technology for the marketplace, and which includes research in in health-related fields such as molecular and cellular bioscience. Caltech is a world leader in basic research and offers students training and opportunities for research in a number of health-related programs including biological engineering, neuroscience and brain disorders, developmental genetics and immunology.

**UCLA:** The University of California at Los Angeles (UCLA) is a large public university located on the west side of Los Angeles (about one hour to the west of the Health Science Campus). UCLA and USC have a long and strong history of collaborations. Examples in health-related fields include the **USC/UCLA Center on Biodemography and Population Health**, a multisite center located at the USC Andrus Gerontology Center and the UCLA School of Medicine Program in Geriatric Medicine; this is one of 14 centers in the Demography and Economics of Aging Centers Program sponsored by the National Institute on Aging, to provide a synergistic research environment for the integration and
translation of research findings to understand population health. Other examples of collaboration include the $5.25M award from the National Institute of Biomedical Imaging and Bioengineering for the development of the Biomedical Real-Time Health Evaluation (BREATHE) smartphone app and cloud services platform to predict the probability of a child’s future asthma attack. Educational collaborations also include the USC-UCLA Cross-Registration program, part of an academic resource sharing program in which USC graduate students may take a portion of their program at UCLA. Ranked 24th by US News and World Reports among national universities, UCLA offers a large number of programs for careers in health.

**COH:** City of Hope is a cancer-focused medical center with strong research facilities located about 30 minutes to the east of the Health Science Campus. Research collaborations between COH and USC faculty include the California Teacher’s Study, developed by a consortium of investigators from the California Department of Health Services, the Cancer Prevention Institute of California, the University of California, Irvine, and USC and which includes collaborations with faculty form the COH Division of Cancer Etiology and the COH Comprehensive Cancer Center.

**Cedars-Sinai:** Cedars-Sinai is one of the largest medical centers in Los Angeles, located about 45 minutes to the west of Los Angeles. In addition to collaborations between individual faculty members, clinical research collaboration between USC and Cedars-Sinai are established in a Memorandum of Understanding between the two institutions, in which the respective Institutional Review Boards are available for consultations to provide assistance to the other institution.

**Kaiser Permanente (K-P):** USC has engaged in research collaborations with K-P, a large integrated health system, has medical centers and clinics located throughout the region. Its largest center is located adjacent to CHLA, about 15 minutes from the Health Science Campus. K-P is in the process of opening a new medical school in Pasadena, in close proximity to Caltech, with a focus on integrated primary care. USC has not established a relationship with the new medical school.
3. GOVERNANCE

a. Units of the University and Organization

i. University of Southern California – Trustees, President, President’s Cabinet

USC is governed by a Board of Trustees and led by President C. L. Max Nikias in conjunction with a senior administrative team responsible for managing institutional operations through administrative units and schools. Additionally, the Academic Senate, Undergraduate Student Government, and Graduate and Professional Student Senate have power to make studies, reports and recommendations to the president in matters pertaining to their constituencies.

President

C. L. Max Nikias is the eleventh president of USC. He holds the Robert C. Packard President’s Chair and the Malcolm R. Currie Chair in Technology and the Humanities, and chairs the USC Health System Board. He has been at USC since 1991, as a professor, director of national research centers, dean, provost, and now president. He holds faculty appointments in both electrical engineering and the classics. Nikias is a fellow of the American Academy of Arts and Sciences, a member of the National Academy of Engineering, a charter fellow of the National Academy of Inventors (NAI), and a fellow of the Institute of Electrical and Electronics Engineers and the American Association for the Advancement of Science.

University Board of Trustees

USC is governed by a board of trustees that has approximately 55 voting members. The board is divided into committees with specific responsibilities, such as academic affairs, investments, and compliance. The board is a self-perpetuating body. Members include:

Board Members: Chairman, John Mork, Chief Executive Officer, Energy Corporation of America; Robert A. Bradway, Chairman and Chief Executive Officer, Amgen; Ming Hsieh, Chairman and CEO of Fulgent Therapeutics and President of the USC Ming Hsieh Institute (MHI); Mitchell Lew, Chief Executive Officer, Prospect Medical Systems; Amy A. Ross, Biotechnology Executive; Tracy M. Sykes, Doctor of Physical Therapy; Leonard D. Schaeffer, Founding Chairman and CEO, WellPoint, Inc.; Mark A. Stevens, Managing Partner, S-Cubed Capital, Special Limited Partner and former Managing Partner, Sequoia Capital and Gavin S. Herbert, Chairman Emeritus, Allergan Inc. (Life Trustee).

Officers & Executives: In addition to C.L. Max Nikias, Michael Quick, is Provost and Senior Vice President for Academic Affairs. All deans report to Provost Quick, including the Dean of Medicine. James M. Staten, Senior Vice President for Finance and Chief Financial Officer; Albert Checcio, Senior Vice President for University Advancement; Todd R. Dickey, Senior Vice President, Administration; Tom Jackiewicz, Senior Vice President and Chief Executive Officer for USC Health (reporting directly to President Nikias); Thomas Sayles, Senior Vice President, University Relations, and Carol Mauch Amir, Senior Vice President and General Counsel. Randolph Hall, Vice President of Research, oversees research ethics, administration and advancement for all schools, and represents the university in AAHC.

Academic Deans of Schools (with health-related programs): Pinchas Cohen, USC Davis School of Gerontology; Marilyn L. Flynn, USC Suzanne Dworak-Peck School of Social Work; Amber Miller, USC Dornsife College of Letters, Arts and Sciences; Jack H. Knott, USC Sol Price School of Public Policy; Avishai
Sadak, Ostrow School of Dentistry of USC; Vassilios Papadopoulos, USC School of Pharmacy; Rohit Varma, Keck School of Medicine of USC; Willow Bay, incoming dean for USC Annenberg School for Communication; Elizabeth M. Daley, USC School of Cinematic Arts and Journalism and Yannis C. Yortsos, USC Viterbi School of Engineering.

Under USC’s revenue centered management model, deans are empowered and expected to attract resources to increase the quality, impact and reputation of their programs, and are given substantial power to add to their faculties. Each school has established a Board of Councilors (BOC, or similar group) to advise dean on areas of strategy and external relations. BOC members are frequently donors, strategic partners or prominent alumni.

Larger schools are sub-divided into departments or divisions (and occasionally designated “schools” within schools). Faculty report to the chairs of these departments and divisions. Deans also appoint vice deans or associate deans, with responsibilities for faculty affairs, student affairs, administration, research or other areas for which they are responsible.

Institutes and Centers: Most research centers and institutes at USC report to deans (or designees). They are funded via external grants and contracts and school resources. Directors include: Paul Aisen, MD, Professor of Neurology, Director, Alzheimer’s Therapeutic Research Institute; Andrew P. McMahon, PhD, Edythe and Eli Broad Center for Stem Cell Research and Regenerative Medicine; Arthur W. Toga, PhD, USC Mark and Mary Stevens Neuroimaging and Informatics Institute; Thomas A. Buchanan, MD, CTSI, and Co-Director, Diabetes and Obesity Research Institute; John D. Carpten, PhD, USC Institute for Translational Genomics; Stephen B. Gruber, MD, PhD, MPH, Norris Comprehensive Cancer Center; Berislav V. Zlokovic, MD, PhD, Zilkha Neurogenetic Institute; David Agus, MD, , Lawrence J. Ellison Institute for Transformative Medicine of USC and the Center for Applied Molecular Medicine; Mark Humayun, MD, PhD, USC Eye Institute; Steven Kay, PhD, Director of the Michelson Center for Convergent Bioscience; Bradley Peterson, MD, Interim Director, Saban Institute and Director, Institute for the Developing Mind, at Children’s Hospital Los Angeles. USC’s largest research institute is the Information Sciences Institute in Marina del Rey, directed by Prem Natarajan, PhD, and reporting to the dean of engineering. USC’s second largest research institute is the Institute for Creative Technologies in Playa Vista, directed by Randall Hill, PhD, and reporting to the Vice President of Research. Both institutes include health informatics programs, and are located about one hour from the Health Sciences Campus.

ii. Keck Medicine of USC (KMC)

Keck Medicine of USC is the university’s owned medical enterprise, one of only two university-based medical systems in Los Angeles County, led by Thomas Jackiewicz. KMC is the region’s first medical school and includes the USC Norris Comprehensive Cancer Center as well as medical faculty practice (the USC Care Medical Group, directed by Rohit Varma, MD, MPH) and the Keck Medical Center of USC, which includes two acute care hospitals (401-licensed bed Keck Hospital of USC and 60-licensed bed USC Norris Cancer Hospital) and owns USC Verdugo Hills Hospital (158-licensed bed community hospital). It also includes more than 40 outpatient facilities, some at affiliated hospitals, in Los Angeles, Orange, Kern, Tulare and Ventura counties.

To achieve its mission — to become a recognized top-tier academic medical center providing exceptional health care that is personalized, compassionate and innovative — and to address the changing healthcare landscape in Southern California, a three-year strategic plan (2014-2016) was created, focusing on the need to invest in infrastructure, capital and systems to support the existing clinical enterprise while, at
the same time, developing a broader network in targeted geographies to off KMC service directly to the community.

Governance:

Governance of Keck Medicine of USC is overseen through its executive leadership team and boards, some of which are highlighted below.

**Keck Medicine of USC Executive Leadership:** Thomas E. Jackiewicz, MPH, Senior Vice President and Chief Executive Officer; Tammy Capretta, RN, MPH; Chief Administrative Integration and Risk Officer; Paul Craig, RN, JD, Chief Administrative Officer; Timothy James Malseed, Chief Health Information Officer; Smitha Ravipudi, MPH, Chief Operating Officer; USC Care and Ambulatory Care Services; Rohit Varma, MD, MPH, President, USC Care Medical Group;

**Keck Medicine of USC Governing Boards:** KMC has two governing boards, which meet three times per years and serve as an advisory group to the leadership team: The USC Health Systems Board (led by President Nikias, and including both internal and external members) and the Hospital Governing Board.

**USC Care Medical Group Leadership:** Rohit Varma, MD, MPH, President, USC Care Medical Group

**Keck Hospital of USC Leadership:** Rod Hanners, Chief Executive Officer; Michael Campbell, Executive Administrator, Perioperative Services; Stephanie Hall, MD, MHA, Chief Medical Officer; Annette Sy, RN, MSN, DNP, Chief Nursing Officer

**Norris Comprehensive Cancer Hospital Leadership:** Thomas E. Jackiewicz, Senior Vice President and Chief Executive Officer; Stephanie Hall, Chief Medical Officer; Annette Sy, Chief Nursing Officer; John Ziegler, Medical Director of Perioperative Services

**USC Norris Comprehensive Cancer Center Executive Leadership:** Stephen Gruber, MD, PhD, MPH, Director;); Amy Lee, PhD, Associate Director for Basic Research; Heinz-Josef Lenz, MD, Associate Director for Adult Oncology; Alan Wayne, MD, Associate Director for Pediatric Oncology

**USC Verdugo Hills Hospital Leadership:** Keith Hobbs, MBA, FACHE, Chief Executive Officer

**USC Verdugo Hills Hospital Governing Board:** Thomas E. Jackiewicz, Senior Vice President and Chief Executive Officer for Keck Medicine of USC; Vice Chair: Paul Craig, Chief Administrative Officer for Keck Medicine of USC

Chairs of clinical departments meet regularly with SVP Jackiewicz to develop and implement Keck Medicine’s strategy.

**iii. Keck School of Medicine**

The governance of the KSOM includes its senior administrative team, the Board of Overseers, as well as Officers and Executives, some of whom are highlighted below, who serves in an advisory capacity to the leadership to help the school to develop and implement its business and strategic plans.

**KSOM Senior Administrative Team:** Rohit Varma, MD, MPH, Dean, Keck School of Medicine Grace; Ted Budge, MS, Senior Associate Dean and Chief Operating Officer; Henri R. Ford, MD, Vice Dean for Medical Education; Thomas A. Buchanan, MD, Vice Dean for Research; Judy A. Garner, PhD, Vice Dean for Faculty Affairs; D. Brent Polk, MD, Vice Dean for Clinical Affairs (CHLA); Glenn Ault, MD, Senior Associate Dean for Clinical Administration (LAC+USC Medical Center); Lil Delcampo, Associate General Counsel for Health Sciences; Melany Duval, Senior Associate Dean and Associate Vice President of Health Sciences Development
Board of Overseers Members: Eli Broad, Eli and Edythe Broad Foundation; Max Nikias, USC President; Robert A. Day and Howard B. Keck Jr., W. M. Keck Foundation; Michael Quick, USC Provost; Thomas E. Jackiewicz, Senior Vice President and Chief Executive Officer USC Health, and Rohit Varma, Dean KSOM

iv. Office of the Provost

Michael Quick, PhD, was appointed Provost in 2015. He also serves as Senior Vice President for Academic Affairs and is Professor of Biological Sciences in the USC Dornsife College of Letters, Arts and Sciences. He previously served as Director of the Neuroscience Graduate Program, Vice Dean for Research and Executive Vice Dean of USC Dornsife, and Executive Vice Provost and Vice President for Academic Affairs. As the university’s second-ranking administrator, he oversees all schools, in addition to the divisions of student affairs, libraries, information technology services, research, student religious life and enrollment services. His strategic priorities for the university include tackling the most intractable, multifaceted societal problems confronting the 21st Century such as poverty; food and water security; obesity; social justice issues; cancer; sustainability and climate change; terrorism; cyber security; and aging and dementia. Offices reporting to the Provost include:

Office of Research

Headed by Randolph Hall, PhD, Vice President of Research, the Office of Research is responsible for all aspects of research ethics, administration and advancements. It invests in research initiatives, promotes USC research among sponsors, and provides services that ensure that USC achieves the highest ethical standards in its research. Units that fall under the Office of Research include the Research Advancement Office (Washington, DC), the Department of Contracts and Grants, the Institutional Review Boards (Office for the Protection of Research Subjects), the Department of Animal Resources, the Stevens Center for Innovation (technology transfer) and the Institute for Creative Technologies.

Academic Affairs

Led by Elizabeth Graddy, PhD, Academic Affairs oversees the creation and review of academic programs, consistent with the University Mission, and also manages the faculty appointment, promotion and review processes. It formulates standards for academic integrity, clears learning objectives and metrics to assess academic effectiveness. The graduate school and undergraduate affairs offices report under Academic Affairs.

Student Affairs

Led by Ainsley Carey, the office of student affairs supports all of USC’s students, ensuring student engagement with programs and activities that stimulate intellectual, social, moral and physical development beyond the classroom.

v. Faculty Governance

Academic Senate and its Committees

The Academic Senate is the representative body of the entire faculty at USC, consisting primarily of representatives elected by Faculty Councils at the various schools. Paula Cannon, PhD, Professor of Molecular Microbiology & Immunology, Keck School of Medicine, is the current President of the Faculty; senators from the Keck School of Medicine include: Suzanne Palmer,
MD, Professor of Clinical Radiology; Rima Jubran, MD, Associate Professor of Clinical Pediatrics and Designated Institute Official for CHLA; Andre Ouellette, PhD, Professor of Pathology; Rick Paulson, MD, Professor of Obstetrics and Gynecology and Chief of the Division of Reproductive Endocrinology and Infertility and Richard Watanabe, PhD, Professor, Preventive Medicine and Physiology & Biophysics and Vice Chair for Education, Preventive Medicine.

The senate includes both tenure-track faculty as well as teaching, research, and clinical faculty. The president of the Senate in the 2016 academic year was not on the tenure-track.

The Senate acts as a whole, or in committees and task forces, to address a wide range of academic and administrative issues. These include the primary concerns of advancing faculty rights, interests and responsibilities, among others. Areas of significance of the Board include: working with Faculty Councils and administrative officers to enhance the intellectual vitality of the university; encouraging and rewarding excellence in teaching and scholarship; safeguarding academic freedom, critical thinking, and the tenure system; promoting the development of a first-class research library and outstanding information infrastructure; fostering quality in distance education and innovations in distributed learning; promoting a diverse faculty and student body and looking for ways to attract and retain high quality teachers and scholars. Members of the Executive Board meet weekly throughout the year.

Academic Senate Committees report to the Senate Executive Board and the Senate and include, among others:

**Faculty Focused Committees**

The Part-Time Faculty Affairs & the Research, Teaching, Practitioner and Clinical Faculty Affairs committees monitor and evaluate the working environment, terms and conditions of employment, job security, compensation, benefits eligibility, opportunities for participation in governance, opportunities for professional advancement, and participation in the academic life of the university provided for part-time and non-tenure-track faculty, respectfully.

Tenured and Tenure-Track Faculty Affairs

The committee identifies, monitors, and evaluates specific issues of concern to tenured and tenure-track faculty, including but not limited to faculty governance, tenure, compensation, benefits, and professional development at all stages of their careers.

All three committees monitor compliance with the Faculty Handbook and with stated policies of the schools or units as they relate to part-time, non-tenured and tenured and tenure-track faculty, respectively, and make recommendations to relevant Senate and University committees, and to the Academic Senate, concerning any policy issues that have an impact on their respective faculty.

**Other Faculty-Focused Committees**

*Faculty Handbook*

The committee receives proposed changes to the Handbook in matters of University governance, including faculty services, policies, and responsibilities. The committee reviews all statements to insure that the integrity and spirit of the Handbook language is maintained, and will propose to the senate such statements for incorporation in the new Handbook editions when so directed by
the Executive Board. The committee is also responsible for codifying the records of changes in the Handbook, providing a record of the source, content, and approval authority of each revision, and monitoring and recommending policies and procedures for future Handbook revisions.

**Faculty Rights and Responsibilities**
Faculty contemplating filing grievances under Chapter 7 should first consult with a co-chair of this committee, who can offer help in defining the issues and identifying the remedy desired. Grievances can be brought for any violation of rights provided by this Handbook, other policies, the law, or the individual’s faculty contract. In addition, faculty may turn to this committee for help on disputes or other problems with colleagues. For such matters the committee functions as a panel on collegial problem-solving offering consultation and informal mediation to try to resolve such problems. If attempts at informal resolution are unsuccessful, the panel may recommend the participants turn to the Faculty Mediation Officer for formal mediation, or turn to the Provost’s office.

**Joint Academic Senate/Provost Committees**

**Teaching and Academic Programs**
The committee is responsible for advising the provost on multi-school curricula and on undergraduate curricular issues and policies arising from recommendations from the Undergraduate Studies Committee; on unit requirements, residency requirements, and broad-based policies and issues related to the academic appeals process under the purview of the Committee on Academic Policies and Procedures; on student conduct matters under the purview of the Office of Student Affairs; on policies and programs related to the Center for Excellence in Teaching, including the improvement of faculty teaching or training for classroom technology; on setting priorities and launching initiatives in support of interdisciplinary teaching; and on policies and initiatives recommended by the Graduation and Retention Committee. The committee also advises the provost on strategic issues that fall under the purview of the Coupling Implementation Committee, the University Writing Committee, the Provost’s Oversight Committee on Athletic Academic Affairs and the Undergraduate Admission and Financial Aid Committee.

**Research**
The University Committee on Research periodically reviews and makes recommendations concerning policies and issues relating to the conduct and support of faculty research. The committee has developed policies on Conflicts of Interest, International Research Collaborations and Biorepositories, and has developed recommendations that led to changes in the academic, promotions and tenure manual related to collaborative research, attribution of research authorship, and research rigor and transparency. It is focused now on inclusion and diversity in research.

The faculty of each school have established an elected council to participate in the governance of the unit and the university. The elected faculty president of each school’s Faculty Council represents it as a member of the Academic Senate, as do additional delegates, as designated by the Senate Bylaws with regard to the size of the academic unit. The Faculty Council:

- Serves as a deliberative and consultative body with the authority to survey the faculty and make studies, reports and recommendations on all matters that have a significant bearing on the work
or status of the faculty;
- Identifies issues of highest priority to the faculty and may discuss and debate current issues and matters of interest to the faculty;
- Advises the dean and the dean’s other advisory bodies on academic and faculty status matters;
- Acts jointly with the dean to suggest, and to advise and consult on the appointment, and periodic review of, chairs and members of school committees;
- Organizes meetings of the faculty-at-large to discuss issues of interest to the faculty;
- Communicates with the faculty-at-large about its deliberations in a timely manner.

b. Strategic Planning

i. University Vision, Strategic Plan, Core Instrumentation Plan, and Code of Ethics

USC Strategic Plan

Since 1994, USC’s growth has been guided by a series of strategic plans. Each new plan outlined a vision of the university’s future and each new plan became a focal point for conversations within the entire Trojan Family. In 2015, Provost Michael Quick announced a new strategic planning process for the university. The new strategic plan will build on the USC Strategic Vision: Matching Deeds to Ambitions. Rather than initiate all planning from the center, the process to develop a strategic plan for the university directs the academic units to pursue innovative programs that make the most sense for their respective academic contexts. As such, the strategic planning is seen as a highly inclusive process, engaging a broad spectrum of stakeholders including faculty, staff, researchers, university leaders and, when applicable, patient advocates and the medical community. Work on the new plan is guided by a faculty committee, co-chaired by Provost Michael Quick and Vice Provost for Academic and Faculty Affairs, Elizabeth Graddy.

USC Strategic Vision

The USC Strategic Vision charts three paths:
1. *Transforming Education for a Rapidly Changing World*: to create a transformative faculty whose scholarship crosses disciplinary boundaries and whose energy sparks intellectual creativity across our campuses;
2. *Creating Scholarship with Consequence*: to increase its commitment to translational research, creative work and practice in order to address grand challenges;
3. *Connecting the Individual to the World*: to promote global and local engagement to foster mutual understanding and encourage citizenship in a global context.

Plan for Science and Technology Facilities

The Plan for Science and Technology Facilities defines an integrated set of shared laboratories that span the University Park and Health Science campuses, ensuring that faculty, students and staff have access to facilities on either campus. To this end, the Core Instrumentation Fund supports acquisition of shared instrumentation that enables major research endeavors in the sciences, medicine and engineering. Awards under this program are made through a competitive process. All equipment supported under this
announcement are accessible to the entire university community. The plan prioritizes facilities in these areas:

- *Revealing the Behavior of Molecules, Organisms and the Composition of Matter:* Centers of Excellence in Microscopy and Analysis, Cell and Tissue Imaging, Brain Imaging, Molecular Imaging, Molecular Characterization, Single Cell Technology
- *Deciphering the Codes of Life:* Centers of Excellence in Therapeutic Discovery & Development, Genomics & Personalized Medicine, Proteomics & Biomarkers, Peptide and Protein Engineering, Nano BioPhysics
- *Precision Engineering of New Substances and Devices:* Centers of Excellence in Nanofabrication, Cell and Tissue Engineering
- *Science Library of the Future:* Centers of Excellence in Digital Repository for Open Science, Biobanking and Disease Discovery
- *Computing of the Future:* Centers of Excellence in High Performance Computing and Communications, Quantum Information Science and Technology

**Code of Ethics**

The USC code of ethics states that ethical behavior is predicated on two main pillars: *a commitment to discharging the university’s obligations to others in a fair and honest manner, and a commitment to respecting the rights and dignity of all persons.* In summary, faculty, staff, students, and trustees each bear responsibility not only for the ethics of their own behavior, but also for building USC’s stature as an ethical institution. USC recognizes that the fundamental relationships upon which the university is based are those between individual students and individual professors. The university promptly and openly identifies and discloses conflicts of interest on the part faculty, staff, students, trustees, and the institution as a whole, and takes appropriate steps to either eliminate such conflicts or ensure that they do not compromise the integrity of the individuals involved or that of the university.

**ii. School Planning**

**Strategic Planning Across Academic Units**

The USC Strategic Vision document challenges USC schools and units to develop and implement their own strategic plans, with inter-school initiatives being overseen by the Office of the Provost. The schools are considered to be best situated to devise specific ways to move forward. At the same time, achieving the new vision requires a higher level of collaboration and connection among them. The annual academic planning process will ensure plans are aligned to the Strategic Vision, and charge university-wide units with the goal of developing cross-university programs.

The Office of Research asks schools to submit research plans on a biennial basis. The following summarizes the most recent versions of these plans, which are not formally strategic plans.

**Keck School of Medicine:** Technological advances coupled with national initiatives in medicine provide an opportunity for the Keck School of Medicine to expand in the following research areas: 1) neuroscience, 2) precision medicine and 3) clinical and translational research. Keck is taking a 2-pronged approach to expanding its research portfolio and success of research proposals: 1) providing funds and activities for developing competitive research (e.g.: pilot and bridge funding as well as incentivizing departments for
research) and 2) providing the infrastructure to enhance competitiveness and enable cutting edge research (e.g.: creating new core facilities, acquiring and set-up of Archibus (a software program that allows real time monitoring of Keck research space information and linking this information to research efforts); providing improved infrastructure for clinical research and improving support for core programs and centers and interschool collaborations).

_Herman Ostrow School of Dentistry_: Priorities areas for expanding research in the School of Dentistry include 1) Craniofacial development and malformations; 2) Stem cells and tissue regeneration; 3) Microbial infections and genomics; and 4) Community outreach. Plans for areas of research expansion in Occupation Science and therapy include a focus on autism, stroke, and health promotion & obesity reduction. Similarly, for the Division of Biokinesiology & Physical Therapy, the strategic plan calls for a greater focus on cancer, integrative health; neuromechanics & neural development; neurorehabilitation and pediatrics. To achieve the proposed research expansion, the school will, 1) Actively identify funding opportunities and opportunities for collaboration with other institutions; 2) provide seed/pilot grants to junior faculty; 3) increase the protected time for faculty who receive external funding; 3) establish research innovation awards for faculty and postdocs, among others.

_School of Social Work (USC-SSW)_: The strategic goals of the SSW are not discrete and disparate targets, but aligned with the University’s Strategic Vision for research which calls for “matching deeds to ambitions” and the specific path forward of “creating scholarship with consequence.” The multi-year goals include: 1) Sustain the continued growth in the quantity and quality of investigator-initiated research that will lead to the development of high impact research center and consortium grants; 2) Increase interdisciplinary, transdisciplinary, and translational research structures through building cross-cluster, cross-school, and cross-institutional research collaborative partnerships and initiatives; 3) Increase training and development activity for faculty and students; 4) Strengthen and expand relationships with community and governmental organization stakeholders in the health and human services; 6) Advance a specific role with the Cochrane and Campbell Collaboration groups; 7) Expand funding portfolios for faculty-initiated research; 8) Intensify work with the Master’s program on research; 9) Build a predictive analytics and evaluation capacity in the HCSHS in order to provide dashboards, projections and feedback for steering the growth of the research enterprise; 10) Launching of an innovative electronic on-line electronic journal akin to the PLoS for advancing the science of social work; and 11) Vigorous solidification of the global dimension of our research activities.

_Davis School of Gerontology_: Strategic priorities for expanding research for the School of Gerontology lie in the Biology of Aging, Demography/Economics of Aging, Psycho-Biology of Aging, and Public Policy & Aging. In order to support the expansion of these areas of research, as well as to increase the number of research proposals submitted by faculty and postdocs, the school plan calls for strengthening of faculty mentoring programs, grants clinics programs and editorial support; as well as for an increase of shared resource space and equipment facilities (creation of three core facilities (Mitochondrial Metabolism Core, the Assay Development/Biomarkers of Aging Core and the Aging Mouse Phenotyping Core). In addition, the Dean’s Office initiated a pilot funding program for innovative research projects as well as seed money for pilot projects for junior faculty. The school has also initiated an aggressive program to invest in hiring transformative senior faculty and young and innovative tenure-track assistant professors engaged in transformative research.

_Dornsife College of Letters, Arts & Sciences_: Research expansion priorities for the Dornsife College in areas of extramural funding are focused on 1) the development of Convergent Biosciences and 2) applied and fundamental quantitative research in economic and social sciences. Launching of The Bridge@USC will
support the convergence of research in chemistry, biology, medicine, mathematics, physics, and engineering to create the first atomic-resolution model of man. The strategic plan calls for research expansion priorities in areas of 1) development of Convergent Biosciences (molecular biosciences; translational imaging) and 2) applied and fundamental quantitative research in economic and social sciences (Center for Economic and Social Research and Stone [CESR], and the Center for Self-Report Science).

**School of Pharmacy:** Research within the School of Pharmacy is carried out in each of our three separate Departments, each with its own unique goals and strategies. 1) Pharmacology and Pharmaceutical Sciences (research priorities focus on the design and development of new generation of drugs using the biotechnology, such as genetic engineering approaches in fugal metabolite biosynthesis and recombinant protein production); 2) Titus Family Department of Clinical Pharmacy (research priorities center around the impact of novel clinical pharmacy programs on healthcare quality and cost measures and clinical & translational - bench to bedside - research); and 3) Pharmaceutical and Health Economics (as one of the nation’s leading research and educational centers, PHE has identified two primary strategies for advancement of its research: the incentivization of faculty and the strategic targeting of funding opportunities). Goals for the school also include the creation of Clusters of Excellence, to promote synergistic collaborations which advance knowledge and successfully implement new concepts in research, practice and student learning.

**iii. Institute Plans**

Governance and strategic planning at the level of institutes is dependent on the requirements set forth by the unit to which the institute reports, be it the Office of the Provost, such as the Institute for Creative Technologies, or a specific school, such as the Broad Center for Stem Cell Research and Regenerative Medicine, which falls under the Keck School of Medicine. While formal strategic plans may not be required *per se*, each institute has a governance structure, an established vision and mission, defined research and educational goals it aims to achieve and importantly, the process by which it intends to achieve its goals — a process that undergoes cyclical reviews to ensure that future resource investments and administrative efforts are dedicated in a manner to advance the research and education mission of the institute.

The Norris Comprehensive Cancer Center recently completed a comprehensive strategic plan that drives its clinical, research, and educational, and community outreach activities. The USC Norris also was renewed as an NCI-designated comprehensive cancer center from 2015 through 2020, with an NCI score in the range classified as “Outstanding-Excellent,” the best score in the 43-year history of the Norris. The NCCC is comprised of 278 faculty members from 36 Departments in 9 Schools at the University of Southern California.

**iv. Master Planning for Health Science Campus**

Launched in December 2009, USC’s Health Sciences Campus master planning process has the goal of providing a visionary framework to guide future physical development of the campus and the prosperity of its surrounding neighborhoods. The plan serves as the guiding vision for the future of the campus over the next 25 years. It also considers the potential needs for future academic, research and clinical space to properly grow and develop the academic medical center, which includes a medical school, hospitals, clinics, school of pharmacy, and other allied health divisions. The master plan boundaries include Valley Boulevard to the north, Soto Street to the east, Zonal Avenue to the south and Mission Road to the east (Figure 1).
Proposed community benefits include:

- New hotel, retail, and dining options
- Creation of new service and retail jobs at the hotel
- Greener, safer pedestrian-friendly walkways and sidewalks throughout the campus and the medical center
- Wider streets, open to the public, and improved connections between the Health Sciences Campus, residential neighborhoods, and local parks
- New outdoor exercise circuit located in Hazard

A component of USC’s strategy is development of a biotech park adjacent and to the north of the HSC. This strategy has depended on cooperation with LA County, which own much of the property, currently used for vehicle maintenance and storage. In fact, LA County owns many parcels surrounding the HSC (including parking lots, Juvenile Hall, old LA County Hospital, County Morgue, research buildings and the abandoned Women and Children Hospital), which might provide the foundation for an LA centered biotech industry. The county has commissioned and endorsed multiple studies aimed at building a biotech industry, citing the HSC for its high potential to link existing clinical, research and educational resources with new development targeting start-up and established biotech industry, which could be established in the immediate vicinity.

The HSC is the only location in LA County with potential to leverage an existing academic health center with surrounding undeveloped land.

c. Succession Planning

i. Search Processes

Key academic positions, particularly deanships, provost, and presidency, are filled through nationally advertised search processes utilizing search firms. Examples include the recently filled Dean of Pharmacy (recruited from McGill), Dean of the Dornsife College (recruited from Columbia), Dean of Medicine (recruited internally), and the Director of the Norris Comprehensive Cancer Center (recruited from Michigan). Search processes are guided by faculty committees, who review, interview and screen pools of applicants, who are sought from both inside and outside the university. Finalists are interviewed by large groups of stakeholders, who are given the opportunity to comment on the strengths and weaknesses of candidates. Dean positions are appointed by the President, but report to the Provost. In the case of a sudden departure (such as the prior Dean of Medicine, and the prior Dean of the Dornsife College), an interim appointment will be made from internal candidates, and a formal search will follow.

Despite the formality of searches for key academic positions, USC has the ability to expedite searches for administrative leaders, and to promote from within.


**d. Branding and Promotion**

**i. University Brands**

**Trojan Family:** The Trojan Family comprises current and former students, faculty and staff. “Once a Trojan, always a Trojan,” and being a Trojan conveys an element of unwavering loyalty to the university family. While also an element of the USC brand that promotes the university, its ideals and values, being a Trojan also entails a sense of belonging Members of the Trojan Family identify themselves as an integral and active part of the group as a whole, providing support to each other in times of need, celebrating the success of individual members as if it were the success of all and, more importantly, striving to exemplify the central mission of the university, which is to promote the development of human beings and society as a whole through the cultivation and enrichment of the human mind and spirit.

**Identity Program:** USC’s graphic identity is a system of coordinated design elements – graphics, colors, and typography – that serve as the university’s visual signature and that provide a strong, consistent look for the university across a range of media and materials. This current program includes an USC logo and monogram, as well as typefaces that reflect many elements of USC’s previous graphic identity, including the use of the university shield, taken directly from our historic seal.

**ii. Keck Medicine of USC**

Keck Medicine of USC is the umbrella brand for USC’s medical center, clinics and outpatient satellites. Keck Medicine of USC is committed to putting all of its resources to work to ensure each patient receives the most appropriate care—through continuous advancements in the areas of research, teaching and clinical treatment. A top-tier academic medical partner to patients and referring physicians, Keck Medicine of USC goes beyond in every way possible to provide personalized care that is truly exceptional. The Keck Medicine of USC brand is inspired by its core values: empowerment, integrity, respect, collegiality and vitality.

**iii. Degree and Educational Programs**

Katherine Harrington, as Vice President of Admissions and Planning, has overall responsibility for student recruitment and promotion of university degree programs to prospective students. This entails extensive outreach efforts to students worldwide through outreach events, particularly focused on prospective undergraduates. Admissions office representatives work with local schools in recruitment efforts, providing information on the over 680 undergraduate, graduate and professional majors offered at the university. A central theme of our recruitment effort is the “Trojan Family,” representing the complete student experience of academics, extracurricular activities and post-graduation. In addition, schools promote their programs through blogs, E-newsletters and other social media.

The importance of diversity and inclusion is also emphasized in student recruitment, as exemplified by the Keck School:

“**At the Keck School of Medicine, diversity means recognizing the richness of our differences and celebrating them together. We prepare students for the diverse populations they will encounter during their clinical rotations and in their future careers.”**

Local schools benefit from educational programs that also serve to create a pipeline of well-qualified student applicants, such as the Opportunity Education’s Next Generation Learning Program
(http://www.questlearning.org/), an interactive e-learning module to help new high school and undergraduate students in the Bridge UnderGraduate Science (BUGS) research program both engage with and acclimate to academic research at the university level and the Neighborhood Academic Initiative, which prepares promising local students for entrance into highly competitive colleges. Additionally, Student Ambassadors programs assist in recruitment — currently enrolled undergraduates and graduates meet with perspective students to discuss their experiences at USC.

USC is home to 19,000 undergraduate and 25,000 graduate students. International students comprise a significant percentage of the student population, with over 10,500 registered in the spring of 2016, and USC has developed an exceptional international reputation through our alumni. USC’s Office of Strategic and Global Initiatives, led by Anthony Bailey, oversees eight international offices, and every other year presents a large internationally themed conference in an Asian country (2017 in Tokyo and 2015 in Shanghai) to showcase the university.

iv. Research

Promotion and branding of USC research is accomplished through various venues, such as social media, and the USC and Office of Research websites, which highlight USC faculty and major research accomplishments. Promotion of research excellence is also done through the academic schools, centers and institutes, in the form of flyers, booklets and other promotional materials (see uploaded documents for examples of Promotional Materials). Brenda Maceo, VP of Public Relations and Marketing, is responsible for university communications, including stories posted on the university website, the Trojan Family Magazine, press relations and the HSC Weekly newsletter, through which stories are conveyed. USC does not have a separate research communications office.

v. Advancement/Fund Raising

“Fas Regna Trojae” (The Destined Reign of Troy) represents The Campaign for the University of Southern California, a multi-year effort to secure $6 billion or more in private support from individual donors, foundations, and corporations. USC has raised $5.7 billion of this total to date. The campaign has aimed toward obtaining large strategic gifts to form endowments for schools, departments and institutes. Major health related gifts from the campaign include these named activities:

- Michelson Center for Convergent Bioscience
- Keck Medicine of USC
- Ostrow School of Dentistry
- Ming Hsieh Institute for Research on Engineering-Medicine for Cancer
- Ellison Institute for Transformative Medicine
- Mark and Mary Stevens Neuroimaging and Informatics Institute
- Dworak-Peck School of Social Work
- Schaeffer Center for Health Policy and Economics
- USC Gayle and Edward Roski Eye Institute

USC-related fundraising is conducted under the direction and control of the president, provost, and senior vice president for university advancement and under the immediate supervision of academic deans, the advancement office, vice president of university relations, director of athletics, or other university officers as authorized in writing by the provost or senior vice president for university advancement. The USC Fundraising Coordination Policy outlines the observance of fiduciary
responsibilities of fundraising activities. In brief, all funds, including unsolicited gifts that are received from USC-related fundraising shall be immediately deposited in university accounts under the control of the university. No employee shall accept gifts of more than nominal value from a current or former patient or student (or the patient or student’s family member or foundation), or accept benefits from such gifts, unless the appropriate dean or vice president grants approval in writing, or unless the gift is immediately deposited into university accounts under university control.

Albert Checcio was appointed senior vice president for university advancement in 2010. He is responsible for overseeing the university’s overall advancement efforts on both the University Park and Health Sciences campuses and for building partnerships with all of USC’s philanthropic and volunteer communities, including prominent individual supporters, charitable foundations, corporate donors, alumni and friends. He reports directly to the president and works closely with the provost and the deans in developing advancement plans and infrastructure to fulfill the university’s potential and support its continued academic ascent. He also staffs the Development Committee and the Alumni Affairs Committee of the USC Board of Trustees.
4. FINANCIAL STATUS

a. University Annual Financial Statement

As of June 30, 2015, USC’s consolidated financial balance sheet showed total assets of $10.4B, of which $5.5B was in investments and $3.1B was in property. With liabilities of $2.6B at the time, net assets totaled $7.7B.

USC’s strong financial health was reflected in the sale of $750M in bonds in August of this year (replacing existing bonds) at the rate of 3.028%. Moody's provided this assessment of USC:

“Moody's Investors Service has assigned a Aa1 rating to the University of Southern California's (USC's) proposed up to $750 million Taxable Bonds, Series 2016, maturing in fiscal year (FY) 2040. As the Series 2016 are intended to refund outstanding bonds, the final sale amount may change subject to market conditions. We have also affirmed the Aa1 on $1.2 billion of outstanding rated debt. The rating outlook is stable.

The Aa1 rating reflects USC's excellent strategic position with its leading student market and research enterprise, strong fundraising history and favorable operating cash flow. Offsetting challenges are moderately high leverage in the face of thinning cash flow, pressured by the growing healthcare operations and a debt structure comprised of large bullet maturities.”

For FY2015 year, USC received $4.24B in total revenue, of which $1.7B is attributed to student tuition and fees and $1.3B is attributed to health services. Total expenses were $3.98B, thus posting a net surplus for the year.

i. Key Expense Drivers

As with other universities, labor costs are key drivers. 59% of our expenses are devoted to compensation and benefits. Information technology, health care benefits, and financial aid for students have all been rising at fast rates. For IT, USC completed a large number of major projects, including replacement of its financial (Kuali Financial System) and human resource (Workday) systems; installation of new systems for medical records (Cerner) and research (TARA); and needs continuing investments for maintenance of the network infrastructure.

ii. Endowment/Fund Raising

USC’s fund raising campaign has attracted $5.7B in donations to date toward a goal of $6B over seven years. USC’s endowment sits at $4.7B. At the end of 2014, USC’s endowment was ranked #21 among American universities. Because of our large student body, we are ranked significantly lower on a per student basis, and our total endowment payout accounts for approximately 6% of our annual budget. Increasing university endowment has been a major priority for the university under the campaign.

b. Financial Reporting

The Office of the University Comptroller produces yearly Financial Reports highlighting key university and academic achievements and providing financial statements including, the Consolidated Budget Sheet and
Financial Statement, Consolidated Statement of Activities and Cash Flows, as well as Summaries of Institutional and School Budgeted Operating Revenues and Expenses. The report also lists those currently holding university leadership positions.
5. COLLABORATIVE LEADERSHIP

a. Interfaces Between Education, Research, and Practice

Committees are used extensively to instill collaborative leadership in the university. Examples are provided herein.

- **University Research Committee**: The University Research Committee is a joint committee of the provost office and the academic senate, facilitated by the VP of Research, and reviews and creates research related policies and strategies for the university.

- **Deans of Faculty Affairs**: Deans of Faculty affairs serve as points of contact within each school to assist faculty at all levels in providing support for development and mentoring as well as guidance for appointment, tenure and promotion. They also advise department chairs and administrative offices on procedures regarding recruitment of new faculty, compensation and leaves of absence.

- **Clinical Chairs** of the Keck School of Medicine, together with the Basic Science Chairs, report directly to dean, Rohit Varma, MD, MPH., and advise on matters advancing the school and direct day-to-day operations within their specialty areas, as well as provide guidance on research initiatives.

- **Interprofessional Education**: The IPE Committee supports the creation of an environment across the health professions that connects disciplines, promotes teamwork, fosters mutual understanding, strengthens research, and advances IPE opportunities for health sciences students.

- **Innovation and Entrepreneurship Leadership Group**: Organized by the VP of Research, this group include student, faculty and staff leaders of programs for innovation education, mentoring, competitions and technology transfer, meeting bi-monthly.

- **Corporate Research Leadership Group**: Organized by the VP of Research, this group includes about 30 representatives of advancement, technology transfer and center representatives focused on business development through corporations, meeting bi-monthly.

- **Provost Research Council**: Organized by the VP of Research, this committee includes the deans of the most research-active schools, along with the provost, and discusses linkages between faculty affairs, advancement and research.

- **Provost Council**: Organized by the Provost, members include all deans, who meet monthly. They also participate in an annual off-campus retreat for annual planning.

- **Research Safety Oversight Committee (RSOC)**: meets 4-6 times/year and maintains broad oversight and coordination of institutional safety committees. It is comprised of the heads of the Institutional Biosafety, Radiation, USC Hospital, Radioactive Drug Research, Chemical Safety Committee, and Institutional Animal Care and Use Committees, as well as the Institutional Review Board. The Director of the Office of Research Compliance and the Executive Director of EHS serve as voting *ex officio* members.
• **The Council of Academic Advisors (CAA)** serves as a forum for Faculty and Staff advisors to share information, questions, concerns and celebrations on issues that affect students and advisors at USC. The committee is composed of representatives from the various academic schools and departments of the University.

### b. Institutes and Centers and Collaboration Groups

Institutes and centers provide focused activities and research topics that tend to span disciplines. These vary in size, from small groups, to our very largest centers: the Information Sciences Institutes, Institute for Creative Technologies and the Norris Comprehensive Cancer Center, each with funding in the tens of millions of dollars each year. The largest centers and institutes are featured on USC’s research webpage.

#### i. Institutes and Centers

- **Alzheimer’s Therapeutic Research Institute**: USC’s ATRI is located in San Diego. The institute’s research focus — the development of effective treatments for Alzheimer’s disease through innovative, collaborative, multicenter clinical trials — adds a strong clinical component to complement USC’s existing strengths in neurodegenerative disease research. Director, Paul Aisen, MD, has been leading figure in Alzheimer’s disease research for more than two decades and is Director of the Alzheimer’s disease Cooperative Study, a consortium funded by the National Institute on Aging to develop assessment instruments and conduct clinical trials.

- **Edythe and Eli Broad Center for Stem Cell Research and Regenerative Medicine**: Led by Andrew P. McMahon, PhD, FRS, a pioneer in developmental and stem cell biology, the center is home to five core facilities (imaging, therapeutic screening, flow cytometry, stem cell isolation and culture, and stem cell engineering). Research aims to elucidate cellular mechanisms that establish and renew organ systems. Research programs include: brain, nerves and senses, muscles and skeleton, heart, lung and blood, digestion and metabolism, kidney and urinary system and cancer. Educational programs are offered in medical education, as well as undergraduate courses and graduate degrees in stem cell and regenerative medicine.

- **The Center for Craniofacial Molecular Biology** supports broad research areas including molecular genetics of tooth development, molecular etiology of cleft lip and palate and rescue, enamel matrix formation and biomineralization, craniofacial development, stem cell-mediated craniofacial tissue regeneration, nanotechnology strategies for growth of bones and teeth, wound healing, head and neck cancer, among others. The center’s director Yang Chai, DDS, PhD, is also the Associate Dean of Research for the Ostrow School of Dentistry.

- **Hamovitch Center for Science in the Human Services**: The Hamovitch Center is home to the USC Edward R. Roybal Institute on Aging, supporting translational research on aging minority populations, and the Center for Innovation and Research on Veterans and Military Families. It also houses the California Social Welfare Archives, which has the most extensive and complete collection of social welfare history in Southern California. Research clusters include aging, behavior, health and society, and child development, among others. The center also provides children’s services as well as services in the areas of serious mental illness and quality of life.
- **Institute for Creative Technologies:** Established in 1999, ICT is a DoD-sponsored University Affiliated Research Center (UARC) working in collaboration with the U.S. Army Research Laboratory. Led by Executive Director Randall Hill, Jr., the ICT’s research projects explore how people engage with computers, through virtual characters, video games and simulated scenarios. Research explores the development of virtual humans with prototypes that improve skills in decision-making, cultural awareness, leadership and coping. Its Medical Virtual Reality (VR) program develops the use of VR simulation technology for clinical purposes, in diverse fields including mental and behavioral health, game based rehabilitation, neurocognitive assessment and training and virtual humans, advancing research in computer-generated characters that use language, have appropriate gestures, show emotion and react to verbal and non-verbal stimuli.

- **The Information Sciences Institute** was created in the early 70s, with funding from the US Defense Advanced Research Projects Agency (DARPA), and is today one of the world’s leading centers for advanced information science and technology research. ISI works with more than 20 federal agencies and departments on a broad range of research topics such as imaging and medical informatics, robotics, supercomputing approaches, and systems-on-a-chip, among others. The recently created USC PhD in Population, Health and Place results from a collaboration between the ISI’s Institute for Spatial Science, the Keck School of Medicine and the Dornsife College of Letters, Arts and Science. This interdisciplinary program will provide training for careers in research, teaching and applied work in sociology (population), preventive medicine (health), and the spatial sciences (place) for scholars interested in the fields of urban and global health, social and cultural geography, and the intersection of epidemiology and demography.

- **Norris Comprehensive Cancer Center:** The USC NCCC is home to over 200 basic and population scientists, and physicians—it has held its NCI comprehensive cancer center designation since 1973, when it was named as one of the first eight comprehensive cancer centers in the country. The center’s leadership is made up of five associate directors who report to the director, Stephen B. Gruber, MD, PhD, MPH, Professor of Medicine and the H. Leslie Hoffman and Elaine S. Hoffman Chair in Cancer Research. The Center fosters collaborative research in the areas of basic, clinical, epidemiological, cancer control, and translational research in conjunction with its affiliated hospitals, the Norris Cancer Hospital, Children’s Hospital Los Angeles, Keck Hospital of USC and LAC+USC Medical Center. Center members currently hold research grants totaling $86 million in direct costs, of which $29 million is from the NCI. The NCCC’s seven areas of organized research include molecular genetics, epigenetics and regulation, tumor microenvironment, cancer epidemiology, cancer control research, gastrointestinal cancers and translational and clinical sciences.

- **USC Institute for Translational Genomics:** Created by the Keck School of Medicine, and located within the Norris Cancer Center, the institute is led by John Carpsten, PhD, Chair and Visiting Professor of Translational Genomics. Research interests of the institute include genital and urinary cancers, women’s cancers and other tumor types such as multiple myeloma, as well as neurological diseases, pediatric cancer and rare genetic syndromes, with the aim to expedite translational research components directly into the clinical practice.

- **USC Mark and Mary Stevens Neuroimaging and Informatics Institute:** The institute supports brain research utilizing imaging and information technologies. It is home to the Laboratory of Neuro Imaging (LONI), dedicated to the comprehensive mapping of brain structure and function, and the Imaging Genetics Center (IGC), supporting neuroscientists, engineers,
medical doctors, and computer scientists, involved in studying brain imaging, genetics, and the connections between them. It also houses the Center for Image Acquisition (CIA), which provides faculty access to a Siemens Magnetron Prisma MRI, a 3 Tesla MRI scanner, and a Siemens Magnetron 7T MRI scanner.

- **USC Research Center for Liver Diseases:** The RCLD was founded in 1995 and has been continuously funded by a grant from Digestive Diseases Research Core Centers (DDRCC) program of NIH/NIDDK. Neil Kaplowitz, MD, has been the Director since the center’s inception. The RCLD supports basic and clinical investigations through the provision of core facilities, a Pilot/Feasibility grants to young investigators and an Enrichment Program, providing regular seminars and annual symposia. Core facilities include a Cell Separation and Culture Core, a Cell & Tissue Imaging Core, a Liver Histology Core and an Analytic, Metabolic, and Instrumentation Core.

- **Institute for Global Health:** The institute supports multidisciplinary research that brings together science, health and human rights with business, art, engineering, law, and policy with the aim to improve global health. In addition to the institute’s graduate and undergraduate programs, it provides online and onsite training programs in research methods for low- and middle-income countries and the consolidation and synthesis of evidence-based best practices to inform research, policy and programs. The institute is home to Program on Global Health & Human Rights and the Center for Health Equity in the Americas. The institute director is Jonathan Samet, MD, MS, Distinguished Professor and Flora L. Thornton Chair in Preventive Medicine.

- **USC Gayle and Edward Roski Eye Institute:** The Institute traces its roots to the founding of USC’s ophthalmology department in 1974 and provides comprehensive and subspecialty ophthalmology care. Vision research at the institute includes the world’s most widely used glaucoma implant and the development of optical coherence tomography, a non-invasive imaging technique used to diagnose glaucoma, macular degeneration and other conditions. Institute director and president of USC Care Medical Group Rohit Varma, MD, MPH, is an expert in glaucoma. Dr. Varma’s research, sponsored by the National Eye Institute, helped to inform a report recently released by the National Academies of Sciences, Engineering and Medicine (NASEM), Making Eye Health a Population Health Imperative: Vision for Tomorrow. Institute co-director Mark Humayun, MD, is an ophthalmologist, engineer, scientist and inventor – the only ophthalmologist to be elected a member of both U.S. National Academies of Medicine and Engineering; Dr. Humayun led a team of researchers that developed the first successful retinal prosthesis in a human patient.

- **Zilkha Neurogenetic Institute:** Led by director Berislav Zlokovic, MD, PhD, the institute has a broad research focus that includes pathogenesis and treatment of neurological and psychiatric disorders. Research areas include: Basic neuroscience (predictive cellular and animal model systems, systems pharmacology, structure-based drug discovery, as well as research in single cell and biogerontology); Translational research (implantable devices to treat visual and neurological disorders, translational neuro restoration and virtual and immersive therapies); Informatics (big data neuro-informatics and big data processing); Computer science (multi-scale computational modeling of brain function and biomedical systems modeling) and Cognitive research (neuro architecture). The institute is also home to various imaging centers, such as the Translational Imaging Center, the Ultrasonic Transducer Resource Center, the Neuroplasticity and Imaging Laboratory, and the Cognitive Neuroimaging Center.
• **Leonard D. Schaeffer Center for Health Policy and Economics:** Established in 2009, the Schaeffer Center is the result of a collaboration between the USC Sol Price School of Public Policy and School of Pharmacy. The Center brings together health policy experts with pharmaco-economists to improve value in health through evidence-based policy solutions, research, education, and private and public sector engagement. Dana Goldman, PhD, is the director of the center. The Schaeffer Center was recently awarded a $2.7M NIH award to establish a Resource Center for Minority Aging Research (RCMAR), that provides infrastructure and resources to increase the number, diversity, and academic success of researchers focusing on the health and economic well-being of minority elderly populations. Housed at the Schaeffer Center, the RCMAR brings together the resources of USC’s Roybal Center for Health Policy Simulation, Roybal Institute on Aging, Alzheimer’s Disease Research Center, and RAND’s Roybal Center for Financial Decision Making.

• **Ming Hsieh Institute for Research on Engineering-Medicine for Cancer:** Established in 2010, the MHI supports interdisciplinary teams of scientists, engineers and clinicians working in research projects of all stages (early, pre-clinical, clinical and commercialization) that integrate engineering technology with life sciences. MHI investigators have been awarded 92 patents (356 patents pending). As well, the institute’s pilot grant program has made over $2M in grant funding to USC faculty ($860,000 in fiscal year 2016), supporting over 30 innovative, high-risk, high-reward research projects, such as the use of bispecific hybrid nanoworms for immunotherapy of B-cell lymphoma, nanoparticle-mediated delivery for breast cancer therapy and the use of metal oxide nanoribbon biosensor chips for point-of-care diagnosis, among many others.

• **The Bridge Institute at USC:** Part of the USC Michelson Center for Convergent Biosciences and led by Ray Stevens, PhD, Provost Professor of Biological Sciences and Chemistry, the Bridge is focused on developing bioimaging and data processing technology to create the first affordable and widely available rapid molecular resolution whole body scanner for predictive global health. This initiative — to build the first atomic resolution structure of man — aims to revolutionize healthcare by detecting disease before symptoms appear.

**Institutes in Development**

• **Michelson Center for Convergent Biosciences:** Part of the USC’s Convergent Biosciences Initiative, the Michelson Center for Convergent Biosciences is expected to be completed in 2017. The center will be the cornerstone of a new collaboration between the Dornsife College and the Viterbi School of Engineering and aims to support research at the intersection of engineering and the life and biomedical sciences; it will facilitate the convergence of knowledge across disciplines, such as chemistry, biology, medicine, mathematics, physics, engineering, and nanoscience, as well as animation and cinematography. An example of research efforts includes work by Peter Kuhn, PhD, and the creation a new database to advance cancer research, as part of Vice President Joe Biden’s Cancer Moonshot Project. The Center will be home to an Imaging Center, a Nanofabrication Cleanroom and a low-vibration laboratory. Steve Kay, PhD, Professor at KSOM will lead the Michelson Center.

• **The Lawrence J. Ellison Institute for Transformative Medicine of USC** will combine interdisciplinary research with the holistic prevention and treatment of cancer and will support research laboratories in the fields of proteomics, molecular biology, genetics and
nanotechnology. The institute’s collaborative environment will include patient care clinics, a think tank, education and outreach, and a wellness program. David B. Agus, MD, Professor at the Keck School of Medicine and the Viterbi School of Engineering, will lead the institute, which will be located in a new building to be constructed in Santa Monica.

**ii. Collaboration Fund**

The Research Collaboration Fund in the Office of Research supports research collaboration among faculty and students working on interdisciplinary research topics, such as water, neuroscience, genomics, digital humanities, or climate change. The aim is not to fund specific research projects, but rather to support teams of faculty who aim to establish or foster a community of scholars at USC organized around a broad topic of shared interest. The awards fund the activities that help to develop this collaborative group. Current Collaboration Fund health-related projects include:

- **AirPollBrain (APB) Group**  
  *Collaborating Schools: Gerontology, the Viterbi School of Engineering, the Dornsife College and the Keck School of Medicine.* This group brings together faculty, postdocs and students to understand the scientific basis for the impacts of pollution on the brain, and to explore the health consequences.

- **Neuroplasticity and Repair in Degenerative Disorders**  
  *Collaborating Schools: Keck School of Medicine, Davis School of Gerontology, BioGerontology/Striatal Synaptic Research, Ostrow School of Dentistry.* This collaboration seeks to foster collaborative research among investigators interested in neuroplasticity with the goal to better understand the underlying molecular mechanisms of neurodegenerative disorders.

- **USC Law and Global Health Working Group**  
  *Collaborating Schools: Keck School of Medicine, Gould School of Law.* The Law and Global Health Working Group brings together researchers of many disciplines to explore existing and create new tools and methods to examine difficult issues that arise at the intersection of global health and law.

- **Center for Technology and Innovation in Pediatrics**  
  *Collaborating Schools: CHLA, Center for Innovation, Keck School of Medicine & Viterbi School of Engineering.* This collaboration aims to unite programs, institutes, faculty, and students at USC and CHLA, along with industry and venture capital partners, in a topic-focused, interdisciplinary, systems-oriented manner, to foster the creation of novel medical devices designed specifically for children, as well as adapt and validate existing adult devices for children.

- **USC Transdisciplinary Collaboratory for Mobile (mHealth) and Connected Health**  
  *Collaborating Schools: Dornsife College, Keck School of Medicine, Institute for Creative Technologies.* The mHealth Collaboratory seeks to leverage USC’s strengths in interactive technologies, engineering, behavioral health and medicine to support the development and testing of cutting edge user-centered technologies for treatment, prevention and health promotion across a broad swath of health domains.
• **Institute for Integrative Health Collaborative Research Group**  
  Collaborating Schools: Keck School of Medicine, LAC+USC, Ostrow School of Dentistry, Suzanne Dworak-Peck School of Social Work. This group seeks to develop trans-disciplinary research collaborations among USC faculty and students in the field of integrative, complementary and alternative (CAM) medicine, with the goal to propel USC into a national research leadership role in the rapidly growing field of integrative health.

• **Immigrant Health Initiative**  
  Collaborating Schools: Keck School of Medicine, Suzanne Dworak-Peck School of Social Work; CHLA. This Immigrant Health Initiative (iHi) aims to develop new insights related to health promotion and disease prevention strategies targeting immigrant and refugee communities living in the United States and elsewhere.

c. **Faculty Profiles and Faculty Appointments**

  i. **Faculty Appointments**

  The Provost, as the academic leader, is responsible for academic appointments, including all associated policies. Though deans have been delegated authority to fill appointments and create new faculty positions (for which they are responsible for funding), only the Provost can convey tenure. With this flexibility, USC as a whole, and schools, do not have a restricted or set number of faculty appointments, and we do not have the notion of filling or designating specific slots or faculty lines. Whereas tenured, or tenure-track, positions are expected to demonstrate creative and innovative work, judged as exceptional by peers, other types of positions may be created to serve particular needs, such as instruction or clinical care. Funding for positions come from school resources or, sometimes, grants or contracts that support salaries. Most schools on the University Park Campus rely on 9-month appointments, meaning summer salaries are not guaranteed, whereas health science schools rely on 12-month appointments. Research faculty appointments are normally “soft funded” and on 12-month appointments.

  The tenure process is similar to other major research universities, and begins with the submission of a dossier to the department chair, which is sent for arms-length review by faculty at other highly-ranked universities. More details on the full process are provided later.

  Various university committees are associated with faculty review processes, as follows:

  The **University Committee on Appointments, Promotions and Tenure (UCAPT)** is the university-level faculty committee that works to ensure consistency, fairness, transparency in all tenure, promotion and senior appointment decisions. UCAPT serves as an advisory panel to the Provost, who retains the final authority on behalf of the President. UCAPT is appointed by the President on the basis of self-nomination and nominations by the Academic Senate Leadership. Different panels of the UCAPT review dossiers for tenure track, tenured or clinical scholar candidates for appointment or promotion (at the Associate Professor and Professor ranks), after they have been reviewed at the school level.

  At the Keck School of Medicine, the **Faculty Appointments, Promotion and Tenure Committee (FAPTC)** reviews all appointments and promotions at the rank of Associate Professor or above for tenured and tenure-track faculty, clinical faculty (including Clinical Scholar and Educational Scholar), and research-track faculty. The committee is divided into two panels, with each department having a representative on
one of the panels. Most of the committee members are full tenured professors, approximately 2/3 of the members of each panel are tenured, and the basic science and clinical department representatives are divided so that each panel has a similar proportional makeup. In addition, there are at-large members who represent the faculty as a whole, including a representative of the Keck Faculty Council on the committee, and the Chair of the FAPTC (who may cast a deciding vote when there is a tie). The Chair of the CAPC (see below) may also attend meetings in an ad hoc capacity, if not already a sitting member of the FAPTC. Other ad hoc members of the committee are the Vice Dean for Faculty Affairs, the Associate Dean for Appointments and Promotions, and the Assistant Dean for Faculty Development. Staff members from the Keck Office for Faculty Affairs and the Office of Academic Affairs at CHLA also attend.

The Clinical Appointments and Promotions Committee (CAPC) is a smaller committee that is composed of 9-10 representatives of clinical departments with staggered three-year appointments to the committee (the membership rotates among departments). This committee considers appointments and promotions at the rank of Clinical Associate Professor or Clinical Professor on the Clinician-Educator and Practitioner series. Ad hoc members of the committee are the Chair of the FAPTC, the Vice Dean for Faculty Affairs, the Associate Dean for Appointments and Promotions, and the Assistant Dean for Faculty Development. Staff members from the Keck Office for Faculty Affairs and the Office of Academic Affairs at CHLA also attend.

Ad Hoc Committees: For appointment of Chairs and Institute Directors and occasionally other eminent faculty recruits, an ad hoc committee of eminent faculty members from a number of departments is convened to evaluate the appointment and provide their advice to the Dean. Members of this committee may also be members of one of the promotion committees.

ii. Range of Appointment Types

Individual schools may, with the Provost’s permission, use titles from the list below; special approval from the Provost, based on unusual circumstances, must be obtained to use a title outside the specifications of this list. When a faculty member has an administrative assignment the dean or Provost may add an administrative title in addition to the faculty title.

- Academic titles currently in use include: Tenured and Tenure-Track, Assistant Professor of <Discipline>, Associate Professor of <Discipline>, Professor of <Discipline>.
- Librarians: Librarian, Assistant University Librarian, Associate University Librarian, University, Librarian are faculty titles corresponding to the ranks of Instructor, Assistant Professor, Associate Professor, and Professors, respectively.
- Clinical scholar and similar titles: For individuals who have gained high scholarly or artistic distinction in their fields, primarily engaged in clinical, creative, or professional practice, teaching or research, but whose effort profile or type of research or creativity differs from that of tenured faculty; may be listed publicly as Professor of <discipline>; Professor of <discipline> (Clinical Educator); Artist in Residence; in the law school, Professor of Law.
- Full-time non-tenure-track teaching, research and clinician faculty: Lecturers (Lecturer, Senior Lecturer, Master Lecturer; Clinical Professor of <discipline>; Professor (Teaching) of <discipline>; Professor of Clinical <discipline>); Researchers (Lecturer; Professor of the Practice of <discipline>; Professor of <discipline> Practice; in the medical school, Clinical Professor of <discipline>; Clinicians (Professor of Clinical <discipline>; in the law school, Clinical Professor of Law); Mathematics (As an exception, the title Assistant Professor of
Mathematics may be used for a non-tenure-track appointment in mathematics awarded to faculty who have recently obtained their degrees and who are involved in research and teaching with reduced obligation for university service).

- **Visiting:** For individuals on temporary appointment who are: (a) on leave from another university or college; (b) on leave from industry, government, an artistic career, or the professions; or (c) citizens of another country limited by their visas to temporary service, and who also satisfy either clause (a) or clause (b).

- **Part-time:** For individuals with part-time appointments, non-tenure-track: (a) Lecturer (part time); (b) for those whose USC work is adjunct to a primary position or career elsewhere, Adjunct Lecturer, Adjunct Professor of <discipline>; in the medical school, Adjunct Professor of Clinical <discipline>.

- **Voluntary Faculty:** For individuals who volunteer their services: Adjunct Professor of <discipline>; in the medical school, Adjunct Clinical Professor of <discipline>.

- **Affiliated Academic Staff:** Artist in Residence, Executive in Residence, Scholar in Residence, Writer in Residence, or similar titles; Postdoctoral Scholar, Postdoctoral Fellow, Postdoctoral Research Associate, Postdoctoral Teaching Fellow; Visiting Scholar, Visiting Critic, or similar titles. Senior Fellow.

- **Emeriti:** awarded to tenured or full-time non-tenure-track faculty on or after retirement, or may be preapproved in contemplation of retirement to be effective upon retirement.

### iii. Faculty Handbook

The Faculty Handbook is the university’s governing document for policies relating to faculty, including information on the government of the university, academic practices and policies pertaining to faculty, faculty appointment, promotion, and tenure, and policies pertaining to research.

### iv. Promotion & Tenure

Tenure and promotion are separate processes, which are briefly highlighted below.

**Tenure:**

Tenured or tenure-track appointments and promotions are defined in both the Faculty Handbook and the UCAPT Manual. While essentially identical at all schools, the specific assessment reflects the standards and expectations of each field or discipline.

Tenure is considered on an individual basis. An individual holding a tenure-track faculty appointment must, by the end of the probationary period, either be granted tenure or be given a terminal appointment; such an individual cannot be retained or rehired on a non-tenured, full-time basis past the maximum probationary period except under extraordinary circumstances and with the approval of the Provost, including use of a non-tenure-track faculty title. Each school policy shall maintain a limit for the maximum number of non-tenure-track teaching faculty appointments, as a percentage of tenured and tenure-track faculty appointments, so as to preserve the tenure system as the principal form of faculty appointment.

Additional conditions of the tenure system include:

- Full-time tenure-track and tenured faculty appointments are for service during the academic or fiscal year and are made on the bases described below.
o **Instructor and Assistant Professor:** Appointed on an annual basis with the possibility of renewal.

o **Associate Professor:** Generally, comes with tenure, but if appointed without tenure, a decision on tenure shall be made in accord with the schedule described in established policy.

o **Professor:** Generally, comes with tenure, but if appointed without tenure, a decision on tenure shall be made in accord with the schedule described in established policy.

- **A joint appointment** between two schools or divisions of the University may be tendered if the faculty member will teach or conduct research in both schools. A tenured appointment may be made, however, in only one school. Promotion to a higher rank for faculty holding joint appointments should be initiated by the school of primary appointment. The responsibilities and authorities of a joint appointed are well documented and approved centrally through a standardized form.

- **Annual review:** Faculty are annually by his or her academic unit, which provide input into the annual faculty raise. The university has no set salary scale, and raises are all merit based.

**Promotion:**

In preparing all recommendations to the Provost, and in making delegated decisions on appointments and promotions, the dean receives the advice of faculty committees on appointments, promotions, and tenure. These committees are selected in accordance with school guidelines. In larger schools there are departmental as well as school faculty committees on appointments, promotions, and tenure. Some schools may utilize committees of the whole departmental or school tenured faculty, or divisional or institute faculty committees on appointments, promotions, and tenure. For non-tenure-track cases, committees include tenured, tenure-track, and non-tenure-track faculty. Additionally, a new mandate was given to each school, in 2015, to develop guidelines for the periodic careful review of both full-time and part-time non-tenure-track faculty, to be conducted at three-to-five year intervals. These reviews will consider whether the promotion process should be initiated, for both full-time and part-time faculty, and will also consider whether reappointment is appropriate.

**v. Vice Provost for Academic and Faculty Affairs**

*Elizabeth Graddy,* PhD, serves as the Vice Provost for Academic and Faculty Affairs, and is responsible for the oversight of the offices of Faculty Affairs, Academic Affairs, Undergraduate Programs, and the Graduate School. She advises the Provost on faculty appointments, promotions, development, tenure, salaries, and policies; she is also responsible for advancing excellence and innovation in the undergraduate curriculum as well as USC’s Ph.D., graduate professional degree, online and postdoctoral programs. Dr. Graddy also serves as the Provost’s representative on the University Committee on Academic Review, working with deans, chairs, and faculty to advance programs appropriately informed by the resulting recommendations.

**vi. Faculty Count**

USC is home to 3,956 full-time faculty in schools and departments, 72 full-time librarians and 1,783 part-time faculty, for a total of 5,811 (2015-2016 data). There are 1,178 tenured, 294 untenured tenure-track faculty, 4,265 non-tenured (2,485 full-time, 1,780 part-time) faculty and 74 categorized as other (probationary, contract & continuing appointment librarians). There were 7,849 student workers (excluding TA’s and RA’s). For this same year, males comprised 58% of tenured-track faculty and 77% of
tenured faculty. Faculty sex composition by field averaged 58% for males in Arts & Humanities, Social Sciences and Medicine while that number increased to 70% in the Life & Natural Sciences.

d. Academic Review

i. Creation of Degree Programs

Under the auspices of the Office of the Provost, Academic Affairs maintains broad oversight over the creation and review of academic programs, consistent with the University Mission. The University Committee on Curriculum (UCOC) plays a crucial role in the decisions regarding the university’s curricular, major, minor, and certificate offerings, and the requirements to successfully complete those offerings. The UCOC is led by Chair Thomas Cummings, USC Marshall School of Business, and advises the Provost on all matters pertaining to the adoption, elimination, and revision of courses and programs, except to those leading to an MD. It reviews and recommends university-wide policies on curriculum, and also works with units to ensure that appropriate processes are in place in each unit to provide for faculty oversight, development, and evaluation of curriculum. The UCOC Curriculum Handbook describes the curriculum review process, the steps and the individuals involved in the curriculum review process and the relevant academic policies concerning curriculum and the catalogue. The Curriculum Coordination Office (CCO) coordinates the review of curriculum proposals. It is the liaison between departments, the UCOC, USC Catalogue, Degree Progress and Registration. Creation of degree programs is a multistep process that occurs at the school and university level and is summarized in the UCOC Curriculum Handbook (see uploaded documents).

The UCOC meets monthly and takes over a thousand actions a year, with most proposals acted on in one of the subcommittees, while complicated proposals are acted on by the executive committee that includes chairs of subcommittees. The committee also reviews and approves forms and checklists developed by the staff of the Curriculum Office. Recommendations made by the committee are based entirely on academic considerations, with revenue concerns resolved by the dean and the Provost. All committee members are faculty. New members are selected in consultation with the Academic Senate Executive Board. Within the University Committee on Curriculum, there are four subject area subcommittees: AHS (Arts and Humanities Subcommittee), HPS (Health Professions Subcommittee), SES (Science and Engineering Subcommittee) and SSS (Social Sciences Subcommittee). Distance learning, hybrid and other technology-enhanced courses will be reviewed by the subcommittee that corresponds to the subject matter of the course. Other committees include the Off-Campus Studies Panel and the General Education Committee.

USC gives schools significant flexibility to create new masters level programs, as we do not constrain enrollment at that level. On the other hand, undergraduate programs are reviewed in light of the totality of program offerings for the university as a whole, and their enrollment is centrally managed. An example of this flexibility is the recent introduction of a Master’s of Science in Nursing (Family Nurse Practitioner), offered by the School of Social Work.

ii. Review of Doctoral Programs

The policy of the Graduate and Professional Studies Committee (now subsumed into the UCOC) is to insure that all graduate and professional degree programs maintain high academic standards and rigorous requirements. All graduate and professional degree programs should have demanding criteria for admissions, coursework, evaluating student performance, and granting degrees. Graduate degrees
may culminate with a summative assessment through which the student demonstrates overall mastery of
the academic discipline at a level which is appropriate to the degree. At the doctoral level the summative
assessment is typically through an oral exam or oral dissertation defense administered by the doctoral
committee. At the master’s degree level, the overall mastery is typically assessed through competency
examinations, a capstone experience, comprehensive oral examinations or through presentation of a
thesis. The difference between academic and professional degrees is not one of quality. It is a matter of
focus. The GPSC also establishes the criteria for new and revised programs, and which are outlined in the
UCOC Handbook.

**iii. Programmatic Review**

Programmatic review takes several forms. For programs requiring external accreditation (e.g.,
Engineering, Medicine, Dentistry, etc.), we rely on the assessment and certification of the appropriate
external body. Doctoral programs are reviewed at least every 10 years by the University Committee on
Academic Review. This process includes a detailed self-assessment, followed by a site visit by external
visitors. Their report and assessment is provided to the UCAR committee, which makes is conveyed to
the Vice Provost for Academic Affairs, appropriate dean or deans, and Provost. UCAR recommendations
are used to strengthen and focus programs through curriculum, faculty, student recruitment and other
academic measures. Professional master’s programs are reviewed at the school level. Undergraduate
programs that do not have their own accreditation process (e.g., those in the arts and sciences) are part
of the university-wide accreditation conducted by the Western Association of Schools and Colleges.

**iv. Enrollment Management**

Under the auspices of the Office of the Provost, the Enrollment Services office maintains admission,
financial aid, academic records and registrar services, while providing a wide range of logistical and
financial support to students and alumni. The Registrar is responsible for the curriculum and catalogue
management systems (Curriculog and Acalog). Once the subject area subcommittee chair approves
curriculum, the Academic Records and Registrar division of Enrollment Services ensures that
course data is appropriately routed to the Student Information System process, and that programs and
minors are assigned their respective Program of Study and Minor Codes. Degree Progress codes all
curriculum additions and updates into STARS (Student Academic Record System).

Admission and enrolment for undergraduates is centrally managed, with capped university-wide
enrollment and consistent admissions standards. On the other hand, schools have significant control over
enrollment into graduate programs, though income and financial aid for PhD programs have significant
central control.
6. INNOVATION THRUSTS

USC is particularly interested in creating an “innovation pipeline” that offers synergies between our health systems, research and technology transfer. We seek to inform our research by the needs of our patients and the advice of our doctors, to create innovation testbeds for experimentation and to leverage the existence of our innovative research toward differentiating the clinical services that we offer. Our impact would be realized in many ways:

- Traditional technology transfer, where laboratory discoveries for pharmaceuticals or devices move into pre-clinical testing and then clinical testing, and eventually toward FDA approved therapies or devices.
- Standards that lead to improved delivery of care here and elsewhere.
- Non-traditional health products (e.g., wearable devices) that may improve health outcomes but not require FDA approval.
- Software that may be disseminated in many forms, including copyrighted commercial products, open-source software, or products that are placed in the public domain.
- Implementation and testing quality improvement or health IT within our own systems that improve health outcomes.

In all of these ways, we seek to leverage areas where we have made major investments in research capabilities.

Aging and Neurodegenerative Disease

An announced initiative of our provost, recent investments include the establishment of the Alzheimer’s Therapeutic Research Institute and the Stevens Neuroimaging and Informatics Institute, which complement our resources in our School of Gerontology, the Alzheimer’s Disease Research Center, Zilkha Neurogenetic Institute, rehabilitation programs in Physical Therapy, NIA Roybal Centers, neuroscience graduate program and other interdisciplinary assets.

Example programs:

- Zilkha Neurogenetic Institute: with a broad focus on pathogenesis and treatment of neurological and psychiatric disorders (Basic Neuroscience Research);
- USC Center for Digital Aging: creating and developing technology of use to older adults (Biogerontology Research);
- USC Longevity Institute: translational research on aging and age-related diseases (Biogerontology Research);
- USC Neurorestoration Center: developing technologies that harness advances in basic neuroscience and neural engineering (Translational Neuro Restoration);
- USC Alzheimer’s Therapeutic Research Institute: focused on multicenter clinical trials (Clinical Trials);
• **Alzheimer’s Disease Research Center:** advanced diagnostic and treatment services for Alzheimer’s Disease (Clinical Analysis);  
• **Phillips-Fisher Center for Brain Repair and Rehabilitation:** investigating Biokinesiology and Physical Therapy approaches to neurorehabilitation (Physical Therapy On Brain Plasticity and Repair);  
• **USC Mark and Mary Stevens Neuroimaging and Informatics Institute:** data acquisition, analysis, stewardship and computational innovation for the purpose of biomedical research (Big Data Neuro-Informatics);  
• **Center for Neural Engineering:** Multi-Scale Computational Modeling of Brain Function (Computer Science)  
• **USC Brain and Creativity Institute:** neural architecture research (Cognitive Research)  
• **Vascular Senescence and Cognition (VaSC) Laboratory:** vascular cognitive impairment in Alzheimer’s disease (Cognitive Research)  
• **USC Schaeffer Center for Health Policy & Economics:** pharmaco-economics and health (Clinic & Community Practice)  
• **USC Geriatric Studies Center:** research and community outreach (Clinic & Community Practice)

**Health Informatics**

USC is known for its informatics research, led by the Information Sciences Institute and the Institute for Creative Technologies. However, “digital health” and “mobile health” have been growing areas of research throughout the university, including a newly established Institute of Translational Genomics in the Keck School, a research informatics program associated with the CTSI, Center for Body Computing in the Keck School, the Mobile Health Collaborative, and health communication research in the Annenberg School and School of Cinematic Arts.

**Population Science:**

Another area of great strength is the study of health of populations of individuals. Our Department of Preventive Medicine is renowned for its work in cancer epidemiology and environmental health (especially the health of children exposed to air pollution); our School of Gerontology is famous for work in health demography; the Schaeffer Center is a leader in studying the effects of health policies on national health; the Center for Social and Economic Research studies has ongoing research studying large panels of participants; our Department of Ophthalmology has major studies on eye disease in multi-ethnic populations.

**Example Programs:**

• **The Center for Genetic Epidemiology:** Research at the **Center for Genetic Epidemiology** identifies the genetic factors that contribute to disease. Led by Christopher A. Haiman, ScD, the center studies diverse populations that have different risks of developing disease, establish population-based resources as well as develop and apply genomic methods for understanding the genetic basis of disease.

• **USC/UCLA Center on Biodemography and Population Health (CBPH):** The CBPH is a multisite center located at the Gerontology School and the UCLA Program in Geriatric Medicine, and led by
IOM member Eileen Crimmins. The center supports pilot projects and on-going bio-demographic research that integrate epidemiological, medical, and biological information with the demographic perspective on population health.

- **Graduate Programs in Epidemiology:** USC offers innovative graduate programs in epidemiology and population sciences, such as the interdisciplinary PhD in Population, Place and Health, a collaborative effort between the Departments of Sociology and Preventive Medicine and the Spatial Sciences Institute, providing training for careers in research, teaching and applied work in sociology (population), preventive medicine (health), and the spatial sciences (place). Graduate programs are also offered in Applied Biostatistics and Epidemiology, and Molecular Epidemiology.

**Convergent Bioscience**

We have recently invested in the area of drug development through the creation of the Michelson Center for Convergent Bioscience, a major new research building and program located on the University Park Campus, and led by Steven Kay. The Michelson Center will include Ray Stevens, PhD, recruited from the Scripps Research Institute, and the founder of four biomedical startup companies. The new building will open in 2017, include interdisciplinary labs along with extensive shared core facilities. We also obtained a $50 million endowment commitment from Ming Hsieh for a therapy/diagnostic program focused on cancer, bridging medicine, science and engineering. In addition, the School of Pharmacy is now led by Vasilios Papadopoulos, an experienced leader of translational research. And we obtained a $200 million commitment from Larry Ellison for an institute focused on transformative medicine. These new resources complement therapeutic development activity in the Norris Center, Zilkha Institute and Broad Center. Convergent bioscience is an area of growth and investment through which to increase our impact in the future.

### a. Research Funding Distribution Across Schools

For fiscal year 2016 (ending June, 2016), contracts and grants expenditures totaled $525 million, excluding activity at CHLA. Total contract and grant awards to USC (exclusive of CHLA) exceeded $800 million for the first time ever, with major growth in the area of industry contracts. For FY2016, total university research expenditures exceeded $700M (as reported to NSF), inclusive of all research as well as university investments from its own funds. Our largest single source of funding is NIH, and our largest school in funded research activity is the Keck School, followed by Viterbi and then Dornsife. The next largest unit is the Institute for Creative Technologies. Other schools with substantial activity include Social Work, Pharmacy, Dentistry and Gerontology.

To illustrate areas of strength, we now describe some of our recent large awards in health-related research topics:

- A $21.7 million award from the National Institutes of Health to study epilepsy. The project “Epilepsy Bioinformatics Study for Antiepileptogenic Therapy” will be headed by Arthur Toga, PhD, Provost Professor of Ophthalmology and Director of the USC Mark and Mary Stevens Neuroimaging and Informatics Institute, to identify biomarkers associated with the development of epilepsy as well as therapies to prevent epilepsy from starting after a traumatic brain injury. **Aging and neurodegenerative + health informatics**
• A $6 million grant to examine health issues related to asthma and obesity. Part of the funding will go toward the USC Children’s Health Study, the nation’s longest study on air pollution and children’s health. The new research program, “Life Course Approach to Developmental Repercussions of Environmental Agents on Metabolic and Respiratory Health,” or LA DREAMERs, will be led by Frank Gilliland, MD, PhD, Professor of Preventive Medicine, and Carrie Breton, ScD, Assistant Professor of Preventive Medicine. The award is part of a seven-year NIH initiative, the Environmental Influences on Child Health Outcomes (ECHO), awarded more than $150 million to over 30 research institutes. USC will analyze data collected from prenatal to young adult participants in two existing studies: the Maternal and Developmental Risks from Environmental and Social Stressors (MADRES) and Children’s Health Study.  *Population Science*

• A $6 million NIH award to coordinate the diverse activities occurring within the Big Data to Knowledge (BD2K) Training Consortium. The Training Coordinating Center will create an inclusive and collaborative virtual environment - titled "Big Data U" - serving trainees from a wide spectrum of educational backgrounds and scientific domains. Big Data U will make personalized educational resources accessible and facilitate novel research collaborations through scientific rotations. The Coordinating Center is led by Jack Van Horn, PhD, Associate Professor of Neurology, Keck School of Medicine.  *Health informatics.*

• A $3.5 million NIH award to create a database for the GenitoUrinary Development Molecular Anatomy Project (GUDMAP). The director of the project is Carl Kesselman, PhD, Professor of Industrial and Systems Engineering in the Viterbi School of Engineering. The GUDMAP Database will facilitate a coordinated, focused, adaptive and interactive program of research by several groups, yielding results faster than a static collection of independent research projects. It will also conduct meta-analysis to produce informative ways to use the tools we build, and propose new testable hypotheses regarding urogenital development and disease.  *Health informatics.*

• A $3 million NIH Fogarty grant award to establish the Eastern Africa Global Environmental and Occupational Health Hub. The program director is Jonathan Samet, MD, Distinguished Professor and Chair of Preventive Medicine in the Keck School of Medicine. This research and training collaboration will link USC with investigators from Ethiopia, Kenya, Rwanda and Uganda to study air pollution and other environmental issues in these countries.  *Population health.*

• A $1.5 million NIH award to create an institutional training program for PhDs interested in the interface between chemistry and biology. The program director is Susan Forsburg, PhD, Gabilan Distinguished Professor in Science and Engineering and Professor of Biological Sciences in the Dornsife College. This program will enable graduate and doctoral students in molecular biology to train in chemistry, while chemists learn methods in molecular biology.  *Convergent bioscience.*

• A $3.3 million grant from the National Institute of Dental and Craniofacial Research, awarded to Yang Chai, Ph.D., associate dean of research at the Herman Ostrow School of Dentistry, and colleagues from KSOM, to investigate stem cell treatment for syndrome that causes children’s skull bones to fuse prematurely.

• A $31.5 million grant to Stephen B. Gruber, M.D., Ph.D., M.P.H, for the renewal of the USC Norris Comprehensive Cancer Center (NCCC). The NCCC proposal received an elite score from the NCI as part of its five-year core grant renewal process, earning an “outstanding” distinction from NCI reviewers. The award will provide support for 1) seven interactive Research Programs (Molecular Genetics, Epigenetics & Regulation, Tumor Microenvironment, Cancer Epidemiology, Cancer Control Research, Gastrointestinal
Cancers and Translational and clinical Service); 2) partial support for eight Shared Resources and one Developing Bioinformatics Core; 3) Planning and Evaluation; 4) Developmental Funds that allows USC Norris to pursue new priorities, strengthen science, and explore new collaborations and technologies; 5) Cancer Center Administration.

- A $36.6 million award, over five years, from the National Institutes of Health for the renewal of the Southern California Clinical and Translational Science Institute at USC. The center is a collaborative effort between the Keck School of Medicine and CHLA, and the institute’s principal investigators on the grant were Thomas A. Buchanan, MD, Vice Dean for Research, KSOM, Jonathan Samet, MD, Thornton Chair in Preventive Medicine; Director, Institute for Global Health of KSOM and Michele Kipke, PhD, Professor of Pediatrics (Clinical Scholar) and Vice-Chair of Research at CHLA.

In addition, USC received its largest research contract ever from Janssen Pharmaceuticals this year for an Alzheimer’s therapy clinical trial, and last year received one of its largest contracts ever from Lilly, also for an Alzheimer’s trial. Both fall within our aging/neurodegenerative disease thrust.

### b. Organization of Innovation

#### i. University-wide Innovation Efforts

The Stevens Center for Innovation is USC’s technology transfer office, responsible for patents, licensing, start-ups, material transfer and corporate research collaborations for all units of the university, excepting CHLA, which has a separate technology transfer office (due to it being a separate corporate entity). The center was created after receipt of a major endowment of Sequoia Capital partner Mark Stevens, who continues as a key advisor. The Stevens Center reports to the VP of Research, and has a mission to translate research into products for public benefit through commercialization. Led by Jennifer Dyer, the leadership team has extensive experience in the life sciences. The center has close to 30 employees, including many with PhD, JD and MBA degrees. All of the licensing staff have scientific or engineering training.

Beyond the technology transfer office, USC offers many central resources as well as school-based resources, including educational programs, mentorship, competitions and internal grants. Example central resources include:

- **IncubateUSC** is a central online destination for entrepreneurs at USC – students, faculty, expert staff and supportive mentors coming together across campus to optimize the entrepreneur ecosystem and strengthen the USC community. Trojans from diverse schools, programs, centers and clubs collaborate to build companies, and IncubateUSC connects them with critical resources and support to get them off the ground. IncubateUSC provides support throughout the course of their entrepreneurial journeys; from hosting pitch competitions to providing legal assistance to planning startup events, IncubateUSC is an all-access pass to campus-wide resources and invaluable real-world connections.

- **The Center for Technology and Innovation in Pediatrics (CTIP)** is funded by Provost through the Collaboration Fund program of the Office of Research. It is an interdisciplinary group led by Yaniv Bar-Cohen and Jessica Roussset (CHLA), Gerald Loeb (Viterbi) and George Tolomiczenko (KSOM) whose purpose is to foster the creation of novel medical devices designed specifically for
children, as well as adapt and validate existing adult devices for children. The Center also oversees a pediatric public health accelerator using a $1.5 million grant from the FDA.

- **The Alfred E. Mann Institute for Biomedical Engineering at USC (AMI-USC)** was founded in 1998 with the mission of accelerating the commercialization of biomedical technology invented at USC. For development of its biomedical technology, AMI-USC partners with researchers throughout the university, where it is developed to a mature stage, validated, patented, and can be licensed to an industry partner or used for the formation of a start-up company along with external investment. The AMI-USC team is comprised of engineers, scientists, patent attorneys, regulatory experts, and business development professionals and also aids researchers in testing, scaling, product design, and marketing.

- **Clinical and Translational Science Institute**: The Southern California Clinical and Translational Science Institute: Established in 2010, the SC CTSI is one of 60 NIH-funded Clinical Translational Science Awards with a mandate to increase the efficiency and quality of translational research. Since its initial funding in 2008, SC CTSI has supported more than 800 investigators and nurtured research at USC and CHLA, building interdisciplinary teams, advancing drug and device development, supporting clinical trials, engaging diverse communities in research, and training clinical and translational researchers. Its efforts have contributed more than $90M in new extramural funding, more than 500 scientific publications, more than 80 patent applications and three start-ups, in addition to tangible health improvements in surrounding communities.

- **The Center for Health System Innovation** (CHSI) is a university-level Organized Research Unit that develops, evaluates and implements new methods that improve access to and the quality of chronic and acute health services interventions in all aspects of disseminated care delivery including the maintenance of wellness. Led by Carol Peden, MD, MPH, the center is housed at the Keck Medicine of USC to maximize the translation of innovation into sustainable outcome improvements in the USC Health System. It supports faculty and students interested in research & education aimed at improving the quality & efficiency of health care delivery.

**ii. School-led Innovation Efforts**

- **The Gehr Family Center for Implementation Science** aims to improve care delivery and health in Los Angeles through research and innovation. The center promotes collaborations with health systems in the LA community in the development and evaluation of innovations aimed at improving the quality and efficiency of health care delivery as well as the health of the population. The Gehr Family Innovation Awards provide seed grants to faculty ($25,000) to pilot health care delivery quality improvement projects (from 1-6 months) and innovations in partnership with health care systems within the Southern California community. The Center also provides for the Gehr Family Student Innovator Awards ($4,000), a fellowship program for health professional students to develop a mentored health care system project on the Keck Medical School campus in partnership with either the LAC+USC or Keck Healthcare system.

- Housed in the **School of Social Work**, the **Department of Community, Organization, and Business Innovation (COBI)** prepares students to lead and drive positive change in communities, organizations, businesses and government. The **COBI Fellowship in Social Innovation** is a transformative learning opportunity open to MSW students interested in understanding and creating social change. Those selected for the program spend three semesters participating in an
intimate, hands-on learning process designed to strengthen their professional skills, innovative thinking, and leadership capabilities. Fellows receive a $15,000 stipend. Also housed at the School of Social Work, the USC Center for Innovation and Research on Veterans and Military Families supports education and training platforms, leading research and partnerships that improve the capacity and competency of mental health providers to effectively address the needs of wounded warriors and their families.

- **The Brighten Award Entrepreneurial Gerontology Competition** of the School of Leonard Davis Gerontology supports undergraduate, graduate or post-doctoral student to innovate new and emerging products and services to improve the lives of older persons and their families. One winner will receive a grant worth $20,000 to be used towards the development of a new product or service.

- **The Sol Price Center for Social Innovation** aims to advance ideas, strategies, and practices that enhance the quality of life for people in urban communities. The center will provide opportunities for direct student engagement across all of the Price School’s primary disciplines. The center’s new faculty grant competition provides awards of up to $25,000 support proposals that aim to undertake research on novel solutions to challenges facing low-income urban communities. Within the center, the Price Social Innovation club provides a hub for exploring and promoted academic and practice-oriented learning related to the field of social innovation and social entrepreneurship.

- **The Viterbi School Office of Technology Innovation and Entrepreneurship** supports faculty and students to launch ventures with significant social and economic impact based on USC-developed technologies. USC Viterbi is also the home of one of the seven National Science Foundation Innovation Corps (“I-Corps”) national nodes in a partnership between UCLA, Caltech, and USC. I-Corps accelerate technology commercialization, support engineering entrepreneurship and promote education in innovation leadership. Since 2007, the school has also supported the Viterbi School of Engineering Research Innovation Fund program to foster novel strategic research directions, projects, and activities in the school. Support includes research grants to VSOE faculty as well as the promotion of the USC Viterbi-Axilor Entrepreneurship and Innovation Lecture Series.

- **The Lloyd Greif Center for Entrepreneurial Studies** at the Marshall School of Business is the nation’s oldest integrated entrepreneurship program. The Greif Center was named #3 by US News & World Report in its Best Business Schools 2016 rankings, and #4 worldwide by the Financial Times in 2015. With more than 68 courses taught by 27 professors and clinical practitioners, the center also funds a variety of venture competitions such as the Greif New Venture Seed Competition, the Marshall Women’s Pitch Competition (for women in the MBA program to launch their business), the Maseeh Entrepreneurship Prize Competition (for faculty and students to further translate ideas into products), the Min Family Engineering Social Entrepreneurship Prize Competition (for undergraduates and graduates to develop sustainable and effective solutions to global problems) and the Silicon Beach Awards, an annual venture competition for new ventures focused on technology or entertainment.

- **The Brittingham Social Enterprise Lab** is an academic center at the Marshall School of Business that provides training, mentoring, coursework and fellowships and grants to students to develop innovative ideas that address world problems, including in health-related fields. To this end, the
Lab partners with a number of organizations, philanthropies and programs, such as the Dell Social Innovation Challenge, the Unreasonable Institute, and the National Collegiate Inventors and Innovators Alliance, among many others.

- **The Blackstone LaunchPad** is a campus based entrepreneurship program designed to support and mentor students, staff and alumni - regardless of major, experience or discipline. First established in the spring semester of 2014, the Blackstone LaunchPad USC was funded by the Blackstone Charitable Foundation, which promotes student entrepreneurship on university campuses nationwide through a $50 million, five-year Entrepreneurship Initiative. USC’s grant is managed by the AIL, which runs the entrepreneurial CRUNCH Student Accelerator each spring, open to students across campus. The goal is to introduce students to entrepreneurship, providing access to and assistance from experienced entrepreneurs, lawyers, accountants, venture capitalists and others with professional expertise to help bring their businesses to market.

c. **Key Areas of Licensed Technology**

USC researchers disclose their scientific discoveries and inventions through the online USC Stevens invention disclosure portal. This initiates the commercialization process that begins with evaluation for patentability, and progresses through the marketing and license negotiation cycle, leading to development and commercialization by a company. Examples of corporate collaborations & licensing of health-related technologies include:

i. **Licensing**

- **Argus II Retinal Prosthesis:** The Argus II Retinal Prosthesis system is the first FDA-approved implanted electronic device to re-establish some functional vision in blind patients. The innovation was co-invented and co-developed by USC inventor Mark Humayun, MD, PhD with the company (and manufacturer) Second Sight Medical Products, Inc., and is the result of a close collaboration between the Keck School of Medicine, the Roski Eye Institute and the Viterbi School of Engineering.

- **Polyethylene Technology for Artificial Human Joints: Ronald Salovey**, PhD, of the Viterbi School of Engineering developed high-performing and long-lasting crosslinked polyethylene technology for artificial human joints. The technology was licensed to DePuy Orthopaedics, a J&J company, which uses it in its Marathon® hip prosthetic and in its enhanced ALTRX™ hip prosthetic. Marathon was the first ever FDA-cleared cross-linked polyethylene in orthopedics.

- **Bravemind:** Bravemind is a clinical, interactive, virtual reality (VR)-based exposure therapy tool used to assess and treat posttraumatic stress disorder (PTSD). The Bravemind VR Exposure Therapy software was created at the USC Institute for Creative Technologies by Albert “Skip” Rizzo, PhD, Director for Medical Virtual Reality at ICT and Research Professor in the Davis School of Gerontology and Keck School of Medicine, Department of Psychiatry & Behavioral Sciences and by Computer Scientist Arno Hartholt, who heads up the Integrated Virtual Humans and Art Production Group.

- **Lotus Tissue Repair:** David Woodley, MD, and Mei Chen, PhD, from the Keck School of Medicine helped form Lotus Tissue Repair, Inc. to commercialize their research finding that a specialized
protein in connective tissue – human, recombinant type VII collagen (C7) – can be administered to treat Dystrophic Epidermolysis Bullosa (DEB), an inherited disease affecting the skin and other organs.

ii. **Corporate Collaborations**

- **Pfizer Centers for Therapeutic Innovation**: USC is part of an innovative Pharma program with leading university and academic research centers nationwide. USC has a master research collaboration agreement with Pfizer CTI that focuses on large molecule targets. USC faculty awards from Pfizer CTI to date have focused on cancer and immune-oncology.

- **GPCR Consortium**: The GPCR Consortium is a public-private open source partnership to advance G-protein-coupled receptors research for drug development. Nine multinational pharmaceutical companies (Amgen, Sanofi, Ono, Pfizer, Merck, Lundbeck, Novo Nordisk, Taisho, Boehringer Ingelheim) are part of this consortium. Projects are led by Ray Stevens, PhD, Provost Professor of Biological Sciences and Chemistry and Director, The Bridge@USC, and include collaborations with researchers at the Bridge Institute at USC.

- **Foundation for the National Institutes of Health (FNIH)**: The FNIH Biomarkers Consortium launched a research partnership to determine whether liquid biopsies can be used instead of traditional solid tumor biopsies for diagnosing and monitoring metastatic colorectal cancer. USC’s Peter Kuhn, PhD, Dean’s Professor of Biological Sciences and Professor of Medicine, Biomedical Engineering, and Aerospace & Mechanical Engineering, leads the project team for “High Definition Single Cell Analysis of Blood and Tissue Biopsies in Patients with Colorectal Cancer Undergoing Hepatic Metastasectomy” (HD-SCA). The team comprises experts from the NCI, the U.S. FDA, USC, Scripps Clinic, Baylor College of Medicine, Mayo Clinic and four sponsoring pharmaceutical companies.

d. **Clinical Trials Organization**

i. **Clinical Trials Office**

The Clinical Trials Office (CTO) facilitates clinical research by providing the USC researcher community with comprehensive administrative services that help move industry-sponsored clinical trials from initial concept to study completion. The CTO provides budget development, Medicare Coverage Analysis (MCA), contract negotiation and execution for industry-sponsored clinical trials, in addition to performing the MCA for non-industry sponsored clinical trials. Oversight and management of the CTO is under the responsibility of the Keck School of Medicine at USC. Non-industry sponsored clinical research projects are negotiated and executed by the Department of Contracts and Grants (DCG), Health Sciences Campus. DCG also established a satellite office in San Diego to support ATRI, and has negotiated all of the large industry sponsored trials mentioned earlier. Clinical trial administration is supported by the OnCore Clinical Trials Management System. CHLA separately administers all clinical trials taking place there, but will share the OnCore software (as it already does for IRB software).

Every clinical project, regardless of sponsor, involving patient care must be submitted to CTO for a MCA; once completed, costs for clinical procedures and labs chargeable to award/sponsor are identified and attached to the completed MCA. The CTO also conducts a consistency review with the approved...
Informed Consent Form (ICF) from the IRB to make sure that terms included in ICF with respect to payments and subject injury are consistent with the grant or contract terms accepted by the University.

**ii. Clinical Investigations Support Office**

Under the oversight of the USC Norris Comprehensive Cancer Center, the Clinical Investigations Support Office (CISO) serves as a centralized unit to oversee the clinical research infrastructure and assist investigators in their conduct of cancer-related clinical trials and translational research projects. CISO has three main operational units: 1) Protocol Administration, providing centralized consultation and regulatory services necessary for the design, initiation, and conduct of clinical trials; 2) Protocol Implementation, which serves as a centralized unit for study coordinators and DMs, centralized data control and oversight and quality assurance; and 3) Administrative/ business management that fulfills administrative functions necessary for efficiency and coordination of CISO with sponsors, investigators and others. CISO plays a central coordinating role within the Cancer Center through its interactions with other cores such as the Biostatistics Core, the Cancer Research Informatics Core, the Translational Pathology Core, and the Protocol Review and Monitoring System entities (Clinical Investigations Committee and the Quality Assurance and Monitoring Committee and the Data Monitoring and Safety Committee.

**iii. SC CTSI-Southern California Clinical and Translational Science Institute**

The SC CTSI is one of 60 NIH-funded Clinical Translational Science institutes (renewed this year) with a mandate to increase the efficiency and quality of translational research. It provides services similar to those provided by CISO, for non-cancer related clinical studies. Services include: biostatistics and bioinformatics, education, career development, and ethics; clinical translation / clinical trials unit; preclinical translation and regulatory support; continuous quality improvement, research development and translational research informatics. The institute also works in partnership with core facilities at USC including: animal care and resources; cell culture; cytometry; genomics; histology; imaging; proteomics; therapeutic design, discovery & development; transgenic/knockout mouse in vivo models and vector design and construction.

**iv. Online Systems**

USC’s TARA (Total Access for Research Administration) system provides paperless support for most administrative processes, including proposal routing/approval (Kuali Coeus), compliance (iStar, from Click Commerce), IP management (Sophia), core billing (CORES), effort certification, and research business intelligence (Cognos). Tools specifically supporting clinical research include:

- **OnCore**: a clinical trials management system which includes protocol (study calendar), subject (participant enrollment), finance/invoice management (which grants are linked to which sponsors) as well as report generation.

- **iStar**: allows for online submission and review of Institutional Review Board (IRB) research proposals and applications. iStar enables the monitoring of information flow and the associated activities and tasks for all participants in the IRB regulatory process, delivering a complete electronic document based solution for Human Trials Regulation.
e. Policies on Conflicts of Interest

i. USC Office of Compliance

The USC Office of Compliance provides guidance to the university’s research community regarding research administration, compliance and conflict of interest issues, informing faculty and staff on federal and state laws and regulations that may impact the research community; developing new policies and guidance in emerging areas of risk relevant to researchers and research administrators; monitoring and auditing research compliance activity in partnership with Audit Services, as well as managing conflicts of interest related to research, among many other services. The office also oversees the online Conflict of Interest training courses that are required for faculty.

The university has several conflict of interest policies and procedures that impact faculty, staff and students and that outline circumstances and relationships with outside interests that can create, or appear to create, conflicts of interest. Depending on the circumstances, one or more of these policies might apply. In brief:

- **Conflict of Interest in Professional and Business Practices**: The policy requires all university employees to devote their primary professional loyalty to the university. A conflict of interest arises under this policy when financial or other personal considerations compromise, or have the appearance of compromising, an individual’s professional judgment and ability to perform his or her responsibilities to USC.

- **Conflict of Interest in Research**: An individual conflict of interest related to research arises when financial or other personal considerations compromise, or have the appearance of compromising, an individual’s professional judgment in proposing, conducting, supervising or reporting research. University researchers (faculty, staff and students) have an obligation to disclose outside activities when they maintain an interest (equity interest, management role or consulting income in excess of $5,000 per year) in a sponsor, or in an outside entity whose product (drug, device, equipment, supplies, etc.) is under study, regardless of the sponsor.

- **Institutional Conflict of Interest in Research**: An institutional conflict of interest occurs when a financial interest of the university (e.g., investments held by the university in a company) has the potential to bias research conducted by its employees or students, or creates an unacceptable risk to human subjects.

- **Relationships with Industry**: All USC healthcare professionals who engage in outside activity (including advisory board work) for pharmaceutical companies, biotechnology companies, device and medical equipment manufacturers and other healthcare suppliers must follow certain requirements when they engage in such activity, regardless of whether there is any relationship between that outside activity and research at the university, and regardless of the amount of compensation.

ii. diSClose

diSClose is an online system (part of the Click Commerce Suite) for use by USC Employees to disclose a possible conflict of interest or relationship with industry. Additionally, researchers who are proposing or have received support from the United States Department of Health and Human Services (including NIH, CDC, HRSA, and AHRQ) must also make an annual disclosure of all financial interests related to their
institutional responsibilities to USC, regardless of whether any of these interests give rise to a conflict of interest related to their research.

iii. Conflict of Interest Review Committee (CIRC)

The CIRC, chaired by Frances Richmond, PhD, on the Health Science Campus and by the Vice President of Research on the University Park Campus, is charged with reviewing conflict of interest disclosures and formulating recommendations to manage, reduce, or eliminate conflicts of interest. The CIRC consists of faculty members appointed by the VP of Research, a representative from the Office of Compliance, a representative from the USC Stevens Center for Innovation (non-voting), a representative from the Institutional Review Board (IRB) or the Office for Protection of Research Subjects (OPRS), an attorney from the Office of General Counsel (non-voting), a representative from the Department of Contracts and Grants (non-voting), and such other representatives as may be determined by the CIRC.

Investigators are not permitted to begin any research activity when there is an actual or apparent conflict of interest before they receive a written determination from the Vice President of Research as to how to manage the conflict. Investigators are not permitted to begin an external activity that would create a conflict of interest relative to ongoing research activity before they receive a written determination from the Vice President of Research as to how to manage the conflict.

f. Implementation Science

Implementation science is a growing area of interest at USC, seeking ways to both improve the way that we deliver care, and also creating innovations that might be applied more broadly. Increasing the quality of care through reduction in adverse events, infections and readmissions, and efficiency of care, through reduced length of stay, are

The Center for Health System Innovation (CHSI) was recently established at Keck Medical Center of USC to develop and translate innovation in the delivery of health care. The CHSI developed from a partnership among several USC schools, including the Viterbi School of Engineering and the Pacific Center for Health Policy and Ethics. Led by Executive Director Carol Peden, MD, MPH, a professor in the Department of Anesthesiology, and reporting to the Vice President of Research, leadership includes a Faculty Steering Committee and a Health System Advisory Committee. The focus of the center is to turn research and education into measurable and sustainable improvements in outcomes and experience for patients and staff.

Other related areas include:

- The Gehr Center, mentioned earlier
- Dworak-Peck School of Social Work, studying quality and cost-effectiveness
- Schaeffer Center, studying effectiveness of health-care policies and reimbursement programs
- Viterbi School of Engineering, creating technologies that more efficient care delivery
- Annenberg School of Communication, School of Cinematic Arts and Institute for Creative Technologies, studying the communication of health related messages and the impact on health.

LA County Department of Health Services and the CTSI have partnered on a pilot funding program targeting improvement of care delivery.
g. Creating a Research Culture Among Clinical Faculty, Students, Residents and Fellows

USC encourages a culture of research and collaboration between clinical faculty and scientists, students, fellows and residents. Successful educational and training efforts include programs such as the Keck School of Medicine Required Scholarship, in which medical students are exposed to scholarly hypothesis-driven research experience as part of their training; Provost signature programs, such as the Clinical Residence & Fellow Program for Postdocs allows MD residents and fellows, including from CHLA, to be appointed as Postdocs at USC, and, as such, provides access to and funding for them to take coursework in all areas of research. The USC Postdoc Office also supports grants that pay for postdoc travel and expenses to present their research at conferences.

Pilot grant programs, such as the Ming Hsieh Institute grants, specifically require team science in which co-PIs must be a clinical faculty MD and a scientist. Successful research by physicians is also exemplified by the recent renewal of the USC CTSI, headed by Tom Buchanan, MD, a physician researcher, Vice Dean for Research at the Keck School of Medicine, Endocrine Division Chief in the Department of Medicine and CTSI Director.
7. COMMUNITY HEALTH

USC is located in the center of Los Angeles, the second largest city in the country with four million people, and located in the center of Los Angeles County, the largest in the country with more than 10 million people. Within the City of Los Angeles, 49% of residents are Hispanic, 28% are white, 11% are Asian and 9% are black. Similar levels of diversity exist throughout the county. LA is also home to large numbers of immigrants from throughout the world; it is a place where many languages are spoken and where international cultures have blended into a uniquely diverse region. The southern California region as whole, extending to San Diego, has a population of more than 22 million, exceeding the population of all other states excepting Texas.

Neighborhoods surrounding USC campuses are similarly diverse, and USC has initiated an extensive set of programs aimed at studying and improving the health of the communities that we serve. Diversity of patient populations are themes of our CTSI, Norris Comprehensive Cancer Center, Alzheimer’s Disease Resource Center and Roski Eye Institute, to name a few examples. Our residency program is centered on the LAC+USC hospital, and numerous opportunities are provided to students at all levels to contribute to community health programs.

a. State of the Community Reports and Input from Partners

The County of Los Angeles’ Department of Public Health tracks the health of county residents through various reporting mechanisms. USC itself produced a “State of the Neighborhood Report.” These are summarized in the following section.

i. Neighborhood report and LA County reports

The State of the Neighborhood Project 1 In 1992, USC launched an initiative to develop community–university partnerships to guide activities in priority areas in civic engagement, academic units and departments. Priority areas identified were successful schools, healthy families, connecting campus and community, thriving businesses and safe streets. Currently, USC invests $35 million annually to support community initiatives which now serves nearly 40,000 community members. In 2013, USC introduced the State of the Neighborhood Project, an effort designed to increase the understanding of community needs and inform community efforts in cultivating, strengthening and enhancing new and existing resources. The project was conceptualized and supported under the auspices of the USC Office of the Senior Vice President for University Relations, the Office of the Provost, and deans across various colleges and schools. A community advisory board and faculty task force were formed to provide guidance and input during the development and implementation phases of the project. Advancement Project was contracted to assist in the preparation of the report under the leadership of Hortensia Amaro, PhD, Associate Vice Provost for Community Research Initiatives.

The report noted specific areas of strength, challenges and need in the communities surrounding UPC and HSC. Focus group participants and members of the community advisory board and faculty task force noted opportunities for strengthening the relationship between the university and the communities

within the UPC and HSC study areas. These include continued efforts to improve information dissemination to widen access to USC community programs and services; increase and strengthen university involvement and partnerships in the community, including strategies to plan a future for the neighborhood together; and prioritization of workforce development among community residents and building community social capital.

ii. Critical Role of Ethnic Diversity, Hispanic Populations, and Demographics

Community conditions across the city of Los Angeles vary widely, with some communities having a wealth of resources and others few. The neighborhoods in which USC campuses are located are highly ethnically and culturally diverse and USC leadership, faculty and staff widely recognize that this diversity provides USC with unique educational, clinical and health-related research opportunities, as well as opportunities for community service. In particular, faculty input during the site visit preparatory process emphasized that the demographic characteristics of neighborhoods surrounding USC should be considered a significant asset of the university, and that the inclusion of local population in research, in particular in clinical trial research, should be expanded, for the benefit of the community, as well as USC research. Demographic indicators of the neighborhoods surrounding the UPC and HSC campuses are highlighted in the table below.


<table>
<thead>
<tr>
<th>2008-2012 Census Data</th>
<th>University Park Campus Region</th>
<th>Health Science Campus Region</th>
</tr>
</thead>
<tbody>
<tr>
<td>Population</td>
<td>162,390 residents</td>
<td>124,285 residents</td>
</tr>
<tr>
<td>Ethnicity</td>
<td>Hispanic or Latino (68.9%), African-American (11.8%), Asian (9.8%), White (7.5%)</td>
<td>Hispanic or Latino descent (90%)</td>
</tr>
<tr>
<td>Economic status (families with children under age 18 living in poverty)</td>
<td>47.3%, almost double that of the city (25.2%), an increase from 35.8% in 2000.</td>
<td>34.2%</td>
</tr>
<tr>
<td>Health insurance</td>
<td>37.5% lacked health insurance compared to LA residents (25.8%); data prior to implementation of the Affordable Care Act (ACA).</td>
<td>33.7% of individuals lacked health insurance</td>
</tr>
<tr>
<td>Violent crime rate</td>
<td>significantly higher (7.7 per 1,000 persons) compared to the city of Los Angeles (4 per 1,000 persons).</td>
<td>rate of violent crime similar to that of the city of Los Angeles.</td>
</tr>
</tbody>
</table>

iii. Input from Community Partners (chronic disease, obesity/diabetes, immigration/undocumented, pollution, trauma from other countries, homelessness)

The neighborhoods surrounding the UPC and HSC face significant challenges in overcoming a broad spectrum of social needs. Input from community partners and stakeholders listed a number of areas of concern, including:

- disparities in health and healthcare. As a state participating in Medicaid expansion under ACA, community members have much better access to insurance than the past, with the exception being the large population of undocumented aliens. Those covered have more limited options available than residents receiving employer provided insurance or Medicare, but do have access
to a network of Federally Qualified Health Centers. Altamed, serving the vicinity of the HSC, is one of the largest FQHCs in the country.

- **diabetes.** One in 12 California’s have been diagnosed with diabetes, with rates of type 2 diabetes in Hispanics more than double that of Non-Hispanic Whites (10.5% and 4.9%, respectively). Los Angeles county has the dubious distinction of leading the state in number of type 2 diabetics (over 530,000) and in number of obese adults (over 1.8 million). The HSC campus neighborhood of Boyle Heights is home to one of the largest Hispanic/Mexican populations in the United States — 50 percent of teens are overweight or obese, compared to 34 percent in Los Angeles County and 29 percent statewide.

- **dearth of affordable healthy food retailers:** the overabundance of fast food is a contributing factor to childhood obesity. Only 27.6 percent of adults in South LA rate the quality of the fresh fruits and vegetables where they shop as high, compared to 51.6 percent in West LA. The lack of local access to healthy foods makes it difficult for families who remain in low-income urban communities to maintain a well-balanced, nutritious diet. With limited transportation options, these families must resort to purchasing unhealthy foods from nearby fast food restaurants or local corner stores.

- **environmental pollution,** compounded by minimal green space to access—about 45 times less park space per person than Los Angeles overall. Research has shown that low-income, minority communities experience higher levels of environmental pollution in the United States, and that these populations often have poorer health. Located at the confluence of the 5, 10, 60 and 101 freeways, Boyle Heights faces some of the worst pollution in the county and has a disproportionately high poverty rate, 33 percent.

- **homelessness,** including high rates of people experiencing chronic homelessness. In LA County, some 44,000 individuals are homeless on any given night — up from 39,000 in 2013. And while in most U.S. communities the homeless are sheltered, in Los Angeles, some 70% are on the street. The homeless population is also reflective of greater social, economic and health problems experienced by area residents as the homeless populations include veterans, the mentally ill, elderly, foster youth, former prisoners, young families, victims of domestic abuse, the chronically ill, and the unemployed or underemployed.

- **a large population of undocumented immigrants.** It is estimated 11 million unauthorized immigrants resided in the United States in 2013, with approximately 30% living in California; Los Angeles county is among the top 5 in the nation with the largest numbers of unauthorized immigrants.

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**b. Key Community Health Programs**

  **i. Service Focused**

USC’s strength as a university depends on its ability to be a good neighbor, supporting healthy, vibrant and engaged communities around its campuses and throughout the region. Additionally, as a major

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2 Burden of Diabetes in California, California Department of Public Health, Chronic Disease Control Branch, September 2014
3 Food Desert to Food Oasis, Promoting Grocery Store Development in South Los Angeles, 2010, CHC Food Resource Development Workgroup
institution and employer in the city of Los Angeles, USC plays an important role as a convener, agent of change and leader to form mutually beneficial transformative collaborations. The university has over 100 community-oriented programs in education, health, and research, as well as volunteer opportunities. Some of the health-related programs are highlighted below. These programs are supported in a variety of ways:

- Master Services Agreement with LA County Department of Health Services
- USC’s Good Neighbors Program, funded by employee donations, and directed to community programs surrounding our campuses.
- Research grants and contracts from external sponsors that include community elements.
- Service agreements with community health organizations
- Gifts from foundations and other benefactors
- In-kind resources from USC’s schools
- Volunteer efforts of faculty, staff and students

**Ramona Gardens Women’s Health Initiative:** A collaboration between the Clínica Monseñor Oscar Romero, Ramona Gardens residents and USC Health Sciences Campus Community Partnerships in Civic Engagement, “Ahora Es” is a health education intervention program to address high chronic disease rates in East Los Angeles. The program is led by trained Promotoras (residents-turned-health educators) who work with the local population.

**Radiology Cancer Screening Program:** The Department of Radiology has partnered with USC’s Health Sciences Campus Community Partnerships Office and the Norris Comprehensive Cancer Center, as well as the Watts Health Foundation, to provide free lung cancer screening and smoking cessation resources to people at high risk of lung cancer living in the Centinela Valley.

**Fototelenovela Program:** Fototelenovelas—small bi-lingual (Spanish/English) booklets developed by School of Pharmacy faculty and staff, portray a dramatic story using photographs and captions and are used in local schools as education tools on topics such as asthma, diabetes, breast cancer prevention.

**L.A. CareNow — Pro-Bono Medical Care:** A collaborative effort between the Keck School of Medicine, CARE Now and LA Marathon, USC faculty physicians and students in specialties including primary care, ophthalmology, psychiatry, cardiology, dermatology, gynecology, urology, otolaryngology and public health volunteer their time at the L.A. CareNow clinic, held at the Los Angeles Memorial Sports Arena, serving uninsured and underinsured patients over the four days.

**USC Breathmobile:** The Breathmobile, a collaboration between the Keck School of Medicine and the USC Family of Schools and neighborhood residents, serves nearly 100 locations throughout East, South and South Central Los Angeles. Each mobile unit helps high risk children control their respiratory disease.

**Fit Families Program:** A collaboration between the Ostrow School of Dentistry, USC Department of Physical Therapy and the USC Family of Schools and Neighborhood Residents / Hazard Park Recreational Center, the program provides pro bono preventive and wellness physical therapy services to underserved elementary-school-aged children in the local community diagnosed with or at high risk for diabetes.
**Es Tiempo/ Cervical Cancer Campaign** is an evidence-based, tailored media campaign program launched in Boyle Heights to increase cervical cancer screening, a collaborative effort between the Norris, HSC Community Partnerships and the Clínica Monseñor Oscar Romero.

**ii. Experiential Education**

Experiential learning encompasses a broad spectrum of educational experiences with both cognitive and motivational benefits for students. Examples include study abroad programs, community service, fieldwork, sensitivity training groups, workshops, internships, cooperative education involving work in business or industry, and undergraduate participation in faculty research. These experiences may also provide students opportunities for interprofessional education – for instance, premed, occupational and physical therapy students working as teams in health fairs and clinics. Fieldwork, clinical training and/or internships are required components of many programs at USC. Some of the experiential education opportunities at USC include:

**The USC Joint Educational Project (JEP)** Based in Dornsife College, JEP is designed to broker between academic courses and schools and service agencies surrounding the USC’s main campus. JEP places some 2,000 students, from about 50 courses in the college each year. Students may also be given extra credit or partial credit for their participation in the form of a waiver of other course requirements.

**USC Neighborhood Mobile Dental Clinic:** The Community Oral Health Program, a collaboration between the Ostrow School of Dentistry, the USC Family of Schools and Neighborhood Residents, has eight mobile trailers and is the largest mobile dental clinic in the world. Program participants – students and faculty - have provided more than $1 million in free dental care to underserved communities from Central California to the Mexican border.

**Health Fairs and Clinic:** The USC School of Pharmacy collaborates with various local non-profit organizations, and county agencies providing USC Students opportunities to participate in nearly 200 community health fairs, providing services including health screenings, immunizations, and the disbursement of other relevant health education material. Of note is the USC Pharmacy program in which students provided free health screenings and immunizations to 2,950 community members, including 780 free flu shots.

**The Fuente Initiative:** USC pharmacy faculty members and students to provide poison prevention education, appropriate drug use and self-management education, and general health education and screenings for diabetes, hypertension and obesity.

**iii. Student Led**

Student-run experiential learning programs are strongly encouraged at USC, and provide students with opportunities to develop their leadership and managerial skills, while also providing services to the surrounding community. Examples of health-related student-run efforts include:

**The Trojan Health Volunteers:** THV was established in 1985 by USC students who recognized the need for pre-health students to gain exposure to their future occupations outside of their classroom experience. Currently, the program partners with 12 local health clinics and hospitals and has over 120 pre-health students participating in THV programs each semester. Supervised by a full-time staff member, the program is run by undergraduate students (THV director and assistant director) who recruit, train, and monitor students and develop/maintain relationships with partnering hospitals/clinics.
The Student-Run Clinic: The SRC exemplifies USC’s efforts to deliver quality patient care to the underserved population of the surrounding neighborhoods while enhancing inter-professional education through a team-based approach to health care. With about 200 student-volunteers from occupational therapy, medicine, pharmacy, and the physician assistant program, Care Teams work under close supervision of licensed USC Preceptors from all four professions. The clinic, located in the downtown LA skid row area, provides students a greater understanding of disenfranchised population needs while forcing them to think critically and create workarounds to population’s reality.

iv. Research

USC’s Office of Community Partnerships directs outreach efforts and activities and works with faculty and stakeholders on campus to provide coordination and leadership in facilitating community partnerships associate with community-based health research. Executive Director Zul Surani was instrumental in launching and managing the Norris Cancer Center Patient Education and Community Outreach Center and for a decade, he served as the Partnership Program Coordinator for a National Cancer Institute.

Efforts to facilitate community-based research also exist at the school level, for example, the School of Pharmacy partners with the Health Services Advisory Group - Right Care Initiative, which aims to improve clinical outcomes by catalyzing uptake of patient-centered, evidence-based best practices among medical groups, clinics, and health plans. Through its University Based Practices (UBP) efforts in three metro areas, the Initiative and its partners work to improve critical metrics for heart attack, stroke and diabetes complications prevention. The public-private partnership includes California medical groups, clinics, health systems, health plans and patients; USC, University of California, Stanford Clinical Excellence Research Center, Health Services Advisory Group (CMS QIO), the Chronic Care Coalition; RAND; and the CA Department of Managed Health Care, among many others.

v. Keck Medicine, SC-CTSI and CHLA Community Benefit Offices

Keck Medicine: The Keck Medical Center Community Grants and Sponsorship program is a key initiative of the community benefit program and supports the center’s goal to address the unmet health needs of the surrounding community. Community benefit programs are designed to provide treatment and/or promote health and healing in response to the community needs identified in Keck’s Community Health Needs Assessment Report, namely, access to health care, cancer, chronic diseases (asthma, cardiovascular disease, diabetes), dental and mental health, overweight/obesity, safety and community violence, STD/HIV/AIDS and substance abuse. To qualify as community benefit, initiatives must respond to an identified community need and must meet at least one of the following criteria: 1) Improves access to health care services; 2) Enhances the health of the community; 3) Advances medical or health knowledge; or 4) Relieves or reduces the burden of government or other community efforts.

SC-CTSI: The Southern California Clinical and Translational Science Institute’s Office of Community Engagement (OCE) is one of eight offices/centers that make up the SC CTSI. This core group engages a broad spectrum of communities across the continuum of clinical and translational research, with particular emphasis on diverse and underserved communities, including pediatrics. The group helps researchers understand the health needs and research barriers of special populations and then facilitates academic-community partnerships to ensure patient/community engagement in all stages of clinical and translational research. OCE’s two fulltime bilingual community ambassadors (“promotoras”) serve as liaison with community programs, evaluating and disseminating novel approaches for engaging diverse populations in clinical and translational research to help reduce barriers to research participation.
**CHLA**: Children’s hospital is committed to supporting clinical and non-clinical programs or activities that provide treatment and promote health as a response to identified community needs, namely, 1) Improve access to health care services; 2) Enhance public health of the community; 3) Advance medical or health care knowledge that provides public benefit and 4) Relieve or reduce the burden of government or other community efforts. In 2014, unreimbursed costs for medical services of government-sponsored programs by CHLA totaled $158.7M, with charity care costs, subsidized health services and community health improvement services totaling $3.2m, $4m and $3.5m, respectively. CHLA partners with over 40 local and national community organizations and associations to support programs and initiatives such as Child Health Advocacy, Child Safety, Family and Teen Health, Health Access and Youth Development - Careers in Health and Mentorship Program (CHAMP).
8. INTERPROFESSIONAL EDUCATION

a. Degree Programs at USC by Category

USC offers over 680 undergraduate, graduate and professional majors, of which about 160 are health-related, enrolling about 12,000 students in 9 different schools. Our programs are classified into four groupings: health professions (leading to licensure and certification to deliver a health service), public health, health technology, healthcare administration and health science (such as biology). The largest programs in each grouping are listed below, in order of size. Each of these enrolled more than 100 students in the spring. These large programs account for 75% of the health program enrollment.

**Health Professions**
- Master of Social Work (Dworak-Peck)
- Medical Doctorate (Keck)
- Doctor of Pharmacy
- Doctor of Dental Surgery (Ostrow)
- Masters of Occupational Therapy (Ostrow)
- Doctor of Physical Therapy (Ostrow)
- Masters of Physician Assistant Practice (Keck School)

**Public Health**
- BS in Health Promotion and Disease Prevention Studies (Keck)
- Masters in Public Health (Keck) Masters in Global Medicine (Keck)

**Health Technology**
- BS in Biomedical Engineering
- PhD in Biomedical Engineering

**Healthcare Administration**
- Masters in Health Administration (Price)

**Health Science**
- BS in Psychology
- BS in Human Biology
- BS in Biological Sciences
- BS in Biochemistry
- BS in Neuroscience
- BS in Cognitive Science
- Masters in Gerontology

Of these large programs, the MSW, Masters in Health Administration and Masters of Public Health are all available on-line, each with more than 100 enrolled students as of spring 2016. In fact, our largest single
health program is the on-line MSW with more than 2,000 students. In addition to the above, USC just launched an on-line MSN program that is likely to attract more than 100 students within the next two years.

Options, such as the Progressive Degree Program, enable USC undergraduates to begin work on a master’s degree while completing requirements for the bachelor’s degree, allowing students to explore academic pathways related to their bachelor’s degree and providing an additional competitive edge in admission to law, medical or other professional schools. A number of health-related dual and joint degree programs, such as those offered by the School of Pharmacy (list below) also provide students opportunities for interprofessional education and greater specialization in their chosen field of study.

- Doctor of Pharmacy/Juris Doctor (PharmD/JD)
- Doctor of Pharmacy/Doctor of Philosophy (PharmD/PhD)
- Doctor of Pharmacy/Master of Business Administration (PharmD/MBA)
- Doctor of Pharmacy/Master of Public Health (PharmD/MPH)
- Doctor of Pharmacy/Master of Science in Regulatory Science (PharmD/MS Reg Sci)
- Doctor of Pharmacy/Master of Science in Gerontology (PharmD/MS Gerontology)
- Doctor of Pharmacy/Master of Science in Global Medicine (PharmD/MSGM)
- Doctor of Pharmacy/Master of Science in Healthcare Decision Analysis (PharmD/MS HCDA)

b. Preparation of Undergraduates

Advisement: For those interested in careers in health-related fields (USC has about 2,800 “pre-health” students), USC’s Pre-Health Advisement Office advisors aid students in all steps of their educational experience, from assisting in creating a study calendars to ensuring students they take required courses for their career choice, to providing access to practice with mock entrance exams (such as the MCAT) and interviews. Importantly, the office partners with USC schools to create career fairs, offering students the opportunity to interact with professionals from different health-related fields while providing them with exposure to a broad spectrum of existing health-related professions and career choices. The office reports under the Dornsife College, but provides services to all undergraduates.

Otherwise, advisement occurs within the individual programs, and is therefore distributed across the university.

Internship and Research Opportunities: Institutional, school and student-run programs liaison internship opportunities with local community programs, hospitals, clinics and businesses, exposing undergraduates to a real world work environment that allows them to develop their skills, gain confidence and valuable
understanding of their chosen career and importantly, gain work experience and access to professional networks which may provide a competitive edge in hiring decisions of potential future employers. Additionally, programs such as the student-run Joint Educational Project place some 2,000 students each semester in internships with local partners. The USC Student Affairs Career Center provides USC students and alumni with a full range of career services and is home to the Career Network, comprised of USC alumni who volunteer as mentors on career-related issues.

Information for opportunities for research experience is provided through events such as the Research and Fellowship Week (see uploaded documents for event flyer). Organized by the Graduate School, the fair informs graduate students and postdocs of research experience opportunities and funding sources, as well as provides workshops on writing personal statements, among many other topics. At the undergraduate level, research experience may be more restrictive, depending on the type of research conducted, as exposure, in the lab, to biohazards or requirements for training and certification may impede undergraduate student participation; however, students may inquire directly with the faculty regarding research experience availability in his or her lab.

**c. Rotations and Placement of Health Professionals**

Rotations and field-work provide opportunities for additional training and networking and are required for the accreditation of many health-related programs.

Examples placements include:

**Ostrow School of Dentistry - Division of Occupational Sciences and Occupational Therapy:** Students completing the master’s degree participate in three Level I fieldwork experiences as part of each of the Practice Immersion courses (Adult Physical Rehabilitation, Mental Health, and Pediatrics). Level I Fieldwork refers to practice experiences embedded in academic coursework and includes observation and beginning hands-on experience with clients under the supervision of a registered/licensed occupational therapist or other healthcare practitioner or professional. Level II fieldwork, typically taken during the summer between the first and second year, provides students the opportunity to apply the knowledge gained during the level I training to the Systems Model of the Human as an occupational being within the practice environment.

Rotations are required as of year three of the our-year Doctor of Dental Surgery (DDS) program and may include: Community Outreach/Service Learning, Diagnosis, Emergency, Oral Surgery, Pediatric Dentistry, Periodontics, Geriatrics, Hospital Dentistry and Medicine/Orofacial Pain.

**Keck School of Medicine (KSOM):** The final two years of medical school are designed as a continuum of two calendar years, beginning in July after the conclusion of Year II (Year III–IV Continuum). During the spring of their second year, students schedule clerkship rotations to be taken during the two years of the continuum. Each student’s program is designed with the assistance of faculty advisors and includes 50 weeks of required clerkships, 16 weeks of selective clerkships and 16 weeks of elective clerkships. All degree candidates are required to take Step I of the United States Medical Licensing Examination (USMLE) prior to entering the junior/senior continuum and pass it before starting their senior year of the continuum. Students must pass Step II CK and CS of the USMLE by December 31 of their senior year as a graduation requirement. Selective rotations (four weeks in length) are completed at the LAC+USC Medical Center and available options can be found on MedWeb. Elective rotations are a minimum of two weeks and a maximum of six weeks. Research can also be completed for elective credit.
• **Year III-IV Required Clerkships:** Family Medicine—6 weeks; Internal Medicine—6 weeks; Internal Medicine Sub-internship—4 weeks; Obstetrics/Gynecology—6 weeks; Pediatrics—6 weeks; Psychiatry—6 weeks; Neurology—4 weeks; Surgery—6 weeks; Surgical Subspecialty—4 weeks; Intersessions—2 weeks for a total of 50 weeks of clerkship.

• **KSOM Placement Services:** The Office of Student Affairs deans and staff provide support and services for medical students in the areas of counseling for academic or personal issues, career advising, registrar services, student health and wellness, student organizations and interest groups, summer enrichment opportunities, student leadership, leaves of absence, letters of recommendation, and medical student research. The Office of Student Affairs also oversees Keck Academic and Career Advising, a comprehensive four-year program designed, in conjunction with the AAMC’s [Careers in Medicine](#) program, to provide the resources necessary for students to understand themselves and their career goals, explore the wide variety of career options in medicine, choose a specialty, and successfully apply for residency and participate in the Match.

The *Visiting Student Clerkships* program at the Keck School of Medicine offers domestic and international students in good standing in the senior year of medical school to apply for clerkships for up to a maximum of eight weeks with Keck medicine of USC of with CHLA. Rotation positions depend upon the availability of each department at the time of application. Placement of health professionals is accomplished through Keck’s Career and Professional Development Committee, which is charged with linking Keck School of Medicine PhD students and postdoctoral scholars to useful information and skills for successfully directing their careers.

**Southern California Clinical and Translational Science Institute:** The three-year KL2 Mentored Career Development Program of the SC-CTSI supports the research career development of promising individuals who have recently completed professional training and who are commencing basic, translational, and/or clinical research. KL2 Scholars must have a research or professional doctoral degree in a clinical discipline and should be junior faculty members or anticipate promotion to faculty status. PhD faculty in the health professions seeking a transition into a clinical research career also qualify for this program.

d. **Residencies at LA County, Keck Medicine, School of Pharmacy and CHLA**

Clinical faculty of the Keck School of Medicine direct a broad range of accredited residency and fellowship training programs at the LAC+USC Medical Center and other nearby institutions, with over 60 residency programs offered at LAS+USC alone, the majority of Keck Medicine training programs admits new MD graduates through the national matching program and centralized application service administered by the American Association of Medical Colleges. ACGME reports 912 residents are placed at LAC+USC, which is the 29th largest program in the US. The department of medicine alone provides direct education to 189 residents, over 80 subspecialty fellows and approximately 200 medical students at LAC+USC each year. Rotation schedules and length of training of residency programs (typically 3-5 years) are determined by each medical department to meet the accreditation requirements of the specific area of medical specialty.

Children’s Hospital Los Angeles currently mentors 98 fellows, providing training and research opportunities in all areas of pediatric care, including emergency medicine, transplantation, public health, critical and adolescent care, cardiology and neurology, among many others. The innovative Virtual Pediatric Intensive Care Unit (VPICU) Fellowship focuses on telemedicine or VPICU-related research projects such as Developing pediatric critical care telemedicine programs and distance learning programs.
for pediatric critical care. According to ACGE, 179 residents are placed at CHLA

The residency programs at the USC School of Pharmacy are accredited by the American Society of Health-System Pharmacists and prepare pharmacists to be clinical practitioners, researchers and educators. USC offers both Postgraduate Year 1 (PGY1) and Postgraduate Year 2 (PGY2) pharmacy practice residency programs held at over 13 health centers, clinics and hospitals, including LAS+USC, Huntington Hospital, Keck Hospital, the Norris Cancer Center, Hollywood Presbyterian Medical Center, Veterans Affairs Greater Los Angeles Healthcare System and the Pacific Pharmacy Group. Rotation areas of specialty include, among others, acute and ambulatory care, cardiology, community pharmacy, infectious disease, oncology and psychiatric pharmacy practice.

e. Postdoctoral Scholars

PhD training and non-degree postdoctoral fellowship focuses primarily but not exclusively on scientists who seek advanced training. As a central administrative advocate and resource center for postdoctoral scholars, faculty mentors and staff, USC’s Office of Postdoctoral Affairs aims to enhance the success of our postdoctoral scholars by providing information on job opportunities and funding as well as sponsoring workshops and training. USC is home to 522 postdocs, in addition to 120 from CHLA. The USC Jobs site lists all openings for Postdoctoral Research Associate positions at the university, and may also be listed directly through the department or unit offering the position. Postdoc fellowship programs are also offered through each academic school at USC, such as the School of Social Work Postdoctoral Research Fellowship Program, providing doctoral candidates a stipend and assistance to develop advanced research skills. Postdoctoral fellowships may also be jointly supported through industry-university partnership, such as the School of Pharmacy USC-Allergan Pharmaceutical Industry Fellowship program (see upload documents), with areas of research including Clinical Development, Drug Delivery Sciences, Global Regulatory and Medical Affairs, Infectious Diseases Pharmacology, Pharmaceutical Development, and Pharmacokinetics and Pharmacodynamics. Such partnership programs also serve as potential placement and future employment as fellows have been placed into positions in industry, pharmacy practice and research.

Keck School of Medicine & CHLA: A Postdoctoral Scholar (Postdoctoral Fellow or Postdoctoral Research Associate) is considered a trainee in residence at the university pursuing advanced study beyond the doctorate in preparation for a full-time academic and/or research career. The program extends the reach of junior scholars who have completed their doctoral degrees, are preparing for full-time research or academic careers, and wish to broaden their research under senior scholars in their fields. The Keck School currently has 189 postdoc research scholars with 84 of the trainees based at CHLA.

Ostrow School of Dentistry: The schools T90/R90 training grant provides PhD candidates and postdoctoral trainees with a broadened, interdisciplinary research experience in a research-intensive university setting, supporting four PhD students and five postdoctoral trainees.

f. Coordination of Interprofessional Education

IPE is coordinated through an IPE committee, which is facilitated by Amy Chatfield from the Norris Medical Library. Participants are responsible for programs leading to clinical health degrees (i.e., licensed professions, such as MD and DDS), and have focused on fulfillment of accreditation requirements. The IPE committee is not empowered to create a university strategy for IPE, and therefore has focused more
on the logistical challenges of provide IPE educational experiences for our students. However, the committee has proposed the creation of a center at USC devoted to IPE in the health professions.
9. ACCESS AND DEVELOPMENT OF UNIQUE/SPECIALIZED CARE

a. Hospital Specialty Versus Primary Care

USC's vision is to elevate our status as an elite academic medical center through emphasis on complex tertiary/quaternary (T/Q) care. To do this, we are pursuing a network expansion strategy that formalizes relationships with physician groups, external providers and payors to secure sustained preferential access to larger patient populations. The following section describes some of the areas where we are investing in T/Q care.

b. Integration of LAC/USC + Keck Medicine

Keck Medicine is investing in clinical service lines in several areas, including the following:

**Cardiothoracic Surgery**: USC Medicine has been a leader in the treatment of cardiothoracic diseases for more than 10 years. Under the leadership of Vaughn A. Starnes, M.D., USC surgeons have performed more than 15,000 open heart surgeries for valve repair and replacements and coronary artery bypasses. The department is advancing the use of robotic surgery (such as robotic-assisted MAZE and the da Vinci surgical system, that incorporates 3D vision and microsurgical instruments) as well as minimally invasive cardiac procedures, utilizing small incisions and without stopping the heart, or separating the breastbone (sternum) and ribcage, or requiring a heart-lung machine to be used.

**Ophthalmology**: The USC Department of Ophthalmology is widely recognized as a leader in patient care, vision research and physician education, and is highly ranked nationally. The ophthalmologists of the Keck School are actively involved in clinical trials at LAC+USC Medical Center, in addition to The Vision Center at Children’s Hospital Los Angeles. Clinical services include: Cataract, Cornea and External Disease, Glaucoma, LASIK, Neuro-ophthalmology and Adult Strabismus, Ocular Oncology, Oculofacial Plastic Surgery, Ophthalmic Molecular and Immuno-Pathology, Pediatric Ophthalmology, Specialty Contact Lenses and PROSE, Uveitis and Ocular Inflammation and Vitreoretinal Surgery and Retinal Disease.

**Neurology**: The department delivers state-of-the-art care to patients while advancing clinical and basic science research, with extensive experience in numerous subspecialties, including cerebrovascular, neuro-oncology, spine, endovascular, functional, pediatric, radiosurgery and trauma neurosurgery. Services are organized into multidisciplinary centers of excellence, working closely with colleagues across Keck Medicine of USC and include the following centers: cerebrovascular, comprehensive epilepsy, movement disorders, neuro-oncology, neurorestoration, pediatric nerve surgery, peripheral nerve surgery, pituitary disease, radiosurgery, skull base surgery, spine and traumatic brain injury.

**Urology**: With a 30-year foundation and an experienced team which includes more than 65 board-certified urologists, radiologists, oncologic surgeons and specialized pathologists, the department’s
clinical forte is cutting-edge robotic, open and endourologic surgical expertise. Faculty members practice the complete range of urologic subspecialties as well as conducting research in the following areas: bladder cancer, endourology, kidney cancer, men’s health, pediatric urology, prostate cancer, pelvic medicine and reconstructive surgery, reconstructive urology and prosthetics, testis cancer and urology preventive medicine.

**Orthopedics:** Working at Keck Medical Center of USC and affiliated institutions, such as LAC+USC, the Department of Orthopedic Surgery features some of the country’s top specialists in total joint implant and revision surgery, sports medicine, arthroscopic surgery, hand surgery, replantation surgery, foot and ankle disorders, spinal disorders, musculoskeletal neoplasm, trauma, as well as reconstructive surgery following sequela of trauma, embracing a multidisciplinary, collaborative approach to research and patient care programs. The department’s Residency Program is the third largest in the United States.

**Nephrology:** The Division of Nephrology and Hypertension operates both in the public sector at LAC+USC Medical Center and in the private sector at USC University Hospital, USC Norris Comprehensive Cancer Center, and DaVita-USC Kidney Dialysis Center. Keck Medical Center of USC is ranked #37 in the nation for Nephrology in US News and World Report’s Best Hospitals 2016-2017 rankings. At LAC+USC Medical Center, the division of Nephrology and Hypertension has a 20-bed renal ward and an eight-bed Acute Hemodialysis Center. In addition, the Division provides approximately 200 consultations per month.

**Oncology:** The Division of Oncology has four sections: Gastrointestinal Malignancies, Genitourinary Malignancies, Solid Tumors and Women’s Malignancies and provides medical oncology clinical services at LAC+USC Medical Center, USC Norris Cancer Hospital (Norris) and Keck Hospital of USC. At LAC+USC, the division is responsible for two inpatient consultative services for seriously ill patients with solid tumors and those receiving inpatient-based chemotherapy. Ambulatory patients are seen in five half-day clinics. Outpatient-based chemotherapy and blood product administration occur daily in the LAC+USC Infusion Center.

**Otolaryngology:** The Caruso Department of Otolaryngology – Head and Neck Surgery provides patients with advanced surgical options and innovative techniques such as transoral laser microsurgery, transoral robotic surgery and microvascular head and neck reconstruction surgery, and provide patient care and conduct research in the following specialties: childhood communication, facial plastics and reconstructive surgery, head and neck cancer, hearing and balance, neurotology-skull base surgery, sinus and nasal disorders, sleep medicine and voice and swallowing.

### c. Relationships with Research Programs/Institutes

Faculty members of USC’s research institutes and centers and institutes are predominantly PhD trained and do not hold advanced degrees in the health professions. There are a few exceptions:

- Norris Comprehensive Cancer Institute – which is aligned with multiple academic departments, but in particular draws from the Department of Medicine
- USC Roski Eye Institute – which is directly aligned with the Department of Ophthalmology – USC ranks #2 in Blue Ridge Institute’s 2015 ranking, which is our highest ranked clinical department in NIH funding.
- Ming Hsieh Institute for Research on Engineering-Medicine for Cancer – which is run as a funding
program, requiring recipients to form collaborations of medical doctors with scientists and engineers.

The Norris Center includes basic research, translational research and clinical research, as well as provides clinical services, and is therefore the most comprehensive by design.

Other centers and institutes in the Keck School, such as Zilkha, Broad and Stevens, do not at present have a clinical arm. Other health focused activities exist outside of the Keck School, addressing a broad range of health issues. MD trained faculty are sometimes engaged in these efforts through outreach efforts.

The Blue Ridge Institute’s 2015 rankings for clinical departments includes:

- Internal Medicine – USC ranked #43 with $21.5M in awards
- Neurology – USC ranked #23 with $7.1M in awards
- Pathology – USC ranked #29 with $6.9M in awards
- Radiology – USC ranked #43 with $1.3M in awards
- Surgery – USC ranked #40 with $1.7M in awards

In some departments, research support is concentrated in multi-center industry-sponsored clinical trials.
## 10. APPENDICES

### a. Appendix A. Fiscal Year 2016 Expenditures

<table>
<thead>
<tr>
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<th>Number of Active Accounts</th>
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